EXPLORING THE IMPACT OF INVOICING CURRENCY ON FOREIGN TRADE

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Abstract. *This research paper examines the influence of invoicing currency on international merchandise exchange. The study delves into how the choice of currency in which invoices are issued affects global trade dynamics, market competitiveness, and economic relationships between countries. By analyzing trade data and currency trends, this paper aims to provide insights into the implications of invoicing currency on pricing strategies, trade balances, and overall market stability. The findings of this research contribute to a deeper understanding of the complexities of international trade and highlight the significance of invoicing currency in shaping the global economy.*

Keywords: *invoicing currency, international trade, merchandise exchange, global economy, currency choice, trade dynamics, market competitiveness, economic relationships, pricing strategies, trade balance, market stability.*

Introduction

The determinants of the choice of invoicing currency in international trade have been a longstanding topic of interest among economists, yet limited data availability has hindered comprehensive understanding. This research introduces a novel dataset on currency invoicing in trade across selected countries, aiming to fill this gap in knowledge. Specifically, the study delves into the utilization of the euro in international trade invoicing, offering a comparative analysis of the euro's role versus that of the U.S. dollar as prominent global vehicle currencies. This study lays the groundwork for the special thematic focus of the December 2005 edition of the Review of the International Role of the Euro, contributing valuable insights to the existing literature on currency invoicing in international trade.

Previously, it was widely believed in theoretical literature that exporters had a preference for pricing their products in their own currency. However, an important concept to consider is the practice of "pricing to market," where monopolistic firms adjust their prices based on varying demand elasticities across different countries. This strategy allows them to set different prices in different markets. While exporters could engage in pricing to market regardless of whether they invoice in their own currency (known as "producer currency pricing") or in the local currency of the market where their products are sold ("local currency pricing"), the presence of flexible exchange rates and the costs associated with changing prices may lead exporters operating in competitive local markets to opt for local currency pricing to mitigate the impact of exchange rate fluctuations on their competitiveness.

The interplay of market power and nominal rigidities has brought the issue of currency invoicing choices to the forefront, particularly since fully adopting local currency pricing for imports would also mean no immediate pass-through from exchange rate fluctuations to domestic inflation in the importing country. Thus, the decision on the currency in which international trade is invoiced carries significant implications at both the microeconomic and macroeconomic levels. At the firm level, the choice of invoicing currency influences the profit maximization strategies of firms engaged in international trade. On a macroeconomic scale, the currency used in invoicing international trade impacts business cycle correlations between countries and the transmission mechanisms of monetary policy. The issue of why certain currencies are chosen for international trade has become particularly relevant in light of the rising utilization of the euro in global trade by various countries, including European Union (EU) Member States, as well as EU acceding and accession nations. Additionally, there are indications that the surge in euro usage may be attributed to its increasing prominence as a vehicle currency, which is a currency utilized between two parties outside the currency's country or region of origin.

The key finding of this study underscores that the affiliation or potential membership in the European Union (EU), possibly leading to the eventual adoption of the euro, and the presence of a firm peg to the euro significantly influence a country's decision to use the euro as the invoicing currency in its trade transactions. The transition to the euro as a common currency in the eurozone has led to a rise in euro invoicing at the expense of the U.S. dollar. While there is evidence of increased euro invoicing both for bilateral trade and as a vehicle currency, its usage as a vehicle currency appears to be somewhat limited compared to the U.S. dollar. Empirical findings suggest that heightened monetary instability, indicated by significant inflation differentials and low export diversification, is associated with less euro invoicing, while the opposite holds true for the U.S. dollar, affirming its status as a preferred vehicle currency. Nonetheless, indications of the euro's role as a vehicle currency are observed in certain scenarios. Countries lacking a forward market for their currency are more prone to invoicing in U.S. dollars, but also exhibit a tendency to utilize the euro for invoicing. Moreover, countries experiencing high exchange rate volatility against the euro are more inclined to invoice in euros. Overall, the euro is increasingly utilized as an invoicing currency, particularly by countries anticipating the adoption of the euro in the future.

In the realm of international trade, the choice of invoicing currency plays a critical role in shaping the dynamics of merchandise exchange among nations. The impact of invoicing currency on global trade has garnered increasing attention from researchers and policymakers, highlighting its significance in influencing market competitiveness, trade balances, and economic relationships between countries. This research paper seeks to explore the implications of invoicing currency on international merchandise exchange, delving into how different currency choices affect pricing strategies, market stability, and overall trade patterns. By analyzing trade data, currency trends, and economic indicators, this study aims to provide insights into the intricate relationship between invoicing currency and the global economy. Through an in-depth examination of these key factors, this research endeavors to contribute to better understanding of the complexities of international trade and shed light on the crucial role played by invoicing currency in shaping the modern global marketplace.

The selection of currency for invoicing in international trade has significant impacts on both individual firms and the wider economy. At the firm level, the choice of currency can affect profit maximization, while at the macroeconomic level, it can influence business cycle correlations between countries and the transmission of monetary policy. The effects of currency invoicing on exchange rate pass-through have been extensively studied in theoretical and empirical literature, with the New Open Economy of Macroeconomics literature playing a key role. While traditional macroeconomics assumes that export prices are set in the exporter's currency, leading to expenditure switching in response to exchange rate fluctuations, the new literature considers the possibility of pricing to market, where prices are set in the local currency and do not change with the exchange rate. Recent research has shown that the decision to invoice in a particular currency involves a trade-off between price uncertainty and quantity uncertainty, with exporters choosing to invoice in their own currency to avoid price uncertainty but potentially facing quantity uncertainty due to fluctuations in the local market. In situations where demand for a product is highly sensitive to price changes, exporters may opt to set prices in the currency of their competitors.

The decision regarding which currency to use for invoicing is crucial for maximizing profits at the firm level and for the effectiveness of monetary policy transmission. Despite the limited availability of data, there have been only a small number of econometric studies conducted on the choice of invoicing currency. These studies have primarily focused on individual countries such as Canada, the Netherlands, and Sweden. It is essential to utilize a macroeconomic multi-country database to demonstrate the broader applicability of these findings in comparison to single-country studies. Goldberg and Tille give the first empirical findings on a broader set of countries. They mainly focus on the role of the U.S. dollar as invoicing currency, though [Goldberg and Tille, 2005]. This research paper utilizes a significantly larger dataset than previous studies. Data on EU countries has mainly been sourced from the European System of Central Banks (ESCB), while data on non-EU countries was collected from various national sources such as central banks and statistical offices. Apart from the expanded dataset, the main focus of this paper is on the euro's role as a vehicle currency. Specifically, the analysis investigates how the introduction of the third stage of Economic and Monetary Union (EMU) has impacted invoicing practices in international trade and explores the potential role of the euro as a vehicle currency. Additionally, the study examines whether the increasing prevalence of euro invoicing is driven by economic fundamentals or by the likelihood of Central and Eastern European countries eventually adopting the euro.

The key finding of the study is that a country's membership or potential future membership in the EU, as well as its alignment with the euro through a hard peg, significantly influence the choice of the euro as the invoicing currency in international trade. The adoption of the euro in the euro area has led to an increase in invoicing in euros, displacing the U.S. dollar to some extent. While the euro is gaining traction as a vehicle currency, its usage remains lower compared to the U.S. dollar. The analysis indicates that countries experiencing higher monetary instability, indicated by large inflation differentials and lower export differentiation, are less likely to invoice in euros, whereas the opposite is true for the U.S. dollar, reinforcing its dominance as a preferred vehicle currency. However, there are indications of the euro's potential as a vehicle currency. Countries without a forward market for their currency are more inclined to invoice in euros, as are countries with high exchange rate volatility against the euro. Overall, the euro is increasingly being used as an invoicing currency and as a vehicle currency, particularly among countries with prospects of adopting the euro in the future.

Literature Review

A number of authors have produced influential works in the field of international trade in finance, providing valuable insights into the impact of invoicing currency on global trade dynamics. By reviewing their research papers, articles, and publications, one can gain a comprehensive understanding of the complexities and implications of currency choice in international trade transactions.

The topic of "Vehicle Currency Use in International Trade" as explored by Goldberg and Tille focuses on the selection and utilization of currency as a vehicle for facilitating international trade transactions. The study delves into the factors influencing the choice of vehicle currencies, such as the role of major currencies like the U.S. dollar and the euro in invoicing practices. Additionally, it examines how economic factors, exchange rate volatility, and country characteristics impact the preference for specific currencies in international trade. The research sheds light on the dynamics of currency usage in trade relationships and provides insights into the evolving role of different currencies as vehicles for global commerce [Goldberg and Tille, 2005].

Goldberg and Tille's examination of vehicle currency use in international trade delves into the various factors that influence the selection of currencies for invoicing and settlement purposes. The study analyzes the significant role played by major currencies, particularly the U.S. dollar and the euro, in facilitating cross-border transactions. One key aspect explored in the research is the impact of a country's affiliation with the European Union and its potential adoption of the euro on the choice of currency for trade invoicing. The study reveals that countries with aspirations to join the eurozone are more inclined to use the euro as an invoicing currency, thereby increasing its prevalence in international trade transactions. Moreover, Goldberg and Tille highlight the importance of economic stability and exchange rate volatility in determining the preferred vehicle currency for trade. Countries experiencing high inflation differentials or exhibiting greater exchange rate volatility vis-à-vis certain currencies may be more inclined to use alternative currencies, such as the U.S. dollar, for invoicing purposes.

A professor of international economics at the Graduate Institute in Geneva, Richard Baldwin has conducted research on globalization, traded patterns, and the role of currency in international trade. His insights on the impact on invoicing currency on trade dynamics are highly regarded in the field. One of Richard Baldwin's research papers on international trade and currency invoicing is titled "Gravity Chains: Estimating Bilateral Trade Flows When Parts and Components Trade Matters". This paper explores the complexities of global supply chains and how they affect the invoicing of international trade transactions. It examines how the fragmentation of production processes across countries impacts trade flows and the invoicing of goods in different currencies. The paper highlights the importance of understanding these dynamics for analyzing trade patterns and the effects of exchange rate fluctuations on international trade [Richard Baldwin, 2011]. A professor of public affairs and economics at the University of Wisconsin-Madison, Menzie Chinn has expertise in international finance and trade. His research often focuses on exchange rates, currency choice, and their implications for international trade. One of the research papers by Menzie Chinn on international trade and currency invoicing is titled "China, Hong Kong, and Taiwan: A quantitative assessment of real and financial integration". In this paper, Menzi Chinn examines the levels of real and financial integration between China, Hong Kong, and Taiwan. The author uses quantitative methods to analyze various indicators such as trade flows, investment patterns, and financial market linkages. [Menzie Chinn, 2003].

A professor of economics at the University of California, Berkeley, Maurice Obstfeld is a leading expert in international economics and monetary policy. His work on exchange rate regimes and the effects of currency choice on trade flows has influenced scholarly debates in the field. Some of his notable works on related topics include "The Global Dollar Cycle" published in 2022, and "Global Dimensions of US Monetary Policy" published in 2019. These papers address issues related to international trade, currency dynamics, and global macroeconomic imbalances [Maurice Obstfeld, 2022, 2019]. A professor at the London Business School and a renowned economist, Helene Rey has made significant contributions to understanding the link between exchange rates, monetary policy, and international trade. Her research on global financial markets and currency movements sheds light on the impact of invoicing currency on trade transactions. One of the research papers by Helene Rey related to international trade and currencies is "International Channels of Transmission of Monetary Policy and the Mundellian Trilemma". In this paper, Helene Rey explores the international channels through which monetary policy is transmitted and their implications for the Mundellian trilemma, also known as the impossible trinity. The Mundellian trilemma posits that a country cannot simultaneously have a fixed exchange rate, independent monetary policy, and free capital mobility. Rey discusses how changes in monetary policy in one country can affect other economies through various channels such as exchange rate movements, interest rate differentials, and capital flows. She argues that in a globalized world with integrated financial markets, central banks' decisions can have spillover effects on other countries, leading to challenges in achieving macroeconomic stability. The author also examines how policymakers' responses to these international spillovers can be constrained by the Mundellian trilemma, as they must make trade-offs between exchange rate stability, monetary autonomy, and capital mobility. Rey suggests that coordination among central banks and international policy cooperation may be necessary to mitigate the negative impacts of these transmission channels. [Helene Rey, 2016]. First Deputy Managing Director of the International Monetary Fund, Gita Gopinath is a prominent authority on international finance and macroeconomics. Her research often delves into the effects of currency fluctuations on trade balances and the role of invoicing currency in shaping international trade patterns. One of the research papers by Gita Gopinath related to international trade and currency invoicing is titled "The International Price System". This paper explores the implications of global price dynamics, exchange rate fluctuations, and trade patterns on the international monetary system. Gopinath's research delves into how changes in relative prices impact countries' terms of trade, competitiveness, and economic welfare. The study sheds light on the role of exchange rates in facilitating international trade and influencing currency invoicing practices. It offers insights into the complex interactions between price levels, exchange rate regimes, and trade policies in the global economy [Gita Gopinath, 2016].

Research methodology

While researching the impact of invoicing currency on international trade, a combination of quantitative and qualitative research methodologies is employed to analyze the complex interactions between currency choice and trade dynamics. Grouping, comparative and economic analysis, induction and deduction, economic-statistical methods, and expert assessment are widely used in this article.

Analyzes and results

According to economic theory, currencies that are highly traded, or "liquid," are more likely to be preferred for exchanging goods due to their low transaction costs. The choice of invoicing currencies can affect a country's trade balance by influencing exchange rate fluctuations.

In the context of globalization, various factors play a role in determining the currency in which trade transactions are invoiced. This choice may be influenced by industry standards, such as the common practice of pricing oil and petroleum products in US dollars, or by historical trading relationships between countries. From a business perspective, the decision on invoicing currency is significant as it exposes traders to exchange rate risks, affecting both sides of the trade. Importers often seek to minimize foreign currency invoicing to manage risks, while exporters may prefer to dictate the currency of payment to optimize export earnings. Some exporters, especially those with significant overseas markets, may choose to invoice in their trading partner's currency to control price volatility and gain a competitive advantage in foreign markets.

In cases where enterprises are required to invoice in a foreign currency, they may seek to mitigate risks by utilizing various financial tools such as trade credits or hedging instruments, which are typically more accessible to larger companies. Managing exchange rate fluctuations becomes especially crucial for industries with complex production processes, such as ship or aircraft manufacturing, or for those with significant trading activity in futures markets. In the globalized business environment, large multinational corporations have a greater ability to leverage transfer pricing and operational hedging strategies to effectively manage their exposure to exchange rate fluctuations.

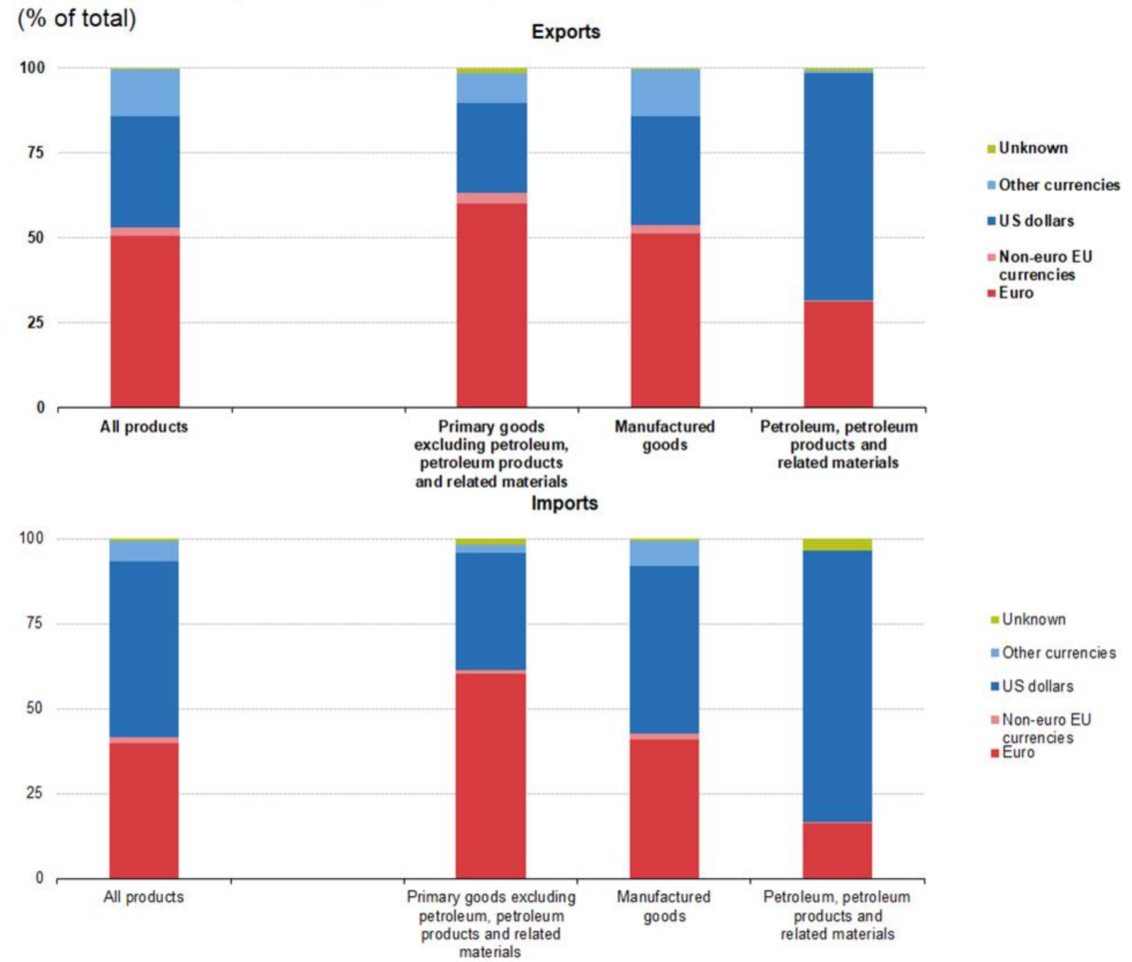

Figure 1: Extra-EU trade by invoicing currency, 2022 (% of total)

Source: Eurostat (ext_lt_invcur)

In 2022, the European Union imported goods from non-member countries, with 51.7% of these imports invoiced in US dollars and 39.9% invoiced in euros. Certain primary products that are commonly traded globally, such as oil and gold, are typically invoiced in a specific currency. For instance, due to the EU's substantial imports of crude oil, it is not surprising that 79.9% of petroleum-related imports into the EU were invoiced in US dollars, while only 16.3% were invoiced in euros. In contrast, for primary goods other than petroleum, 60.2% of imports were invoiced in euros, which was significantly higher than the 34.7% invoiced in US dollars.

When it comes to exports from the European Union to non-member countries in 2022, a majority of goods (50.4%) were invoiced in euros, while approximately one-third (32.8%) were invoiced in US dollars. The proportion of EU exports invoiced in euros was higher compared to imports for manufactured goods and petroleum, and nearly equal for primary goods. The euro was the currency of choice for EU exports of primary goods excluding petroleum (60.0% invoiced in euros) and manufactured goods (51.2% invoiced in euros). However, exports of petroleum and related materials predominantly used US dollars (66.7%).

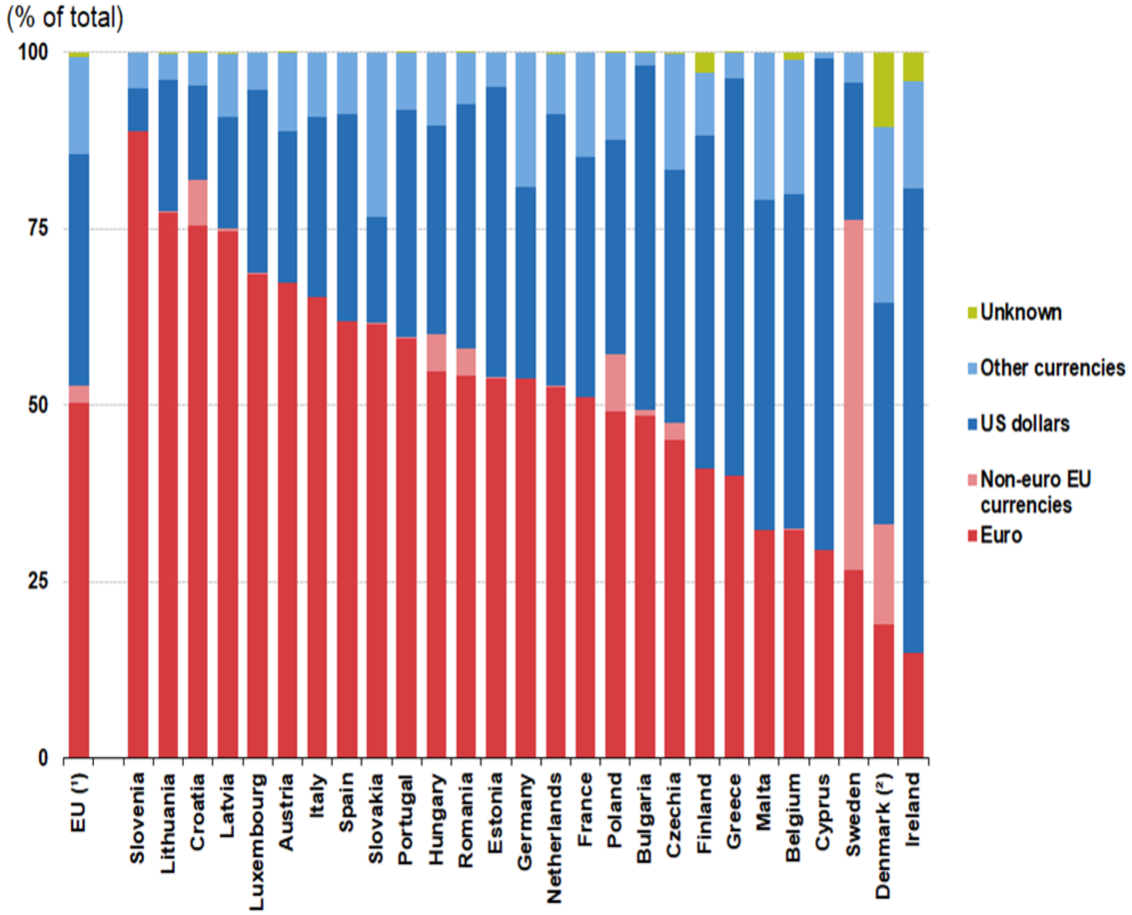

Figure 2: Extra-EU exports by invoicing currency, 2022 (% of total)

Source: Eurostat (ext_lt_invcur)

Figure 2 displays data on individual EU Member States regarding the proportion of their extra-EU exports based on invoicing currency. In 2022, a majority of Member States (18 out of 27) primarily invoiced their exports to non-member countries in euros. The highest percentages were observed in Slovenia (88.8%), Lithuania (77.4%), Croatia (75.5%), and Latvia (74.7%). In eight countries, including Cyprus (69.5%), Ireland (65.8%), and Greece (56.2%), the US dollar was the most commonly used currency for exports. On the other hand, Sweden had the highest share of EU currencies other than the euro for exports (49.7%), while in Denmark this stood at 31.4% in 2020.

In 2022, the US dollar emerged as the dominant invoicing currency for extra-EU imports among EU Member States, with 19 out of 27 Member States favoring it. The Netherlands and Finland had the highest shares, with percentages of 67.5% and 67.0%, respectively.

Among the EU Member States in 2022, the euro emerged as the most favored currency for invoicing extra-EU goods imports in five countries. Slovenia had the highest share at 70.2%, followed by Latvia (62.9%), Slovakia (59.8%), Croatia (58.6%), Austria (57.5%), and Italy (56.9%). Conversely, in Denmark, Sweden, and Ireland, the euro was used for invoicing less than a quarter of all goods imported from non-member countries, with percentages of 22.9% (in 2020), 22.2%, and 20.0%, respectively.

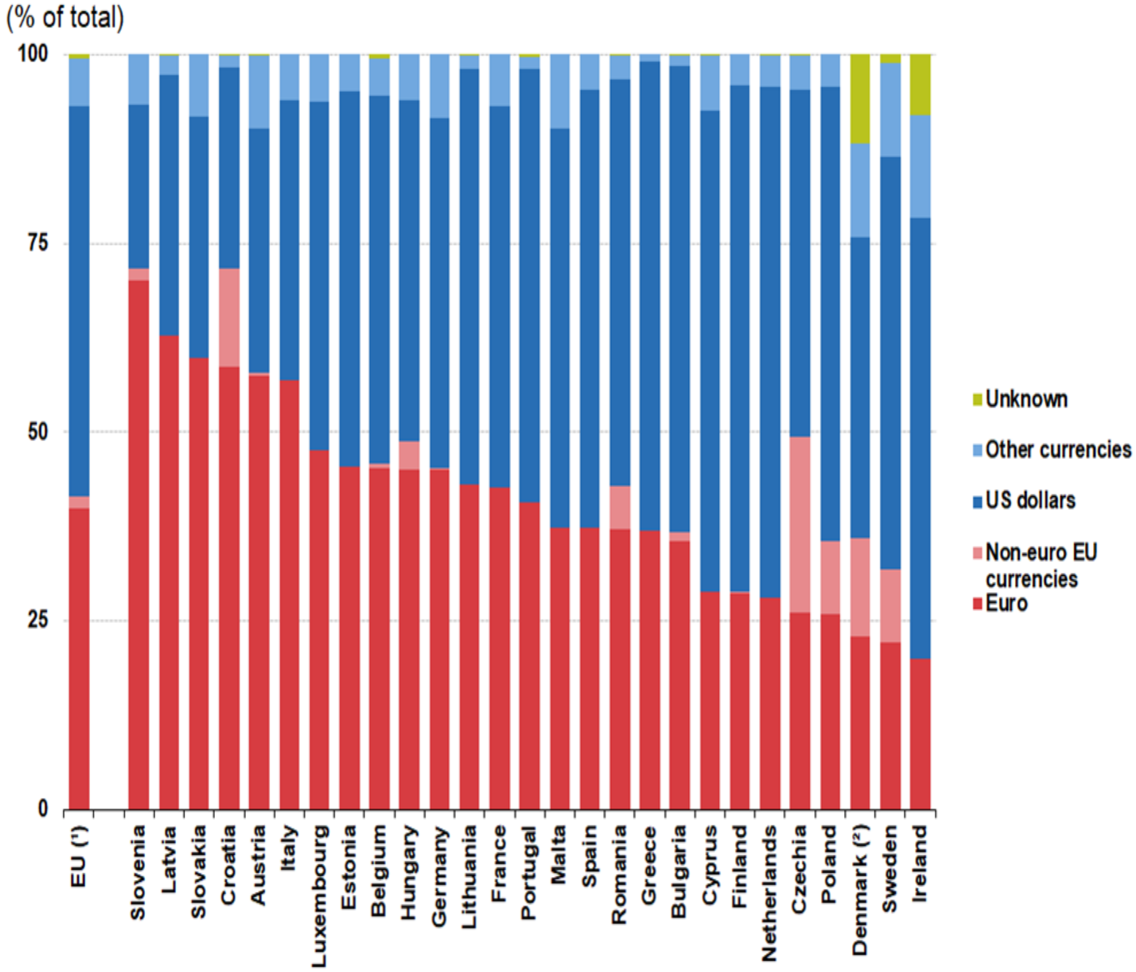

Figure 3: Extra-EU imports by invoicing currency, 2022 (% of total)

Source: Eurostat (ext_lt_invcur)

Summary and Recommendations

The choice of invoicing currency in international trade has a significant impact on various aspects of the transaction, including exchange rate risk, transaction costs, and market competitiveness. This article involves the effects of invoicing currency on international trade and evaluates the advantages and disadvantages of different invoicing currencies, such as the US dollar, euro, and local currencies. Additionally, it discusses the importance of considering factors like market volatility, currency stability, and hedging strategies when deciding on the invoicing currency for international trade transactions.

Based on the findings of this research, it is recommended that businesses carefully consider the choice of invoicing currency in their international trade transactions. Factors such as exchange rate risk, transaction costs, and market competitiveness should be taken into account when deciding on the invoicing currency. Furthermore, businesses should evaluate the benefits of using different currencies, such as the US dollar for its stability and liquidity, the euro for its widespread acceptance in Europe, and local currencies for reducing exchange rate risk. Additionally, businesses should focus on implementing effective hedging strategies to manage currency risk in international trade transactions. Overall, a thorough analysis of the impact of invoicing currency on international trade can help businesses make informed decisions and mitigate risks in their global transactions.

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