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An investigation of the impact of exchange rate fluctuations on the foreign economic activity of countries

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ABSTRACT

This study examines the complex relationship between exchange rate fluctuations and foreign economic activity of countries, particularly focusing on U.S. trade with its major global trading partners over a 25-year period. Based on mixed-methods, consisting of descriptive analysis and trend analysis and a rigorous correlation and regression to a country level, this thesis provides a macro-view and a country-specific study of the impact of exchange rate volatility on bilateral trade balances and investment.

The results indicate that exchange rate behaviour is influenced by a combination of international economic events, regional disturbances and domestic policy actions. The U.S. dollar has had major periods of appreciation, especially the early 2000s and during the 2008 financial crisis; but currencies in emerging economies like Brazil and Mexico have had substantial depreciation. Meanwhile countries with fixed or tightly managed exchange rate regimes, such as Saudi Arabia and China, trade and investment patterns were found to exhibit lower volatility and were also less sensitive.

The results of the analysis show that U.S. trade is always tethered by at least the partnership with Canada or the partnership with Mexico and that trade dynamics with China and with Germany also persistently play a key role in determining U.S. trade. However, despite major geographic and institutional advantages, the United States runs persistent trade deficits with several of these partners, and these deficits tend to expand when the dollar is appreciating. The econometrics both demonstrate significant and negative correlations of exchange rates with U.S. exports to economies such as Germany, France, China, and Japan, reflecting a weaker dollar will generate export expansion. On the other, sensitivity of exports to such fluctuations is still negligible in case of trade to countries such as Saudi Arabia, where there is also a pegged exchange rate system. Regarding FDI, significant negative correlations were observed between exchange rate depreciation and inward investment flows from countries such as the United Kingdom, Germany and Canada, implying that investors are quite concerned with exchange rate risk. In contrast, in the case of the economies having relatively stable or pegged currencies, for example, Japan and Saudi Arabia, exchange rate variations could bring about less effect on FDI behaviour.

This study has a number of implications for international economic theory. It underscores the importance of modelling exchange rate effects in the context of institutional arrangements, trade agreements, and structural asymmetries. In practical terms, the study articulates specific recommendations for policymakers (in Favor of improved exchange rate management and diversification of the trade portfolios), for investors (in terms of considering exchange rate sensitivity in risk assessment models), and for international organizations (calling for greater transparency, tailor-made economic advisories, and region-wide currency stabilization mechanisms). In conclusion, and the study shows the importance of exchange rate dynamics as an integrated policy measures play an essential role in strategy for the global economic relationships and financial investment decisions in a driven volatile global financial market.

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CHAPTER 1.

INTRODUCTION

Background and Rationale

One of the most studied phenomena in international economics and finance is how changes in exchange rates affect countries' international trade and operations. Changes in the value of one currency in relation to another, known as exchange rates, can have serious consequences for countries that participate in international commerce, investment, or financial transactions. The impact of variations in the exchange rate on several facets of a company's international economic activities has been studied in the past. Examining how changes in exchange rates impact international trade volume, pricing, and composition for various types of businesses and sectors is part of this process. Research has also looked into how changes in exchange rates affect the timing, location, and size of foreign investments made by businesses. It has also been studied how changes in the value of one currency relative to another affects a company's ability to borrow money, lend money, and manage risk (Cherif & Dreger, 2016). The role of exchange rate policies and risk management measures, as well as the policy consequences of changes in exchange rates, have also been investigated. In order to establish successful methods for managing exchange rate risks in the global business environment, policymakers, practitioners, and academics must have a thorough understanding of the complicated link between exchange rate changes and enterprises' international economic activity.

Exchange rate variations and their effect on companies' international economic activities is an important and timely area of study. Changes in the value of one currency relative to another can have far-reaching effects in today's globally integrated economy due to the prevalence of cross-border commerce, investment, and financial transactions. Changes in the value of one currency relative to another can have a significant impact on the volume, price, and composition of a company's international commerce. Foreign investment returns, risks, and costs can all be influenced by these factors for businesses. In addition, businesses that participate in international financial activities, such as borrowing or lending in foreign currencies, may be vulnerable to the effects of variations in exchange rates. It is crucial for policymakers, entrepreneurs, and stakeholders involved in international trade and investment to understand the impact of exchange rate variations on the overseas economic activity of firms. Additionally, it has significant policy implications for facilitating international commerce and investment, controlling risks associated with exchange rate swings, and developing efficient exchange rate regulations. Moreover, this study can yield useful information for businesses' decision-making processes, assisting in the creation of efficient strategies for handling exchange rate risks and maximizing the effectiveness of international trade. Research in this field has the potential to inform policymakers, practitioners, and other academics on the interplay between currency exchange rates and the international economic activities of businesses.

The exchange rate is the most significant adjustment lever in international trade and the most crucial signal for allocating resources on the global market, as stated by Thuy (2019). Furthermore, investment, consumption, pricing, money supply, foreign exchange reserves, and employment are all interconnected in ways that make international trade and capital flows significant to a country's economic growth. Since the exchange rate has such a bearing on economic development, studies of it have naturally piqued academic interest. Interest rates and

exchange rates represent the relative values of a country's domestic currency and its foreign currency in the context of economic globalization (Cobham & Jansky, 2019). There can be no doubt about the significance of exchange rates to the growth of the global economy. Businesses and governments worldwide facilitate the movement of production elements across sectors, industries, and national borders through investment, trade, and other mechanisms in order to boost production efficiency, maximize resource allocation, and advance economic growth (Wei et al., 2019). Zhu et al., 2019 pointed out that studying directional and non-directional changes in exchange rate against the backdrop of RMB two-way floating and economic structure transformation reveals that exchange rate has varied effects on economic growth under different scenarios. Zhang et al. (2018) classify recent theoretical and empirical research on the link between real exchange rate policy and economic growth by tracing the logic of competitiveness and stability in real exchange rate policy back through its historical development. They noted that given the current economic climate, it is crucial to construct an exchange rate strategy that balances competitiveness and stability.

Using panel data from 27 manufacturing sectors, Feng et al., 2021 found that the economic growth performance of domestic industries was affected differently by localization of production and involvement of foreign firms. Foreign direct investment boosted China's economic growth, they said, but at a rate that was lower than the contribution rate of domestic investment. Second, changes in import and export commerce as a result of exchange rates can have an impact on economic growth. According to Dreger et al. (20l6), optimizing import trade structure is an important part of improving economic supply, and that there is a clear positive correlation between economic growth and the change of import trade structure, despite the fact that the background of a country's economic growth in terms of growth and deceleration varies. According to Frieden (2016), an expanding national economy is good for expanding import and

export commerce, but there is no stimulus for national economic growth from expanding import and export trade. The effect of changes in currency rates on businesses' ability to export and import has been the subject of several studies. Studies have demonstrated that swings in exchange rates can reduce a company's ability to compete in global markets, impacting their exports, imports, pricing, and profits (Gay, 2016). When a company's home currency loses value, it may see higher export volumes because its products are more competitive in international markets. When a company's home currency rises in value, however, exports may become more expensive, dampening demand. Companies' competitiveness and profitability may be impacted by fluctuations in the cost of imports due to changes in the exchange rate (Jain & Biswal, 2016).

There are a number of ways in which a company's international economic activity might be impacted by variations in the exchange rate. The effects on international trade are significant. The demand for imports and exports can be affected by fluctuations in exchange rates because of the resulting changes in the relative pricing of products and services. If a company's home currency loses value, its exports may become cheaper to buyers in other countries, leading to higher sales and profits (Ozili, 2021). On the other side, a rise in the value of a company's home currency might make its exports less competitive, resulting in lower export volumes and revenues. The direction and amplitude of exchange rate changes can have considerable positive or negative effects on export and import operations of businesses, as has been shown in a number of studies. Similarly, the type of a company's worldwide business activities determines the extent to which variations in exchange rates affect the company's global economic activity. Exchange rate variations have the potential to impact the financial performance, investment decisions, and risk management strategies of multinational businesses (MNEs) that operate in many countries and currencies. Multinational enterprises (MNEs) may use currency hedging or

risk-sharing techniques, for instance, to lessen the impact of currency changes on their global operations. According to studies, multinational enterprises (MNEs) are better able to weather the effects of swings in the value of the currency they operate in by having a greater degree of international diversity, more access to capital, and superior risk management capabilities (Tien et al., 2019). Foreign direct investment (FDI) attractiveness may be impacted by variations in exchange rates, which in turn affects investment flows and corporate location preferences. Foreign investments may look more appealing if the native currency is falling in value, while local investments may look less appealing if the currency is rising in value. Businesses may choose between domestic and international suppliers depending on a number of factors, including the cost of importing goods from other countries due to variations in the value of the currency (Giroud & Rauh, 2019). Several studies have highlighted the relevance of exchange rate dynamics in determining the global strategies of firms by examining the influence of exchange rate changes on FDI and foreign sourcing decisions.

Statement of the problem

One of the greatest obstacles for countries carrying out foreign economic activity is the function of variations in world exchange prices. Exchange rate volatility impact on business is concerned with how changes in one currency's value relative to another can influence a country's operations. Although the need for foreign exchange rate risk management is deeply understood, the exact channels through which exchange rate fluctuations affect countries' foreign economic activity remains poorly understood.

Although past research has theorized the relationship between exchange rate fluctuations and countries performance, empirical evidence on their effects and countries responses are limited. Moreover, exchange rate dynamics are highly context-specific, requiring nuanced insights into

how countries in a variety of industries and geographical areas are impacted by changes in currency.

Aims and Objectives

The aim of researching the impact of exchange rate fluctuations on the foreign economic activity of countries is to understand how changes in exchange rates affect firms' international business operations and outcomes. Research objectives for the current study are as follows:

- Examining how changes in currency exchange rates affect a country's ability to compete in global marketplaces.
- Examining the impact that currency exchange rate swings have on countries' spending plans.
- To determine the potential benefits and drawbacks to a country's finances from changes in exchange rates.
- Examining the effects of currency fluctuations on countries' international business operations in order to draw policy conclusions
- To aid businesses in making more informed decisions
- To provide a theoretical or methodological contribution to the study of international economics and finance

Research Questions

- How do exchange rate fluctuations affect the export performance of countries, including the volume, pricing, and competitiveness of their international trade?
- What are the effects of exchange rate fluctuations on the import costs and competitiveness of countries in foreign markets?

- How do exchange rate fluctuations impact the investment decisions of countries, particularly their foreign direct investment (FDI) and other forms of international investment?
- What are the risks and opportunities of exchange rate fluctuations on the financial operations of countries, including borrowing or lending in foreign currencies, and how do countries manage exchange rate risks in their financial transactions?
- What are the policy implications of exchange rate fluctuations on the foreign economic activity of countries, and how effective are exchange rate policies, such as fixed or floating exchange rate regimes, and currency interventions, in managing countries' exposure to exchange rate risks?

Study Scope

The present study solely examined the notion of exchange rate variations, not its causes, size, or measurement techniques. The study analyzed the effects of fluctuating currency rates on export and import volumes, corporate profits and competitiveness, and risk management practices throughout the world. Furthermore, the study examined the factors that affect the extent and nature of the impact of exchange rate fluctuations on foreign economic activities of countries.

Limitations of the Study

There are certain limitations to the effect that variations in the value of the currency exchange can have on a country's economic operations in overseas markets. Research on the effects of currency fluctuations and the international activities of countries may not apply universally. Findings from one context or country may not necessarily apply to other contexts or nations due to factors such as the size, location, industry, and international exposure of the countries

analyzed. Complex interactions among macroeconomic variables, political events, and market emotion can lead to swings in exchange rates. It may be difficult to determine whether or not a specific change in the value of the exchange rate has an effect on a company's overseas economic activity because of the possibility of confounding variables. It's common knowledge that exchange rates are unpredictable and can shift fast. The dynamic character of exchange rates necessitates consideration of both the immediate and longer-term impacts, as well as the possibility of temporal delays, in studies of the influence of exchange rate variations on the international economic activity of businesses. The effects of changes in the value of a currency's exchange rate on an economy located in a different country or area or at a different point in time may vary. The generalizability of study findings may be affected by factors such as the level of economic development, exchange rate regimes, and the degree of international trade integration.

CHAPTER 2

LITERATURE REVIEW

Definition and importance of exchange rates

International economics have exchange rates as one of its basic parts, which determines the price of a foreign currency in terms of local currency. These are vital buckets affecting the patterns of global trade, investment flows and economic stability. This includes the price at which one currency may be exchanged for another with important implications for economic policy. It is important to have stable exchange rates which promote trade and investment opportunities and allow for meaningful monetary policy. Policymakers need to give the highest priority to enhancing the stability of exchange rate to improve economic performance as well as avoid the problems that currency related risks may cause. Exchange rate is an important factor in the world economy that can serve as an indicator of the health of economy and influence the international trade as well as investment decisions. A currency's exchange rate against others has a major impact on a nation's trade output, inflation numbers and foreign direct investment (FDI) inflows.

The exchange rate is the rate at which one currency may be converted into another currency. It serves as a vital sign of a nation’s economic wellbeing and competitiveness on the world stage. Exchange rates can broadly be divided into two types- fixed (or pegged) exchange rate and floating exchange rate. Fixed exchange rates are determined and managed by a country's government or central bank, whereas floating exchange rates are determined by market forces with no direct government involvement. The arrangement of exchange rate can play a

significant role in the economic performance and its response to external shocks (Maya et al.,2012).

There are many reasons why exchange rates are important, but the most important seem to be because they affect trade and investment across the globe. Stability in the exchange rate creates an environment conducive for trade by reducing the uncertainty for exporters and importers. If exchange rates vary significantly then the effects on businesses can be substantial, there may be difficulties to correctly price goods and services, resulting in a fall of trading volumes. Auboin and Ruta (2023) demonstrate in their analysis focusing on exchange rate and trade flows area, that especially in less well-developed financial markets, exchange rate volatility leads to a negative impact on trade flows. Such volatility can discourage foreign investments because investors want stable environments that will reduce the risks of currency fluctuations.

In addition, exchange rates influence the competitiveness of exports of a country. Domestic currency depreciation renders cheaper exports for foreign purchasers, potentially rising export volumes. In contrast, an appreciation might make exports pricier and decrease demand. For example, Chavez's retrospective analysis (2020) discusses how undervalued currencies in Latin America had played a role in an uptick of economic growth by setting the exchange rate to flow more favourable for trade.

But exchange rates are more than just trade; they do far more than trade though, playing a huge role in foreign direct investment (FDI) too. Constant exchange rates entice foreign investors due to predictable environment for investment returns. On the other hand, as the result of the study analyzed by Jurzyk and Fritz-Krockow (2004) suggests, with high volatility it is likely that trade decreases, and therefore it is a strong need for the credibility of a fixed exchange rate regime that will boost bilateral trade. This relationship highlights the importance for

policymakers to pursue stable exchange rates in order to stimulate economic activity and attract foreign investment.

It is also important to note the relationship of exchange rates and inflation target. According to Beldi and Djelassi (2017), research in their paper found that the implementation of inflation targeting can affect exchange rate pass-through and volatility and thus exchange rate management is key to macroeconomic stability. This connection illustrates the requirement of aligned monetary and fiscal actions for sustaining stable currency quotes when fulfilling economic goals.

Overview of exchange rate fluctuations and their significance in the global economy

Exchange rate volatility is an important reality of the global economy as they impact how international trade is facilitated, investment flows, as well as the overall stability of the economy of states. The significance of these fluctuations can be understood through various dimensions, such as their impact on international trade, macroeconomic stability and the way firms respond to currency fluctuations.

First, the volatility of exchange rates has proven to be a negative effect on flows of international trade. The consistency in exchange rates provides certainty where fluctuations affect trade transactions. In the context of emerging markets, for example, exchange rate volatility has had a strong influence on export performance and trade balance (Motlagh et al 2018; Tsen 2014). Tsen (2014) and Auboin and Ruta (2013) suggest that the uncertainty caused by exchange rate fluctuations can prevent firms from trading internationally as they cannot forecast future costs and revenues accurately.

In addition, the effect of exchange rate changes on the trade is not uniform; rather, it is strongly dependent on the presence of hedging instruments, production structure, and the extent of economic integration across nations. Factors such as effective hedging mechanisms can counteract the negative impacts of exchange rate volatility on trade, enabling firms to mitigate risks more efficiently (Auboin & Ruta, 2013). On the other hand, if contrasting countries have less developed financial markets, they would be affected in a more pronounced manner since their inability to hedge against changes may be the cause of some of these risks (Tsen, 2014; Wong & Lee, 2017).

Fluctuations in exchange rates have important implications for macroeconomic stability beyond trade. Exchange rate volatility can affect inflation, interest rates and general economic performance. For example, exchange rate volatility in developing nations may cause inflationary pressure at the broad overall level when imports become pricier because the home nation's currency weakens (Begum et al., 2020; رمضان, 2023). The inflationary impact is associated with worsening the complications in terms of monetary policy since the dual objectives regarding inflation management and economic growth cannot be supported (Begum et al., 2020).

Moreover, exchange rate movements not only affect the economy, but also influence firms' behaviour, given the growing importance of multinational enterprises. These companies have operations in various countries and are thus subject to exchange-rate risks. Market value of firms can thus be affected by unplanned exchange rate movement due to the impact on their competitiveness and cash flows (Chen et al., 2015; Shim et al., 2020). As an example, if a firm's home currency appreciates, it may pay lower foreign currency value debts making it able to increase leverage and subsequently investment (Shim et al, 2020). The relationship is both

complex and heterogeneous across companies and in terms of the scale of foreign exposure and international operations (Nucci & Pozzolo, 2010).

The evolution of global economies has made the dynamics of exchange rate fluctuations even more complex. Trade and investment linkages will transmit the impact of changes in exchange rates across borders, impacting the economic environment in several countries at the same time (Li et al., 2022). To illustrate, the example of Renminbi appreciation in China not only posits implications for China's trade balance and economic growth but also for its trading partners who can benefit from export competitiveness and economic stability (Li et al., 2022; Chen et al., 2015).

In addition, monetary policy also played some part in stabilizing exchange rate volatility. Central banks intervene in foreign exchange markets to stabilize their currencies, especially in times of severe volatility. There are different types of such interventions, for example direct market operations, or adjusting interest rates (Liu & Lee, 2020; Charfi et al., 2019). Nevertheless, the efficiency of these instruments may appear to range with the opposite effects like inflation surge or assets bubble increase (Mandal, 2013; Charfi et al., 2019).

Exchange rate fluctuations are not an isolated phenomenon with significant impacts reaching the global economy. These fluctuations can have significant effects on international trade, macroeconomic stability, and firm behaviour, highlighting the need to comprehend and manage them efficiently. At the same time, policymakers need to navigate the complexities of exchange rate dynamics, balancing the demand for stability with the realities of an interconnected global economy. Therefore, research and analysis should continue to identify measures to alleviate the negative impact of foreign exchange rate fluctuations and foster economic growth and stability, considering the deepening globalization of the economy.

Importance of understanding the impact of exchange rate fluctuations

The importance of understanding how exchange rate fluctuations affect enterprises' foreign economic activities stems from several factors, especially in an environment where globalization and a greater connection between markets are taking place. Exchange rate fluctuations have a powerful impact on the competitiveness, financial performance, and strategy of the firm, necessitating that firms understand the dynamics behind exchange rates.

To begin with, the first impact of an exchange rate change is on the competitiveness of international trade firms. According to Inyiama and Ozouli (2014), changes in foreign exchange rates can affect the relative prices of the products and services provided by firm, thus also determining the firm's market position and level of profitability. A domestic currency depreciation makes exports relatively less expensive for foreign buyers, potentially increasing sales abroad. On the other hand, an appreciation increases the price of exports and lowers the price of imports, which could adversely affect the domestic companies that compete with foreign goods (Inyiama & Ozouli, 2014). Thus, knowledge of such volatile behavior enables companies to modulate their pricing and marketing strategies, accordingly.

In addition, movements of the exchange rate are closely related to the enterprise's financial performance. Most firms borrow in foreign currencies to fund their operational needs. An exchange rate change can have negative effects on a firm, and so firms need to be in a position to modify operations, as well as hedge to reduce the impact of changing exchange rates (Aggarwal and Harper, 2010). Such understanding is critical for proper financial planning and

risk management, as changes can produce major differences in earnings and cash flows (Aggarwal & Harper, 2010).

Beyond the direct financial consequences, changes in exchange rates can have repercussions through the key economic drivers that affect the way we operate a business in the world. As a case in point, Niyonsaba (2023) examines the influence of exchange rate volatility on economic growth, foreign direct investment and economic development as a whole. Such firm-level macroeconomic considerations will play a pivotal role in shaping firms' decisions on market entry, investments, resource allocations, and other strategic movements. In general, a stable exchange rate environment is more conducive to investment because it reduces uncertainty and allows better long-term planning (Niyonsaba, 2023).

Moreover, the ability of companies to cope with fluctuations in the exchange rate, can help them to succeed in the international markets. So managing foreign exchange exposure serves to create competitive advantage for the company. Fluctuations can disturb macroeconomics variables such as exports, employment growth, inflation, and even the entire business environment (Mandeij, 2020). Therefore, the nature of these relationships is central to the firms' success in a global economy.

Hedging is an important use of derivatives and other financial instruments to manage risk associated with exchange rates. Illustrated in the analysis conducted on the financial performance of Toyota, effective hedging strategies can lessen the effects fluctuating currency values have on a firm's bottom line (Pan, 2023). These financial instruments can help businesses smooth their cash flows and shield their margins from currency fluctuations.

Overview of impact of exchange rate volatility

Exchange rate fluctuations can lead to uncertainty in pricing and profitability for companies operating in international markets. When exchange rates are volatile, the expense of imported goods, and the income from exports, can change sharply, making it difficult to predict and budget. According to Sari (2023), Indonesia's small and open economy makes the real exchange rate a key consideration for businesses planning their pricing strategies and assessing market opportunities, even though the study found that real exchange rate volatility did not significantly influence Indonesian export volumes in the short term. As a result, firms could have higher transaction costs and risk that would cause them to become conservative and limit their participation in foreign markets or hedge risks associated with currency movement. This uncertainty can thus result in higher transaction costs or force firms to hedge against these losses. Recent studies have shown the implications of hedging on financial stability of firms suggesting that firms that hedge their exposure to exchange rate risk can stabilize their cash flows which potentially affects their financial performance (Fang et al., 2009). On the flip side, companies failing to address such risks correctly might face huge swings in their profits, eroding investor trust and overall business stability. Thus, while a depreciating domestic currency may make exports more competitive, the volatility that accompanies the depreciation can complicate pricing decisions, so effectively that firms might find it difficult to set prices that reflect the oscillating costs of inputs and foreign exchange rates on a consistent basis (Arize et al., 2000).

Exchange rate uncertainty also affects investment decisions. The problem is; enterprises often appear hesitant to enter foreign markets due to the uncertainty of future returns caused by volatile fluctuations in exchange rates. Such hesitance can curtail growth initiatives and damper

both industry and market potential. One of Sari's insights is that while exchange rate volatility does not so much affect the short-term volume of export, it can furthermore determine long-term trade relationships and investment strategies, as firms pursue stability in their operational investment (Sari, 2023). According to Fang, such high levels of exchange rate volatility may discourage firms from investing in foreign markets, as the risk of potential currency losses can inhibit the allocation of capital. This is especially important for multinational corporations operating in various currencies where the risk of currency depreciation can be decisive in how much expected return an investment in foreign country can produce (Fang et al., 2009). As a result, firms must pay close attention to the exchange rate landscape when deciding whether to invest abroad, for the fluctuations affect the risk-reward profile of foreign investments.

The consequences of exchange rate fluctuations can also differ between countries and economic environments. The study further notes that while volatility might negatively affect exports occurring in the shorter run for Sub-Saharan Africa, over the long run this can contribute positively indicating that there exists a complication and context-driven relationship between exchange rate and trade performance as a whole (Sari, 2023). These differences highlight the need to consider local economic conditions and market dynamics when evaluating the consequences of exchange rate

The exchange rate fluctuation affects mainly upon the export activity. As highlighted by Fang et al. (2009) which assert how an exchange rate risk could induce an asymmetric effect on exports and consequently when the currency is appreciated in relation to other currencies is not the same impact as when depreciation happens. For example, a weaker domestic currency makes exports more competitive in foreign markets, and potentially increases sales. But if the currency appreciates, exports could be less competitive, which could negatively impact export

volumes. The difference in response exhibits asymmetry between exporters, reflecting distinct risk perception and hedging behaviour causing the need to construct tailored strategies to manage currency risks effectively (Fang et al., 2009).

Different sectors and markets can be affected differently by the exchange rate volatility. For instance, exchange rate fluctuations can have a bigger impact on gasoline for industries that rely heavily on importing raw materials because such industries' input cost is directly affected by the change in currency values. In contrast, firms that export more than they import may benefit from a depreciating domestic currency as it can increase their competitiveness in foreign markets (Fang et al., 2009). It is critical for enterprises to understand the dynamics of a sector in order to develop risk management strategies that are effective given their unique circumstances.

As noted by Arize et al. (2000): the potential hazard in the exchange rate volatility is its hindrance effect on the development of foreign trade. Numerous empirical studies have verified that extreme variations in the fluctuation rates of exchange rates dissuade firms from international trade given the augmented uncertainty surrounding future cost and revenue profiles. Due to this uncertainty, the transaction costs will rise, to avoid finding themselves caught up in currency risk, businesses may have to incur higher transaction costs on hedging. As a result, companies might restrict their international operations or postpone investment decisions, eventually hindering both trade growth and economic development.

In addition, the impact of exchange rate fluctuations can differ based on the type of business and its exposure to global markets. Certain classes of firms have been found to be more sensitive to exchange rate changes, for instance, small and medium size enterprises (SMEs) may be more impacted than larger firms by exchange rate fluctuations, and due their lower access to hedge

against currency risks (Arize et al., 2000). Moreover, multinationals (MNCs) are generally larger, so the scale of operations allows them to formulate hedging strategies to manage FX exposures compared to smaller firms. But large companies are still susceptible to the negative effects of currency fluctuations as they would also feel a substantial influence on their profitability and competitiveness in the market.

Exchange rate risks can affect the profitability and cash flows of enterprises engaged in international trade. Exchange rates impact on foreign reserves and macroeconomic performance (Loretta, 2021) It moves straight towards foreign exchange risks that decision-makers can take into account in order to write it off for better hedging.

It is also important for firms to have the means to hedge against such risks payables receivables and manage the effect of exchange rate volatility because this would reduce the foreign exchange risks. Companies can use a range of financial tools such as forward contracts, options, and other instruments to hedge adverse currency movement. These hedging strategies may not be effective for some enterprises due to their specific nature and market conditions (Batat & Ahmadu, 2021). This suggests that firms that do not have access to hedging instruments may be more exposed to exchange rate fluctuations, which in turn, could lead to greater financial instability.

As highlighted by Chen et al. (2006), a host country's currency depreciation results in more FDI activity for cost-oriented firms (the relative costs of investment and production in that country are lowered). This attracts higher capital inflow and setting up of production centres which strengthens the company’s competitive position in International trade. But in the case of market-seeking enterprises, the depreciation of domestic currency will discourage FDI because it may elevate the cost of trading goods and services and thus reduce profits (Chen et al., 2006). This

duality highlights the necessity of recognizing the business model and strategic goals of a firm to evaluate the effect of exchange rate volatilities comprehensively. As shown by Wei, reminders about exchange rate fluctuation (specifically Renminbi) have a significant positive impact on China's outward foreign direct investment (OFDI) (Wei 2023). Also, if the Renminbi appreciates, it makes OFDI easier, since foreign assets are at a relatively cheaper price and may promote investment from China to overseas. On the other hand, depreciation may dampen OFDI growth as firms may view foreign investments as riskier and less profitable. This relationship highlights the significance of exchange rate stability for firms contemplating international growth

Exchange rate fluctuations and investment decisions

Impact on investment through revenue and cost channels

The effect of exchange rate volatility on investment is a multichannel phenomenon including revenue and cost channel. Exchange rates significantly impact the economic landscape for businesses, impacting both local and foreign investment choices.

The revenue channel shows that the exchange rate could have a major impact on investment. This is one avenue through which a country can reduce the prices of its goods or services in global markets: When a currency depreciates (becomes weaker), its exports will often become cheaper (relative to other currencies) which can increase revenue for exporters. According to Ng & Souare (2014), in large economies like the US, Japan and the UK, the income channel through which exchange rate fluctuations affect investment is significant. This effect is especially strong in sectors that rely on exports, since a weaker currency means more sales abroad, rewarding firms for investing in capital that expands their capacity to produce. On the

other hand, a high currency can negatively influence export competitiveness, cutting revenue and subsequently investment levels.

Along with the revenue channel, the cost channel is also an important mechanism that induces investment. The cost channel is the effect on the costs of imported inputs and capital goods of exchange rate movements. For example, depreciation of the domestic currency raises the cost of imported materials, which may compress profit margins of firms using such inputs. According to Dhasmana (2013), movements in the real exchange rate have a substantial effect on the performance of manufacturing companies in India via two mechanisms: the revenue channel and the cost channel. The nature of this impact largely hinges on the sensitivity of the firm to foreign markets, including the level of import and export into their process.

In addition, the fluctuation of exchange rates creates ambiguity which can discourage investment too. Canbaloğlu and Gurgun (2018) explained that indicatively, exchange rate fluctuations become increasingly pronounced, causing uncertainty that can facilitate investment in various ways, although effects may vary across different sectors. In industries in which companies are highly exposed to international markets, increased volatility can create greater uncertainty about future revenues and costs, prompting some firms to delay or scale back their investment plans. Musyoki et al. (2012) express the same sentiment direct effect through uncertainty and adjustment costs.

The external-obligations mismatch between exchange rate volatility and investments is complicated by the financial landscape in which companies function. According to Ososuakpor (2021), it is common for a weak financial system to aggravate the adverse impact of exchange rate volatility on firm investment. The study also explains how during periods of currency instability, firms may experience increased borrowing costs and limited access to capital

markets, which impairs their ability to invest. This emphasizes the need for sound monetary and fiscal policies to cushion the capital flight associated with wider exchange rates.

Exchange rate changes do not affect investment uniformly across sectors and economies. Examining the investment effects of exchange rate uncertainty, Caglayan and Torres (2010) show that overall, exchange rate uncertainty is detrimental for investments but the degree to which it is detrimental varies by industry. Similarly, during episodes of elevated volatility, investment in manufacturing sectors that are relatively more adversely affected by exchange rate movements may decline relatively more. This industry-specific answer demonstrates the importance of policymakers addressing the varying features of sectors as they develop policies to manage the impact of exchange-rate variability.

Influence of firm characteristics

Exchange rates and firm characteristics-size, monopoly power, and import penetration are important topics in international economics and business management. Exchange rates, which dictate the worth of one currency compared to another, can have a broad effect on the way firms do business, their monetary performance, and their aggressive placement each at domestic and world markets.

Firm size can be substantially influenced by exchange rate fluctuations. They are exposed to exchange rate risks, especially larger firms with international operations or assets denominated in foreign currencies, while firms with insignificant foreign asset exposure could be almost insulated from it (Li et al. 2019). Empirical findings by Li et al. (2019) suggest that larger firms tend to have a larger currency risk premium, implying that their size is positively related to their exposure to exchange rate fluctuations. This connection stems from the fact that larger

companies are more inclined to participate in international trade, rendering them vulnerable to exchange rate fluctuations. Consequently, to minimize the negative impacts of currency fluctuations, these companies may have to implement more advanced risk management techniques. On the other hand, smaller companies, dependent on a limited presence in multiple international markets, may find that exchange rate movement has less of an immediate effect on them, and those effects may be felt more indirectly via the changed competitive situation.

The second firm characteristic that may be affected by exchange rate changes is monopoly power. It is likely that firms with considerable market power are in a stronger position to pass on the costs of exchange rate volatility to consumers. Specifically, Nucci and Pozzolo (2010) contend that the firms with lower monopoly power are more sensitive to fluctuations in the exchange rate, as they will face foreign competition through import penetration. Firms who are unwilling to shift prices in response to currency movements can experience a decline in profitability and or market share due to this sensitivity. Conversely things heavily monopolized firms are able to adjust and keep pricing/take on their profit margin which restrict their impact from foreign exchange volatility.

Exchange rate changes also have a substantial impact on import penetration; the degree to which foreign goods supply domestic markets. When domestic price of a currency depreciates, imported goods become more expensive. Ke et al. (2018), whose results imply that as exchange rate volatility increases, firms will cut back on foreign input demand and increase domestic input production. This can be especially pronounced in sectors where firms face intense competition from imports.

Exchange rate movements can indeed have a major impact on the cost structures of firms that use a large proportion of imported inputs. Vithessonthi & Tongurai (2013) argue that the

increased volatility of exchange rates may negatively affect the value of a firm by increasing production costs, and subsequently influencing its investment decisions as well as operational strategy. These can inflict short-term pain on firms with a high degree of import penetration but there may also be longer-term structural changes to markets and supply chains that will require firms to reassess their bargaining power, production locations and how they hedge against currency risk.

Furthermore, the relationship between exchange rate movements and characteristics of the firms are not homogenous across sectors and countries. According to Tunc and Solakoglu (2017) medium sized firms and companies without stock exchange listing are the most affected by exchange rate volatility. One way of interpreting this is that firm classification and market positioning influence how exchange rate change fits into operational behaviour and financial performance. Moreover, firms operating in export-related line of business may respond differently to fluctuations in the exchange rate than firms who are in need of competing against imports, adding another layer of complexity to the analysis.

Similarly, exchange rate fluctuations are influenced by the financial environment in which firms operate. For firms with limited access to the capital market, managing the threats posed by currency volatility becomes even harder. They highlight the role of financial constraints in magnifying the adverse effects of exchange rate shocks on trade and investment decisions (Hericourt and Poncet, 2013). Financially constrained firms may have a reduced ability to hedge currency risk and as such they are more vulnerable to the detrimental effects of exchange rate volatility on their operational performance.

Economic exposure and firm strategy

There is economic consequence as of sensitivity of a firm cash flows due to alteration in the exchange rate which depends upon the strategic orientation and structural feature of the industry where the firm operates.

A firm's primary strategic orientation, most notably its internationalization strategy, is the determining factor when it comes to economic exposure. Companies that have a large degree of international activity, for instance those that export or are foreign direct investments, are naturally more exposed to fluctuations in exchange rates. Li et al. (2019) reports that larger firms, which tend to be more involved in international trade and have foreign currency-denominated assets, also demonstrate higher currency risk premiums. It means that a larger firm is more exposed to the exchange rate movements, as bigger companies have generally more sophisticated international operations and hence are more sensitive to fluctuations of the currency.

On the other hand, firms that serve domestic markets will face a lower degree of economic exposure. Since these firms have the majority of their revenues and costs in the local currency, they are less exposed to exchange rate movements. Bartram et al. (2010) highlight that non-financial firm's exposures to foreign exchange rates are systematically related to firm characteristics, including the share of foreign sales. Companies generating a greater percentage of foreign sales are considerably more sensitive to exchange rates, since their revenues are more directly impacted by shifts in currency values. As a result, domestically focused firms may pursue alternative strategies to reduce exposure, including local sourcing of inputs, or pricing strategies that hedge against currency fluctuations.

The industry structure also has an important role in deciding firms' economic exposures. In industries with intense competition and the absence of barriers to entry, firms may face greater exposure to future exchange rate fluctuations. The corporate sector in these environments fails to pass through the currency depreciation induced cost-push inflation into increased prices to the buyers, and hence profits are likely to be lower. In contrast, firms engaged into monopolistic or oligopolistic markets may have greater pricing power, enabling them to withstand a portion of the negative consequences of exchange rate volatility. The findings of Bartram et al. (2010) back this dynamic and emphasizes that certain industry features, including competitiveness and the type of traded asset, can have an important impact on the extent of exposure of firms to exchange rate shocks.

Additionally, the types of products that firms provide may also help differentiate firms on their economic exposures. Firm industries with high import penetration will likely have more relative sensitivity to exchange rate changes as their cost structure is more sensitive to imported inputs. Sectors like manufacturing which rely on foreign resources could pay a higher price when the domestic currency suffers. Such a scenario can drive the firms to change their pricing policy or look for new suppliers to minimize the effect of the currency fluctuation. Although Jorgenson and Timmer (2011) examine structural transformations in economies, they do not address how import dependence might weaken sensitivity to exchange rate movements, so it is not relevant here.

Moreover, the response to exchange rates could also depend on their innovation and technological capabilities. Businesses investing in R&D that hold high innovation capabilities may be more optimal way to react to changing market, such as currency variation. Chen et al. (2017), innovation activities are domain specific, firmly linked to industrial structure, and

capable of increasing the resilience of a firm to economic shocks. Innovative businesses can remain competitive despite unfavourable exchange-rate movements by developing new products and improving their production processes.

Differences in economic exposure are also due to the geographical position of firms. Similarly, I would expect that firms in countries that have high levels of foreign investment or trade are more sensitive to exchange rate changes simply because they are more interconnected with firms in the rest of the world. In regions with extensive foreign trade activity, the bilateral causal relationship between economic growth and industrial structure evolution is more significant (Liu & Hu, 2019). Therefore, companies in these areas will need to implement stronger risk management approaches to handle the intricacies of exchange rate fluctuations.

Moreover, the financial structure of firms has a mediating effect on their economic exposure to foreign exchange fluctuations. Companies with solid financial positions, such as those with access to capital markets and hedging strategies, may be able to manage the risks associated with currency volatility. On the other hand, small firms with poor financial capacity will not be able to hedge efficiently and be affected by the depreciation of the local currency. Huffman et al. (2010) highlight that financial characteristics such as leverage and liquidity influence firm-level exchange rate exposure and thus firm's ability to weather economic shocks.

Role of foreign direct investment in mitigating economic exposure

FDI significantly contributes to managing firm exposure to economic risks, especially in light of globalization and the growing interlinking of economies. Economic exposure is the exposure to fluctuations in exchange rates or other economic variables affecting a firm’s future cash

flows. The opening of economies can also expose firms to new risks, including potential expropriation or changes in local regulations.

In addition, the FDI can help firms gain access to local resources, such as labor, raw materials, and technology. According to Sudibyo (2023), FDI boosts productivity and efficiency while also supplying the essential capital and technology for the economy to develop. Access to local resources thus allows firms to reduce their economic exposure by decreasing their dependence on imports (which are subject to fluctuations in the exchange rate) to buffer local operations. For example, if a company sets up production factories in the foreign market, it can source materials locally, so that currency volatility does not affect its cost structure as much. This strategic advantage is especially important for firms in industries with high import penetration, where changes in exchange rates can have a substantial impact on profitability.

However, beyond access to resources, FDI promotes technology transfer and innovation, which can further mitigate economic exposure. When firms undertake an outward foreign direct investment, they bring with them superior technologies and management practices to the operations at foreign subsidiaries. According to Choe (2003), the technology spill-overs from FDI enhance economic growth by creating higher productivity and promoting innovative activities.

Moreover, FDI can play a role in developing local supply chains, thereby increasing firms' resilience to exposure from economic shocks. In doing so, through more integrated and responsive supply chain that is insulated to external shocks. Shaari et al. (2012) remark that foreign direct investment has a significant causality effect on economic growth especially in developing countries. These local supply chains improve efficiency and reduce costs, which helps offset the effects of exchange rate volatility on companies' activities.

The role of FDI in reducing economic exposure can also be seen from its ability to increase the market power of firms. International collaborations often result in increased market share and influence for both parties, giving their joint ventures more power over pricing strategies during currency fluctuations. According to Oumarou and Maiga (2019), the connection between trade, foreign direct investment, and economic growth emphasizes the role of foreign investments to improve and steer competitiveness. The less they can do so, the more likely they are to experience instability if there is volatility in the returns to their assets, perhaps because they have substantial power in the market and are able to absorb some disadvantageous exchange fluctuations.

But the efficiency of FDI in reducing economic exposure varies among businesses and sectors, and some sectors are more vulnerable than others. Strong absorptive capacity of firms in the local context would extend the benefits FDI could have on resilience. According to Tsaurai (2023), the capacities of the firms to absorb the foreign FDI significantly affect the relation between FDI and economic growth. Investing firms are able to absorb foreign investments into their organisations – thus making use of the positive attributes of FDI while minimising distribution of economic exposure.

In addition, Firm-specific characteristics are another factor which dictates profitability of FDI as an instrument of economic exposure mitigation based on the firm´s nature of industry. There are more industries that face a high level of competition and rapid technological change, and companies in those environments need to be more agile and adaptive in their operations. While Foreign Direct Investment (FDI) may stimulate the economy, this effect will likely depend on the sector (Forte and Moura, 2013). Depending on the firm you represent, firms in high-tech, dynamic industries are more likely to growth via FDI than stable industries.

Impact on enterprise value

Exchange rate variance has a significant impact on Foreign-invested Enterprises (FIEs), affecting its operational capacity, financial performance and strategies. Moreover, as these businesses tend to be involved with cross-border trade, they are more vulnerable to fluctuations in foreign exchange rates. In the following sections, the implications of fluctuations of exchange rates on Foreign Investment Enterprises (FIEs) will be examined utilizing the empirical evidence and theoretical insights from the sources provided.

Ihsan et al. (2018) argue that domestic firms competing with imports are exposed to movements in exchange rates, which can have a large impact on their market value. For multinational companies an appreciation of the local currency effects the value of their real assets negatively, especially if they have a strong dependence on export. On the other hand, this can be an advantage for multinationals that have goods they sell in the home country and are manufactured in the multinational's home country, as it will reduce their costs. This "two-way" effect highlights the intricacies of exchange-rate risk that firms face, given that currency movements will help some companies more than others, and will hurt some companies more than others, depending on firms' relative positions in their respective markets.

In addition, the impact of exchange rate fluctuations on firm performance may differ among industries and firm-specific factors. Hsiao et al. (2017) examined the hospitality industry in Taiwan, using the ARIMA method to investigate the impact of exchange rates on business performance. They find that the effects of foreign exchange rate changes on performance are large and heterogeneous across currencies and firms. This indicates that the level of exposure to exchange rate risks can vary among FIEs across different sectors, implying the need for sector-specific approaches in managing these risks to minimize potential negative outcomes.

FIEs adopt active hedging practices as a response mechanism to exchange rate fluctuations. Multinational firms can hedge against exchange rate risk by trading foreign currencies forward at agreed-upon rates (Wong 2016). This method provides firms with a hedge against movement will limit uncertainty and stabilize cash flows as firms can lock in their exchange rates in advance. Wong's study describes the concept of ambiguity aversion, which has critical implications on the subjective beliefs that govern exchange rate risks. Effective hedging strategies help FIEs the ability to cope with currency fluctuations and provide a hedge in terms of financial performance.

Furthermore, fluctuations in exchange rates affect the pricing and supply chain of FIEs as well. Two-factor analysis of foreign exchange exposure introduced by Alssayah and Krishnamurti (2013) The findings in their study imply that firms cannot only take into account market returns but also take exchange rate changes into consideration when creating their pricing strategies. For example, a falling local currency might require local prices to be adjusted to stay competitive and a rising local currency could translate into less pricing power in overseas markets. All this points to the necessity for FIEs to implement flexible pricing methods that factor in currency changes.

In addition, exchange rate fluctuations can have economic implications that erode firm value, especially for private firms with foreign exposure. The exchange rate is affected by volatility which negatively impacts the financial condition of the firms resulting in a significant effect on the stock prices of the firms (Arora and Akhtar, 2018). The loss of value may stem from rising import cost of inputs, declining price competitiveness in export markets or greater uncertainty in financial forecast. Thus, FIEs are in need of taking concrete measures to mitigate their exchanges rate risks and protect their market shares and financial viability.

Comparative impact of different currency pairs on enterprise value

As globalization progresses and the economic environment evolves, the relative effect of currency pairs on enterprise value remains an important consideration, and research in international finance often focuses on this subject. Exchange rates make an impact on businesses directly and this can have a large effect on their market valuations. In regards to how enterprise value is directly influenced by how well each pair of currencies performs, using the references provided, the following exam will analyse the parity of major currencies as well as lesser-used currency pairs.

The euro/dollar (EUR/USD) is one of the most important currency pairs on the world market. And this pair is regarded as a benchmark for all other currencies because of its high level of liquidity and volume of transactions. The EUR/USD pair also mirrors both the Eurozone and the United States, as such, it is a vital component for any businesses operating with international trade (Morkowski, 2023). Movement in this currency pair can produce significant swings in revenues and costs for businesses doing business in these two large economies. For example, if the euro fell against the dollar it could make European exports less expensive for American consumers which may lead to an increase in sales for European companies, and subsequently add to their enterprise value. In turn, a firmer euro has the opposite effect, eroding the competitiveness of European goods in the U.S. market.

Enterprise value is broadly influenced by the EUR/USD pair as well as the GBP/EUR and CHF/EUR pairs. The GBP/EUR is especially significant for companies doing business in the UK and in the Eurozone. This currency pair of GBP and AUD often moves in tandem and can also impact profitability for companies dependent on cross-border trade between these regions. According to Morkowski (2023), volatile GBP/EUR exchange rates cause profit margin

fluctuations for firms who perform import and export activities, resulting in depreciating valuations in the market. The CHF/EUR is also useful as it can affect firms located in Switzerland and the Eurozone as the Swiss franc is often considered a safe-haven currency. A also strong CHF could make the target more costly to Swiss exporters and likely lower their enterprise value.

Not all firms and industries experience the same impact from fluctuations in currencies. According to Damette and Park (2015), major currency pairs (e.g., euro/dollar) follow different volatility structures than minor currencies (e.g., won/dollar). Their study suggests that currency interventions can have a stronger stabilizing effect in major currency pairs under low volatility regimes. This implies that businesses in an environment of relatively stable major currencies may have lower exchange rate risk, increasing their enterprise value. For firms for minor currencies, this can lead to high volatility or uncertainty in the firm, which in turn might hurt its financial performance or even market valuation.

Meanwhile, the impact of exchange rate changes on foreign direct investment (FDI) is also a crucial factor affecting enterprise value. According to Abdushukurov (2019), currency crises can negatively impact economic growth and FDI in emerging and developing countries. According to Efiong (2018), the negative relationship between the exchange rate volatility and FDI suggests that firms may unravel from investing in countries with less stable currencies. This aversion impacts the amount of capital entering such regions and the subsequent growth potential of their enterprises, which can ultimately have a negative bearing on enterprise value in those regions. Firms that are based in countries with stable currencies are more likely to bring in FDI and as such become more valuable and positioned better in the marketplace.

Export decisions and exchange rate risks

Exchange rates can have a profound influence on a firm’s competitiveness of their products in the foreign market which is likely to impact a firm’s decision regarding entering or exiting the foreign markets.

Exchange rate fluctuations constitute an important source of uncertainty for exporting firms. This volatility, as noted by Tan and Zhao (2017), can greatly impact exporters' profitability as it's reality impacts exporters pricing decisions as well as product combination choices, which determines how they enter and exit global markets. It matters because new exporters tend to be more sensitive to the changes in exchange rates due to their lesser amount of experience and set market presence.

Huang (2017) offers a perspective on China and fundamentals of the export market with respect to exchange rate movements. The paper estimates that a 10% appreciation of the local currency reduces the probability of entering a new market by 0.6% and the probability of remaining in the export market by 1.1%. This implies that the appreciation of the exchange rate can prevent firms from entering new markets and induce existing exporters to leave, which in turn shapes the entire export structure. These results highlight the need to appreciate the way nominal exchange rate changes can affect both entry into foreign markets, and exit from them.

Additionally, a high level of exchange rate volatility significantly influences export decisions. Tunç et al. (2020), suggesting that whereas bilateral exchange rate changes directly affect exports, external exchange rate volatility operates more indirectly. They find that firms may respond differently to fluctuations in exchange rates depending on the type of volatility that they experience. For example, an increase in volatility can drive firms to exit the export markets

more carefully, as the uncertainty around future exchange rates makes pricing and profit projections harder to make. First person at the financial firm

Liu (2020) conducts an empirical analysis on the effect of fluctuations in the RMB exchange rate on the export decisions of enterprises in China. They find that an RMB appreciation increases the probability of exiting an export market substantially while reducing the probability of entering a new market. Additionally, Liu also says that the ability of the foreign-owned enterprise to resist exchange rate risk is significantly higher than the state-owned enterprise and private enterprise. This finding implies that the firm and market-related factors such as ownership structure and experience in the market of the exporting firm would be a deciding factors for at what level the exchange rate fluctuations affect the export decisions.

In addition to this, Tsen (2019) investigates exchange rate volatility and exports in Malaysia and indicates that total exports can be reduced when exchange rate volatility increases. The study further suggests that for risk-averse exporters, the income effect can dominate the substitution effect, resulting in higher exports in the face of increased volatility. This brings us to the findings of the paper and what it adds to the existing knowledge about how export market reacts to changes in exchange rates.

Heterogeneity in enterprise characteristics

Differences in enterprise characteristics meaningfully impact sensitivity of exchange rate variations and defines responsiveness of firms to patterns in currency values. The various effects of exchange rate volatility cannot be ignored as globalization deepens, thus gaining an understanding of this phenomenon is imperative to both policymakers and business leaders.

Productivity is one of the key dimensions of firm heterogeneity. Li et al. (2015) highlight that productive firms are less sensitive to exchange rate shocks. This has been as a result of their notable ability to absorb the cost increases that would arise out of the currency depreciation and still be competitively priced in foreign markets. Less productive firms, however, can find it difficult to adjust to higher costs, which can reduce their competitiveness and may lead them to exit export markets The findings from Li et al. (2015) underline the role of productivity as an important determinant of firm response to exchange rate fluctuations and emphasizes the importance of making greater investments to improve the efficiency of operations in order to hedge against exchange rate risk.

Ownership structure is another important determinant of firms' sensitivity to exchange rate changes. According to Liu (2020), the exchange rate risk resistance of foreign-invested enterprises is stronger than that of state-owned and private enterprises. This is because foreign owned firms tend to come with more resource and human capital with broad risk strategy management. Foreign-owned enterprises are often more diversified across countries and therefore might better hedge against currency reductions. The findings indicate that policymakers need to take ownership structures into account when analysing the potential effects of exchange rate fluctuations on various types of firms.

A firm size is also another important determinant of sensitivity to exchange rates changes. Big companies generally have bigger resources to draw upon making them capable of engaging in advanced hedging strategies to eliminate exchange rate risks. Tang and Zhang (2012) observe that the challenges of currency fluctuations are more manageable for larger exporters, since these firms can remain competitive even with adverse exchange rate movements. On the other hand, the smaller firms would be at a higher risk of currency fluctuations. Similarly, grow this

difference in capabilities translates to supporting smaller firms to develop competent risk management practices to improve their resilience to changes of exchange rates.

Export experience is another source of enterprise heterogeneity influencing the sensitivity to exchange rate changes. Liu's finds that firms with more experience exporting are less likely to stop exporting after currency changes, suggesting more proficient knowledge gained from the skills developed with more practice managing exchange-rate risk. This suggests the need for firms to promote export experience, which may help them mitigate the adverse effects of exchange rate fluctuations and effectively compete in global markets (Liu, 2020)

Second, the intensity of imported inputs may also affect firms' exposures to exchange rate changes. According to Li et al. (2015), firms highly dependent on imported inputs face a higher vulnerability to exchange rate shocks because depreciating currencies raise costs for such firms. This increased responsiveness can lead to lower profits and may cause companies to re-evaluate whether to export. On the contrary, firms that procure a large number of inputs domestically will not be impacted as much by oscillations in the exchange rate and therefore will not lose their competitiveness in foreign markets. This situation highlights the importance of firms closely examining their supply chains and the potential effects of changes in exchange rates on their cost structures.

Exchange rate volatility and trade

Exchange rate magic affects international trade flows, altering the behaviour of international firms. Exchange rate discrepancies are like any other uncertainties, which can impact the pricing, competitiveness, and the quantity of trade between countries.

Foreign exchange volatility influences international trade in many ways, one of the major ways is how it impacts pricing strategies. When exchange rates change dramatically, firms become uncertain of the value of their revenues and costs in the future. This uncertainty can cause hesitance regarding pricing choices, because firm won't like it when they have to price their goods and services but cannot know the future worth of the currency in which they are going to be paid. Exchange rate uncertainty has a dampening effect on international trade, though the magnitude of this effect may differ across economies.

Exchange rate volatility causes firms that are involved in foreign trade to incur higher transaction costs. Firms are exposed to foreign exchange risks because they operate in an environment with changing exchange rates which may lead them to incur additional costs by using hedging strategies to protect against currency risk. Huynh et al. (2023) elaborates on how global investors can create international portfolios by optimizing currency portfolios under the systematic risk of exchange rate shocks. Admittedly, the high costs involved in adopting such strategies might make it less likely for the firms to enter new markets, whether through direct investment or expansion of export activities, hence dampening trade flows overall.

Affecting trade flows in combination with economic environment, affects the potential impact of exchange rate fluctuations. The effect of fluctuations in exchange rates, for example, can trigger a chain reaction of effects on other economic variables such as inflation rates, interest rates, and unemployment (Nkemdilim and Azuka, 2022). A depreciation in a country's currency often results in higher import costs, causing inflationary pressures. Consequently, these inflationary impacts can decrease consumers' ability to purchase goods, lowering demand for inbound goods and making an impact on the volumes of trade. As the tree root arms spread over

several countries/regions, it emphasizes that stable exchange rates are crucial to keeping trade activities between countries/regions alive and healthy.

Moreover, the degree to which exchange rate volatility affects trade flows may depend on the specific characteristics of the trading partners engaged in the exchange. Baum and Çağlayan (2010) applied the bivariate GARCH model to assess the connection between exchange rate volatility and bilateral trade flows. Their results indicate that an increase of exchange rate uncertainty is typically detrimental for the extent of international trade. The effects, though, may be different according to time-varying aggregates of firms' currency exposure and their types of shocks. This suggests that companies in different sectors, or those with a different level of exposure to currency risk, might react differently to changes in the exchange rate.

At the same time, the international use of the US dollar contributes to currency exchange rate volatility and trade. For example, Bleaney and Tian (2011) explains that countries tend to choose currency anchors in line with their trading partners. Fluctuation of the bilateral exchange rates creates a shift in attractiveness and is a factor that influences trade between the two nations. A small peg network is a less stable one than a large peg network: currency of a country within the small peg network has a higher volatility against a currency that was randomly chosen than the money of any country from a member of a large peg network. Such fluctuations can arise due to firm-level trading decisions despite stable exchange rates, as firms position themselves to extract value from an understanding of currency stability of trading partners.

The impact of the exchange rate is significant on international trade flows, but its magnitude could also be influenced by a number of factors. These factors help to inform firms and policymakers about the moving parts of the global trade machine.

Therefore, this type of risk can be avoided using hedging instruments, these include both derivatives and currency speculation. These instruments, such as forward contracts, options, and swaps, allow firms to lock in exchange rates or hedge against adverse movements in currency values. Asteriou et al. (2016) asserts that the predicted effect of exchange rate fluctuation on foreign commerce depends on hedging instruments existing. In the then-available key and adequate hedging alternative variables, firms can hedge against the uncertainty caused by changes in the exchange rate, thus ensuring their competitiveness in the foreign market. Farmers will be unable to engage in hedging and will be forced to transact trades at existing exchange rates, resulting in a less efficient trading environment.

The lack of hedging instruments, on the other hand, may shorten the positive impact of exchange rate volatility on trade flows. Firms that cannot afford to hedge against currency risks may hesitate to enter new markets or may withdraw from existing markets in the face of adverse exchange rate movements. According to Liu (2020), the stock of RMB appreciation increases the exit probability of enterprises from export markets, especially for the less capable of those that are better suited to cope with exchange rate risk. These findings reveal the essential role of hedging instruments in allowing firms to weather the disruptions that fuel currency fluctuations and continue exporting.

A third key determinant of the degree of the effect of exchange rate volatility on international trade has to do with the level of economic integration. Exchanges of trade flows can move in response to exchange rate Volatilities as may be the substitutes or different industries of the goods that countries produce, but as nations become more economically integrated, the interdependences between their economies magnify the impact exchange rate can have. Musyoki et al. (2012) present that the exchange rate volatility may influence trade both directly

through uncertainty and adjustment costs as well as indirectly through the impact on investment and output structures. Furthermore, this resilience helps create a more stable trading environment, which enables firms to maintain their export activities despite the presence of currency fluctuations.

The opposite is the case for less integrated economies when it comes to the management of potential currency risks. The absence of established trading to trading networks makes it harder for firms to adjust to currency movements, leading them more uncertainty and a likely distortion of volumes. Asteriou et al. (2016), but have argued that the firm structure of production (such as the proportion of small firms) also affects the way in which exchange rate volatility impacts on flows of trade. There may not be any resources and comprehensive knowledge to hedge with in the strengths of smaller firms, which increases their vulnerability to the negative impacts of changes in exchange rates.

MECHANISMS OF IMPACT

Exchange rate fluctuations are one of the most important determinants of economic growth and it has been a predominant variable affecting trade balance, inflation, and foreign debt among other channels. This interaction leads to a web of links whose nature can either reinforce or stifle economic performance. Economic growth can be influenced by exchange rate changes both directly (by affecting imports and exports) and indirectly (via inflation and foreign debt).

Direct effects

Fluctuations in exchange rates have a huge impact on trade balance, inflation and foreign debt. These considerations are important for both policymakers and businesses, as they try to navigate the intricacies of a global marketplace.

Exchange Rate Fluctuations and Trade Balance

The fluctuations of nominal exchange rate have direct influence on trade balance because it will exactly affect the relative price of exports and imports. Devaluation of the local currency reduces the price of exports, and since they gain price advantages in foreign markets, it is possible to increase the volume of exports. On the other hand, it makes imports more expensive, which may cause the trade balance to deteriorate for a country dependent on importation of imported goods (Demir, 2014). Demir (2014) shows that the quantitative effects on trade balances are often moderate. This indicates that despite exchange rates affecting trade patterns they are not the sole factor and that global demand and domestic productive capacity are equally or more important.

Exchange rate affect trade balance through several channels. Depreciation of the domestic currency usually makes exports cheaper and imports more expensive, contributing to an improved trade balance when export volumes increase. But that relationship can get complicated by the price elasticity of demand for exports and imports. More specifically, If the foreign demand for exports is inelastic, a weaker currency may not translate into a relatively greater increase in export volumes, which would limit the usual positive effects on the trade balance (Manai, 2013). In contrast, an appreciation of the domestic currency can make exports more expensive for foreign consumers, resulting in a decrease of export volumes and a

deteriorated trade balance. These dynamic highlights the essential role of stable rates in fulfilling the trade balance requirements. One of the most direct channels through which exchange rate changes affect economic growth is through their impact on the trade balance — the difference between a nation's exports and imports. The high level of the Canadian dollar in both international markets and domestic markets means that it is in the interest of international and domestic stability for it to depreciate, making exports relatively less expensive (good) and imports relatively less expensive (bad).* Such phenomenon is often explained by the J-Curve effect, which suggests that while a depreciation (devaluation) might worsen the trade balance initially (in the short run) because of pre-existing contracts and lag between changes in prices, an eventual improvement will have occurred as the time passed by, Lal & Lowinger (2002).

Studies have confirmed that movements in exchange rates can have a substantial impact on trade balances among a wide range of economies. Some major studies value the relationship between trade and exchange rates differently, e.g. according to Kyereme (2002), fluctuations in exchange rates have a significant effect on the trade balance of the United States with Australia, and Kyereme indicates that the US exporters and importers are highly sensitive to exchange rate changes. In the same vein, Stucka's study of Croatia showed that a lasting depreciation of the exchange rate results in a positive impact on the merchandise trade balance, confirming that depreciation of the currency might improve the competitiveness of exports (Stucka, 2004).

Nonetheless, it is not a simple matter between exchange rates and trade balances. Brahmasrene and Jiranyakul (2002), found out that mixed results regarding the impact of real exchange rates on trade balances in Thailand, noting that some studies support the Marshall-Lerner condition while others do not. This variance indicates that trade balances are affected by many factors such as the structure of the economy and the nature of traded goods.

Impact on Inflation

Changes in the exchange rate also affect inflation rates in an economy. When a currency decreases in value, imported goods become more expensive, increasing consumer and business costs. This phenomenon, referred to as imported inflation, can pose challenges to policymakers seeking to ensure price stability. The link between exchange rate dynamics and inflation is especially strong in small open economies that depend on imports for vital goods and services.

Specifically, Froyen and Guender studied alternative monetary policy rules for small open economies, proving that exchange rate fluctuations can have large effects on inflation dynamics (Froyen & Guender, 2000). This implies that exchange rate changes need to be taken into account when designing monetary policy in order to preserve price stability. In addition, Guender and Xie show that, through the exchange rate channel in the Phillips Curve, a depreciation of the currency would reduce inflation expectations, thus affecting the growth rate (Guender & Xie, 2007).

Inflation and exchange rate movement are entwined. When a currency loses its value, the price of imports increases, which contributes to local inflationary pressure. An increase in the import prices could lead businesses to transfer the cost of assets to the consumers leading to rise in overall price level (Demir, 2014). This has implications for central bank reactions to exchange rate fluctuations and inflationary impacts. But, as Demir's analysis suggests, the ECB is not particularly responsive to exchange rate movements; rather, it is the broader effect of exchange rate movements on expected inflation and output that are considered by monetary authorities (Demir, 2014). This shows why it is not simply enough to look at exchange rates in isolation given the state of the economy.

Exchange rate movements can have large impacts on inflation. This often results in higher prices for imports, which can cause inflationary pressures in the domestic economy. Imported goods would cost more, and consumer prices is likely to rise, resulting in loss of purchasing power and the overall welfare of the economy. These inflationary pressures can pose challenges for monetary policy, as central banks are faced with the challenge of reconciling their inflation relative objectives with economic growth (Brahmasrene & Jiranyakul, 2002). On the other hand, a strengthening currency can help alleviate inflation by decreasing the price of foreign goods, which in turn helps stabilize pricing in the local economy. However, changes in import prices caused by fluctuations in the exchange rate affect the consumer price index (CPI). A depreciation in the currency usually drives the price of imports up, leading to inflationary pressures in the economy (Hoàng et al., 2020). The relationship between the exchange rate and inflation is not one-sided, however, as inflation is itself a response to a range of shocks, such as changes in international prices and shifts in monetary policy. The findings emphasize the need for exchange rate stability management given the impact on inflation and economic growth.

Foreign Debt and Economic Growth

For the exchange rate channels, the relationship of exchange rates and foreign debt is another major channel of exchange rate fluctuations on economic growth. The burden of this debt has grown in step with exchange rate volatility, and exchange rate risk has increased, particularly for countries that borrow in foreign currencies. Domestic currency depreciation increases the burden of foreign debt: it takes more local currency to service the same amount of foreign currency-denominated debt. That can put a strain on finances and hurt a country's credit rating, making it harder to obtain financing in the future.

According to Lane and Milesi-Ferretti, net foreign assets, like all economic variables, exhibit a long-run relationship with the real exchange rate; this can lead to meaningful wealth effects on the external wealth of a country as well as its debt sustainability (Lane & Milesi-Ferretti, 2001). These economic dynamics act as very real pressures on the true international cost of external debt, especially in developing nations with significant foreign currency debt levels that leave them vulnerable to exchange rate turbulence and can deepen borrowing transaction costs and uncertainty in the medium term ("Naira to Dollar Exchange Rate Fluctuations and Nigeria's Balance of Payment," 2022).

Exchange rate variations may have a major impact on foreign debt levels especially in the case of countries that borrow in foreign currencies. A weaker domestic currency raises the local-currency value of foreign-currency debt, increasing the cost of servicing that debt. This can cause borrowers to face intensified financial stress which may lead to greater risk of default (Demir, 2014). As a result, nations with a significant amount of foreign debt might be more susceptible to fluctuations in exchange rates, making it crucial to manage currency risks and debt levels diligently. This predicament could put a huge constraint on public finances with less availability of funds for growth-oriented activities. The stability of exchange rates in an inflation targeting regime as emphasised by Manai, can enable downward risks to be gradually sobered up in this context, inducing a more predictable setting in terms of managing foreign debt obligations (Manai, 2013). On the other hand, high exchange rate volatility deters foreign investment and raises the cost of borrowing, complicating the fiscal situation even further. Many countries, especially emerging market and developing nations, borrow in foreign currencies to fund their debts. Domestic currency depreciation, which makes foreign debt servicing more expensive, increases debt burdens and solvency problems. This situation can lead to a vicious cycle, since escalating levels of debt may cause additional depreciation of the

currency, resulting in aggravating inflation and having a detrimental effect on the trade balance (Rajakaruna, 2017). As a result, controlling exchange rate movements is critical to maintaining economic stability and keeping foreign debt at levels that can be sustained.

Impact on the financial performance of enterprises

These dynamics form the basis of any business enterprise in a globalized economy as exchange rates variance have a considerable effect on financial results.

Understanding the transmission of exchange rate shocks to firms has been a rich field of research, and Zhang (2018) offers a valuable contribution on Japanese firms with focus on firm financial constraints. Using a panel vector auto regression method to assess sectoral exports response to exchange rate changes, the study finds that firms that are less subject to internal and external financial restrictions are less sensitive to adverse changes in exchange rate, such as currency appreciation (Zhang, 2018). Specifically, the results indicate that financial soundness, as measured by the level of debt, is an instrumental factor when it comes to explaining the way in which firms deal with the risk resulting from exchange rate fluctuations, which in turn influences their financial performance indicators.

From the perspective of a performance measurement, EVA (The Economic Value Added, which is calculated as the net profit after tax minus the required return on the capital employed during the year) is strongly influenced by exchange rates. A weakening of the home currency might boost export earnings and hence EVA for those companies with large export business. If the currency appreciates instead, the drop in export competitiveness may hurt operating profits and, by extension, EVA.

Likewise, ROA, which shows how well a company makes use of its assets to earn income, can likewise be impacted by the exchange rate movements. This may increase sales and profitability, and therefore ROA. Conversely, if the exchange rate fluctuates in a way that raises the cost of imported materials or components, this can eat into profit margins and, therefore, reduce ROA.

The share price (SP) and earnings per share (EPS) are also sensitive to currency rate changes. Movement in the exchange rates can impact investor sentiments and market valuations and cause changes in the share prices. For instance, if investors view an actual company as negatively impacted by currency fluctuations, they will sell shares, resulting in SP dropping. Exchange-rate-driven top-line revenues and cost structures will also feed through to earnings per share (EPS), which gives a view of how profitable a company is on a per-share basis. A fall in the domestic currency would likely increase EPS for export-oriented firms, whilst an appreciation would reduce EPS.

Zhang (2018) a that financial constraints significantly matter in determining how firms react to exchange rate shocks, so that effective risk management practices is essential to lessen the negative impacts of currency fluctuations. These dynamics will become increasingly essential for businesses seeking to maintain financial performance and long-term growth as they navigate globalizing industries.

Exchange rate fluctuations can have a large negative effect on ROA (especially for companies having major foreign operations or whose assets are denominated in foreign currencies (Yeboah & Takács, 2019). Although exchange rate risk had no significant effect on ROA in the mining sector, it has a significant negative impact on the manufacturing sector. This implies that foreign market exposure is negatively associated with the vulnerability of volatility, and that ROA is a

common profit indicator for all foreign companies to gauge exposure in the currency market. As a result, it is essential for companies to implement risk management functions, such as hedging and currency swaps in order to minimize the negative impacts of exchange rate fluctuations on financial performance (Yeboah & Takács, 2019).

Beyond ROA, exchange rate movements can impact EVA as well, which assesses a company's financial performance through the lens of its operating profit less cost of capital (residual wealth). When domestic currency depreciates, the cost of imported goods and services tends to increase, which negatively affects operating profit, and therefore, EVA. The link between currency risk management and performance therefore emphasises both the significance of currency risk management and the end goal of maximising financial performance and shareholder value.

In addition, share price (SP) and earnings per share (EPS) demonstrate sensitivity towards exchange rate changes. Exchange rate volatility can cause earnings volatility, which can have an impact on investor sentiment and ultimately affect share prices. Rising EPS due to the depreciation of currency and increased cost can impact the price in SP since it would cause investors to rethink the company's profitability and growth. Hence, preserving stable exchange rates is vital for maintaining investor confidence and achieving favorable market valuations.

Yeboah and Takács's findings highlight the necessity for corporations, especially those with significant foreign exposure, to adopt robust risk management tactics to protect their financial wellbeing from the negative impacts of currency fluctuations. Therefore, it is critical for policymakers and business leaders to keep a close eye on exchange rates and their potential impact on economic health overall.

Exchange rate changes can influence export volume, which potentially influences profitability metrics, as shown in Liu's paper. An example of this is with an appreciation of the Renminbi (RMB), which increases export costs for Chinese enterprises, therefore competitiveness on international markets decreases. Such consequences will lead to lower sales volumes and consequently, lower earnings which will impact factors like EPS and ROA negatively (Liu, 2020). The study suggests that enterprises could react to exchange rate appreciation by leaving export markets, resulting in a decrease in their income streams and economy-wide value added (Liu, 2020). This demonstrates how changes in exchange rates can fundamentally impact financial performance through changes in markets and profitability.

In addition, the risk posed by exchange rate variability may cause enterprises to pursue more conservative financial policies. As Liu highlights, greater uncertainty causes export enterprises to defer or suspend export activities in line with underlying context which in turn makes forecasting and planning for financing all the more difficult (Liu, 2020). This mindset day-to-day opening up can close opportunities of growth and have adverse effect in share price because investors will see hike in risk and downtrend in future profitability. Hence, variations of exchange rates may result in complexities for enterprises to maintain stable organizational performance indicators as changes due to exceptions can drastically vary the revenue and expenditure.

Furthermore, the effect of exchange rate fluctuations on financial performance may differ according to enterprise traits. Foreign-owned enterprises are found to be more resistant to fluctuations in foreign exchange rate than state-owned and private firms, according to Liu's research (Liu, 2020). Other factors like enterprise size, productivity, and profit margins can also impact how exchange rate fluctuations affect financial performance metrics. In contrast, larger

firms that generate earnings from more than just exports may be less affected by fluctuations, resulting in a more stable EVA and ROA compared to their smaller counterparts which heavily depend on exports.

This stresses the relevance of risk management strategies in overcoming the implications of foreign exchange volatility in the light of the dynamics between exchange rates and financial performance. According to Liu (2020), it is essential for enterprises to know how exchange rate movements influence export decisions and overall profitability in order to manoeuvre successfully in international trade.

The importance of Financial Risk Management (FRM) practices has been emphasized by Boom which stated that FRM is essential to protect the continuity and prosperity of the business, even for small and medium-sized enterprises (SMEs) (Boom, 2019). Currency depreciation poses substantial risks for many metrics. An example of a metric that can be affected are foreign exchange rates that impact operating costs. The pernicious impact of rising costs comes from EVA, which is an economic metric based on the residual wealth, used to identify the true profitability of a company.

Furthermore, exchange rate variations can affect the ROA, which is an important measure of how effectively a company uses its assets to generate profits. Foreign exchange rate fluctuations are a common phenomenon for international firms which can generate uncertain revenue receipts. For instance, if a firm encounters a depreciation of its home currency, its export income may increase but, at the same time, if the price of imported inputs increases, ROA may suffer. In light of this, prudent risk management measures become imperative to minimize the negative impact of currency movements on asset optimization.

Not only is it EPS first, but it is share price second, the exchange rate is also affected. Currency volatility usually reacts to investors so share prices play some seesawing game. A company that has a good control of its exchange rate risks should show a more consistent share price, due to, or as consequence of a lower perceived risk by investors. Profound currency swings, on the other hand, can create more uncertainty and point to poor investor sentiment and share prices. Does EPS, which indicates company profitability on a per-share basis, also get impacted by exchange rate fluctuations? For example, if a company experiences increased costs stemming from a depreciated currency, its net income may drop, resulting in lower EPS numbers.

This aligns with the practical implications of Boom's analysis, highlighting that prudent financial risk management practices must be in place to counter the risks from currency volatility and to secure the long-lasting financial sustainability of enterprises (Boom, 2019). Therefore, designing appropriate risk mitigating strategies, allows the business to maximize gains due to exchange rate fluctuations, and minimize losses.

Indirect Effects

The exchange rate plays a role in the economy through its influence on the country's trade balance, inflation or foreign debt. For example, exchange rate fluctuations are a source of uncertainty for business operations, preventing investment and obstructing economic growth. In contrast, if businesses were unsure about the direction of exchange rate movements, workers were uncertain about how their wages would be affected by exchange rate fluctuations, and thus hesitant to invest in new plants or expand their operations, the market could suffer from a general lack of investment.

In addition, the interdependence of international assets implies that exchange rate movements will spill over to other economies. When one of the major currencies depreciates, it may predispose its trading partners to devalue competitively, which in turn evokes reaction from other trading partners towards them. Such interconnectedness underlines the need for stable exchange rates in order to provide for economic stability and growth across different countries.

Effects on foreign direct investment

The relationship between exchange rate regimes and bilateral foreign direct investment (FDI) flows is important, as emphasized in Abbott and Vita study (Abbott & Vita, 2011). The authors show that Currency unions including the Economic and Monetary Union (EMU) provide a conducive environment for cross-border investment by mitigating exchange rate risk. This approach stabilizes firms to invest in foreign markets because predictable values of currency reduce uncertainties on expected returns in the future. On the other hand, countries with a floating exchange rate may see their approach to FDI deterred by fluctuations, leading to increased concern over potential losses related to volatility (Abbott & Vita, 2011). This latter relationship accentuates the significance of stable exchange rate regimes for FDI, a major component of economic growth.

The debate of foreign direct investment (FDI) on economic growth is well-established. Foreign direct investment (FDI) can create economic growth by offering capital resources, transferring advanced technology, and providing access to international markets. Foreign direct investment (FDI), as a factor of economic growth, has two main features: When a foreign corporation invests in a host country, it brings technological innovation and management experience that can improve productivity and stimulate innovation in their local industry. This flow of capital and knowledge can create jobs, increase output, and contribute to general economic growth

(Abbott & Vita, 2011). In addition, FDI can also help build local supply chains and make domestic firms more competitive, thus helping to boost economic growth.

However, the relationship between exchange rate fluctuations, FDI and economic growth is not always direct. Stable exchange rates, for example, could facilitate FDI, while excessive volatility could create uncertainty that discourages investment decisions. In line with Abbott and Vita (2011), the impact of exchange rate volatility on FDI flows may be ambiguous, with different country-pair combinations varying in terms of consistency of signs across alternative regression specifications. This complexity only emphasizes that policymakers need to look at the wider economic environment when determining their foreign direct investment policy and growth strategy.

Fluctuations in exchange rate have important effects on foreign direct investment and its effects on economic growth. In the scope of foreign direct investment (FDI), foreign investors usually prefer stable exchange rate regimes as they minimize risks and uncertainty.

Then changes in exchange rates can directly affect foreign direct investment, as they change the risks and rewards of investment in a country. Alternatively, as noted in the research from Olanrewaju (2021), exchange rate volatility introduces uncertainty among foreign investors, impairing their readiness to invest in a host nation. While an initial depreciation of the domestic currency might raise FDI inflows, because it renders its targets cheaper for foreign investors, a depreciating currency might eventually affect negatively FDI inflows if it is volatile and decreases future returns. The dual effect, therefore, highlights the critical role of stable exchange rates in establishing an FDI-friendly environment.

Additionally, the link between economic growth and FDI is complex. According to Olanrewaju (2021), FDI inflows can influence economic growth through, for example, technology transfer, human capital development, and increased competition in the domestic market. Foreign Direct Investment increases domestic investment and brings in additional funds. Moreover, the way in which advanced foreign technologies interact with local human capital can also help to spur economic growth: local companies can adopt and adapt these advanced foreign technologies to their operations so as to enhance their process of production.

But it also stresses the importance of macroeconomic stability, as countries can only increase the benefits they derive from FDI. The investment climate is driven by factors such as inflation rates, interest rates, and the stability of the exchange rate (Olanrewaju, 2021). For example, rising inflation can shrink the real value of returns on investment, while volatile exchange rates can introduce uncertainty that discourages both foreign and domestic investors. Thus, macroeconomic stability ecosystem is vital to facilitate FDI inflows and economic prosperity.

It is important to point out that the relationship between the real exchange rate and FDI is complex, as emphasized by Dahir et al. (2017), the empirical findings indicate long-run cointegration relationships among the variables suggesting that the real exchange rate and domestic market size have positive impacts on FDI in the long run (Dahir et al., 2017). It implies that a stable and competitive currency can make a country an attractive destination for foreign private investors, which may further augment capital that could be utilized to sustain economic growth.

But it also stresses that an unstable exchange rate is bad for FDI. Such exchange rate movements can create uncertainty for investors who may not want to deploy capital in an uncertain currency environment. This uncertainty may result in lower FDI inflows, which in turn may adversely

affect economic growth. Additionally, the results suggest that foreign direct investment (FDI) may also have an impact on exchange rate fluctuations, as the flow of investment to a country has the potential to cause an appreciation of its currency, which in turn could negatively affect the competitiveness of domestic goods (Dahir et al., 2017). At the heart of this relationship is a supportive FDI landscape where maintaining exchange rate stability due to this FDI attraction can, in turn, create an environment encouraging FDI and by extension economic growth.

This is in addition to well-documented link between FDI and economic growth. Foreign Direct Investment (FDI) culture plays a key role in economic development. On the other hand, if the changes in foreign exchange rates increase the costs of foreign investors or decrease the competitiveness of domestic firms, then the positive effect of FDI on economic growth could be offset. Thus, exchange rate risk management is crucial for the realization of the optimal benefits of FDI and long- term economic development.

Studies like Dahir et al. (2017) stress the stable exchange rate is important to attract FDI and promote growth, while exchange rate volatility can have adverse effects on the investment or performance. These dynamics should be considered by policymakers when they design policies to improve the investment climate and foster long-run economic development.

Sebego et al. (2020) Using an ARIMA response function, the study provides insights into the relationship between exchange rate volatility and economic growth in Botswana. Using the GMM and the GARCH model, the study analyses annual time series data ranging from 1977 to 2018. The results indicate that although the Rand/Pula exchange rate is unstable, its volatility does not affect the economic development of Botswana (Sebego et al., 2020). If true, that implies that what matters more for economic performance than exchange rate fluctuations is trade openness and the growth of labour force.

This makes the relationship between FDI and fluctuations in exchange rates complex. Exchange rates that are stable tend to attract FDI because investors do not have an uncertain view of their future returns. On the other hand, high volatility can discourage the investment, as firms believe there are relative risks involved with the currency fluctuations. The results of this study suggest that exchange rate volatility does not have a significant influence on economic growth in Botswana, and this can be attributed to Botswana's trade-friendly nature and its expanding workforce, making it an attractive destination for FDI, irrespective of currency depreciation or appreciation (Sebego et al., 2020).

In addition, these findings are consistent with previous research in different contexts: in Malaysia and Kenya, exchange rate volatility had a negative, but insignificant impact on economic growth (Sebego et al., 2020) The implication is that although exchange rate stability is essential for an attractive investment climate, other macroeconomic factors may be more critical for the success of the FDI growth link.

The fluctuating exchange rate rates reported by Macheru (2023) are the moderating variables in the outward FDI and economic growth nexus in Kenya. When foreign exchange rate was included in the regression as an interaction variable, outward FDI was found not to be a significant direct determinant of economic growth in the country, although the foreign exchange itself was found to have an important inverse effect on economic growth. This indicates that currency variability may discourage investment by introducing uncertainty about the future returns, so reducing the potential for outward FDI to generate growth.

Additionally, the results highlight the importance of exchange rates in influencing foreign investment activity. Movements in exchange rates may change the perceived risks and returns of FDI and hence affect the behaviour of investors. For example, while a depreciating currency

may enhance asset attractiveness to foreign investors and hence attract foreign investments, it might reduce investment under highly volatile scenarios where foreign investors fear losses (Macheru, 2023). The significance of this relationship lies in a supportive environment for foreign direct investment (FDI), which is frequently considered a significant contributor to economic growth and stability, and this relationship potentially indicates that stable exchange rates may positively contribute to such an environment.

Foreign capital in the form of outward FDI can also play a beneficial role in the economic growth of a country. This is especially because with globalization, the flows of capital can play a crucial role in domestic economies. Nevertheless, the negative association between exchange rates and economic growth underscores the necessity for policy implementers to enforce measures that stabilize variation of currency in order to realize the advantages of FDI (Macheru, 2023).

Factors influencing exchange rate fluctuations

Febrianti (2023) emphasizes the major factors of exports, imports, exchange rates, and inflation as determinants of the foreign exchange reserves critical for evaluating the economic stability and currency value of a country.

Also, it shows that an increase in exports has a direct and positive relationship with foreign exchange reserves which has a coefficient of 0.625618 meaning that a 1% increase in exports lead to 0.625618% increase in reserves. The relationship highlights the significance of a strong export sector in bolstering a nation's currency as increased exports lead to greater foreign exchange earnings, thus stabilizing the exchange rate.

In contrast, the import variable has a negative effect, as the coefficient is -0.191346, indicating that a 1% increase in imports leads to a 0.191346% decrease in foreign exchange reserves. However, this finding is in line with the idea that too many capital imports become a danger for the currency. With a coefficient of 0.004454, the exchange rate alone has a relatively low but positive effect on foreign exchange reserves (indicating that the country will have an increase in its foreign exchange reserves if the exchange rate increases by 1%).

Inflation is an important determinant with a negative coefficient of -0.883752 which means that a 1% increase in inflation results to a drop in foreign exchange reserves. It highlights how inflation influences currency exchange rates, which tend to fall when purchasing power decreases. This study shows the relationship among these crucial economic indicators in determining exchange rate behaviour. Indonesia must prioritize improving exports over limiting imports and take steps to avoid exchange-rate volatility and inflation if it aims to stabilize the currency and maintain economic growth, policymakers say. Such analysis is very important in identifying factors dependent on rates of exchange and how it can contribute to economic policy making.

Article by Woldie & Siddig (2019) dives deeply into exchange rate fundamentals that drive exchange rate fluctuations based on exchange rate devaluation in Ethiopia. Using a dynamic Computable General Equilibrium (CGE) model, the study simulates the macroeconomic effects of devaluation, and finds that while such a policy might attract export earnings in the short run (by increasing export competitiveness) it also has the potential for contractionary and inflationary effects in the long term. This underscores the important role of exchange rates in economic behaviour, as a depreciation can change the trade balance, the inflation rate and ultimately household welfare and investment behaviour.

Moreover, the results highlight the distributional implications of various monetary policies because, as expected, devaluation leads to an increase in valuation of household consumption of urban households relative to rural households, leading to larger cash flow impacts due to higher urban costs of living relative to rural costs of living. This dimension underscores that the volatility of exchange rates is not only a macroeconomic variable, but also a social one which has an impact on the welfare of demographic groups.

In sum, the study demonstrates that underlying economic variables like international trade competitiveness, inflation, and other indicators of household consumption are key determinants of exchange rates and their effects in the economy as a whole. It is this interplay of factors that policymakers need to take into account in their work on exchange rate policies, since its interaction has a powerful effect in shaping both short-run economic performance as well as its longer-run prospects.

This matters because usually higher interest rates bring in foreign money and make the domestic currency more valuable. On the other hand, if interest rates are considered to be chaotic or mismanaged, this results in greater uncertainty for investors, which can cause the currency to depreciate.

In addition, the paper shows how the dynamics of interest rates can have important implications for the effectiveness of monetary policy, especially in the presence of liquidity traps, where traditional monetary policy instruments may lose power. It is crucial to keep interest rate policies stable and predictable, thereby encouraging investor confidence and exchange rate stability. Thus, the need of the hour for policymakers looking to effectively set monetary policies to regulate currency stability and achieve economic growth is also a clear understanding of the dynamic relationship between interest rates, inflation, and exchange rates.

For a thorough review of primary economic variables impacting the exchange rate dynamics, Liu and Lee (2020) investigates the relationship between interest rate and exchange rate in China and the United States. The difference in these two important measures doesn't move in a straight line; when domestic rates are higher than foreign rates, the currency is under upward pressure because of the increase in speculative capital inflows. This dynamic demonstrates how interest rate differentials can play a substantial role in exchange rate behaviour, with higher domestic rates drawing in foreign investment and causing the currency to appreciate.

In addition, this study emphasizes the significance of uncovered interest rate parity (UIP) theory, which suggests that the expected difference in exchange rates of two currencies is in direct proportion to the interest rate differentials. However, the results show that this theory does not apply consistently throughout the entire sample period, indicating that factors like market speculation and capital flows may destabilize the predicted equilibrium. This only underlines the complexity of interest rates, as they are a key economic variable, reflecting monetary policy but also determine the stability and volatility of the exchange rate.

The study also finds that the exchange rate not only is affected by but also affects the interest rate, and this impact is stronger from the China/U.S. exchange rate to the U.S. interest rate than the other way around. Such two-way effect underscores the interdependent relationship between world financial markets and suggests the need for policymakers to take such considerations into account when devising monetary policies to achieve their goals.

Loretta (2021) examines the several basic economic principles that shape exchange rate volatility in Nigeria. It addresses various types of elements that are important to take into consideration such as interest rates, inflation rates, foreign exchange reserves, and external debt that shape the outcome of the exchange rates. By contrast, falling interest rates can lead to

capital flight and a devaluation of the currency. This highlights the role of monetary policy in exchange rate stability.

Another key indicator is foreign exchange reserves, which serve as a buffer against currency volatility. The study shows that the relationship is unidirectional, meaning that exchange rate changes lead to changes in foreign reserves but not vice versa, and that proper management of reserves will help the currency get less affected with fluctuations.

Exchange rates are also influenced by the current account balance, which shows a country's trade balance in goods and services. Balance of payments surpluses usually cause currency appreciation, while deficits create currency depreciation. Another aspect the study reports on the interference of external debt and government expenditure. When the external debt level is high it creates fears about a country in terms of meeting its obligations, lowering the currency value.

Strategies for managing exchange rate risks

Internal audit and risk management

When it comes to managing multinational enterprises(MNEs) exchange risks, internal audit and risk management play an important role as part of the overall mix. Exchange rate risk is complex, while at the same time needing a structured approach between internal audit functions and risk management practices.

Moreover, according to Liu, internal auditors must make suggestions on possible improvement of risk management strategy that would enhance the overall framework of enterprise risk management (Liu, 2012). The role of internal audit can be critical in this regard, as it works

closely with risk management to address the complexities surrounding foreign exchange exposure faced by MNEs.

While identifying risk is vital aspect the internal audit function also supports the formulation of risk mitigation strategies. According to Su, these are the essential components of a best practice exchange rate risk management framework for MNEs, namely, identifying the type of risk, measuring exposures and developing a risk management plan (Su, 2018). This ensures that the internal audit is an incorporated part of the risk management process and provides organizations with a centralized executing body in treasury departments for the practical execution of Exchange Rate Hedging. Centralizing such activities not only makes the operations easier but also helps in efficient risk mitigation.

This implies that organizations must embrace innovative risk management strategies to adapt to the complexing economic environment (Zhang, 2023). This adds to the complexity of exchange risks and emphasizes the need for collaboration between internal audit and risk management, which will aid in building a framework that recognizes the multifaceted nature of such risks for the success of MNEs.

This is especially the case in the context of corporate governance, where the integration of internal audit and risk management becomes increasingly important. According to the research done by Tušek and Barišić (2016), internal audit supports the governance mechanisms by assisting management in ensuring their control and risk management responsibilities are fulfilled. Harmonized governance framework plays a crucial role by introducing the accountability and transparency process of managing exchange risks by MNEs. These would help the organization improve its governance structures and enhance its holistic organizational performance.

As enterprise risk management matures, it has to be supported by the internal audit functions in place to ensure the risks are managed (Liu, 2012). In the case of global operations, this synergy becomes the key solution for companies plagued by currency challenge, resulting in misalignments.

Moreover, the use of technology in risk management is growing more pronounced. The best tools for identifying and assessing exchange rate risks are data analytics and risk management tools. Zhang (2023) emphasizes the need to embrace new tools and approaches to enhance risk management practices in the context of rapid environmental changes. Harnessing these advances in technology can assist internal auditors in offering enhanced evaluations of risk exposure and the effectiveness of hedging strategies.

Financial instruments

The variation in the currencies creates great losses to the firms, and hence the firms have to identify strategies to minimize the losses. The most commonly used techniques to hedge exchange rate risk are the financial instruments mainly derivatives.

Theoretical framework

Revenue Channel

The revenue channel captures the effects of exchange rate depreciation on a firm's sales and revenue-generating capabilities. A devaluation of a nation’s currency makes that nation’s exports less expensive for foreign buyers, which can lead to higher even demand for the goods produced there. In developed economies like the US, Japan, and the UK the revenue channel shows a statistically significant effect on investment to exchange rate fluctuations (Ng and

Souare, 2014). Increased demand for the exported commodities by a depreciation in the local currency can also lead firms to invest in capital gain via increased export volumes.

Additionally, a weakened exchange rate can increase the competitiveness of domestic firms in global markets. According to Dai (2015), a decrease in the real exchange rate would lower the tradable sector profit, and hence increase the demand for capital. Firms with elevated revenues from exports may be more likely to put money into new projects, despite the higher costs of its equipment and technology. Thus such firms may experience long-term growth and increase their share of their market in export-oriented industries.

Yet, the revenue-boosting impacts of a depreciation in the exchange rate may not be equally distributed amongst sectors. Firms that use a lot of imported inputs (such as manufactured goods) will find it costly to maintain profitability, even as their revenues from exports rise. This can create a tension between the revenue boost provided by exports on the one hand and cost pressures around imported materials on the other hand.

Cost Channel

The cost channel relates to the effect of depreciation of the exchange rate on the cost structure of the firm and its financial health. When a currency falls in value, the price of hitting up shops both here and in the foreign world goes up, which can monetize close margins for corporations overly dependent on foreign inputs. Banerjee et al. (2022) provide evidence of a financial channel through which currency depreciation depresses corporate investment. The authors find that depreciation decreases investment due to its interaction with firm leverage, especially when firms borrow in foreign currency or from foreign lenders. This can have implications for firms' ability to invest, because as the cost of servicing foreign-denominated debt (debt denominated

in foreign currencies such as US dollars or euros) becomes more onerous on the back of depreciation, firms that can no longer manage servicing their debt may be forced to cut back on investment.

Moderating Factors

Various factors, such as the price-cost margin and financial flexibility of firms, can moderate the degree to which exchange rate depreciation passes through to investment through these channels. According to Panda and Nanda (2019), those sectors would be able to absorb the negative effects of exchange rate depreciation with more capacity if these have higher price-cost margins and more financial flexibility. Companies that can create more agile pricing structures or seeking more flexible financing instruments may actually reduce the damaging effects of rising costs from currency depreciation and enable them to keep or even raise their levels of investment.

Moreover, the general economic climate and the extent of economic integration may also affect the relationship between exchange rate depreciation and investment. In indeed economies with greater integrational networks, firms may have stronger ties and relationships that allow them to better withstand adverse currency shocks. In the case of less integrated markets, firms can find it more difficult to manage exchange rate risks and consequently their investment decisions may be more sensitive (buffered).

Economic Exposure Models

Economic exposure is the degree to which a company's cash flows and overall market value can change due to exchange rate variations, and it can differ widely depending on the currencies a company has transactions with. A number of methodologies and accompanying studies exist

which deepens our understanding about how firms are economically exposed when operating in various currencies.

These authors inform this debate by examining the economic exposure of Spanish companies to Latin American currencies in the period 2010-2016 (Búa and Lado-Sestayo, 2018). They present a regression analysis to estimate the magnitude of the effects of exchange rate changes on firm value, allowing researchers to discern whether firms gain from a particular currency devaluation net exporters or lose as net importers. See this study is about the importance of accounting for regional currency dynamics when evaluating economic exposure as firms doing business in disparate markets may be affected differently based on their currency positions and trade relationships.

The research by Wahab et al. (2021) offers a chief quantitative treatment of this risk via a regression framework, with currency exposure operationalized as the slope between changes in exchange rates and underlying frim value. Firm value is more sensitive to movements in the exchange rate, explicitly in developing regions, where firms experience greater economic openness and limited means to hedge. It highlights the need for firms in these parts of the world to ensure that they have got strong measures in place to deal with currency risk, given that their economic exposure can greatly impact their performance and ability to compete.

Hansen and Hyde (2010) focus on the determinants of corporate exchange rate exposure by studying firms in Chile. They find that most estimated exposures are negative, suggesting that firms tend to experience losses during depreciations in the local currency. This contrasts with other studies which find positive exposure, thereby illustrating how economic exposure may differ across contexts and geographies. By delving into these firm-specific determinants of exposure, they provide more of the nuance necessary to understand how fluctuations in

exchange rates can impact firms differently depending on their operating characteristics and the environments in which they operate.

Suhaimi (2023) investigates the causal nexus between currency exposure and stock returns of non-financial MNCs in Malaysia during two financial crises. The analysis shows that more firms, on average, are affected by currency exposure than significant firms in Granger causality estimations. for firms facing exposure and the optimum market investment decision can be altered by economic activity, such variation would seem to have substantial implications for hedging between exposure currency, during global economic stress, for many other reasons.

Empirical analysis

This is particularly relevant in the context of the Italian economy, where the impact of exchange rate movements on investment decisions at the firm level has been the subject of growing interest among policymakers and researchers alike. As the firms competing in a global economy become more prevalent, exchange rate movements can have large implications for the financial performance and strategic decisions of these firms.

Investment Decisions and Economic Integration

Factors such as the general economic conditions and the level of economic integration in a country also significantly affect the way exchange rate fluctuations impact investment decisions. Firms like Italian manufacturing, that sell in a tightly integrated European market, might navigate currency challenges better. A common currency unites the economies in the Eurozone, so the firms can have more stable trading relationships and better manage the exchange rate risks.

On the other hand, firms which operate in markets with low integration may subject to more ambiguities regarding exchange rates than those which subject to integrated premises and subject to expansive effects. Although Nanda and Panda (2018) examined Indian manufacturing companies, their findings showed that exchange rate fluctuations in the short term may not very well impact the profitability of firms, while in the long run, exchange rate fluctuations can create an opportunity for firms to improve their profitability, which sets the direction for some selective investments. This view emphasizes the significance of accounting for immediate and extended consequences of alterations in the exchange rate on investment choices.

Economic Exposure

Globalization and expansion of international trade have made the assessment of the exposure of U.S. manufacturing firms to movements in foreign exchange rates an important topic of study. Exchange rate movements have a significant influence on the financial performance and strategic choices of these companies.

The most significant determinant of a firm’s exchange rate exposure is its level of foreign activity. As per Bhagawan and Lukose (2014), firms with higher absolute value of net exposure are more foreign oriented firms and experience higher exchange rate exposure. This relationship is especially salient for U.S. manufacturers that export a lot or use a lot of imported inputs. Since these firms are working in international markets fluctuations in exchange rates directly affect income and costs thus these firms have increased exposure to currency risk.

Furthermore, a firm's exchange rate exposure depends on its industry's structure as well. Firms within the automotive sector, for example, are noted by Bartram et al (2010) to have superior

foreign exchange rate exposures when they have considerable foreign sales and high levels of competition from foreign firms.

This can have profound implications for U.S. manufacturing companies in terms of exchange rate exposure. After presenting the theoretical foundations of Bakhsh (2018) approach, the author finds that foreign exchange rate volatility exposes firms to forced liquidation of their assets, especially if the firms are already facing liquidity constraints. The impact of exchange rate movements on a firm's operating income, asset values, and liabilities can lead to a change in the firm's overall valuation. For businesses without proper risk management techniques, these fluctuations may cause more vulnerability in cash flows and profitability, creating a considerable challenge for stable operations.

According to Kang and Lee (2011), only a minority of firms show considerable exchange rate exposure and this may not point to a methodological problem but rather to the operational and financial hedging firms undertake. U.S. manufacturing firms could hedge the currency risk, and the use of such hedge may reduce their overall empirical currency exposure.

U.S. manufacturing firms commonly utilize a combination of operational and financial hedging solutions to manage foreign exchange exposure effectively. According to Dash and Yadav (2014), foreign exchange exposure is also important for firms to analyze and take appropriate hedging actions. These include step-up in production location, dissipation of supply sources or segmenting pricing structure against changing currency values. Diversifying their business in multiple markets allows firms reduce their dependence on a single currency and dampen the effect of negative currency rate changes.

However, financial hedging is the practice of using financial instruments like forward contracts, options, and swaps to hedge currency risk. These instruments enable companies to hedge against exchange rates or set up price floors, adding a layer of predictability to their cash flows. Which hedging strategy to use would depend on a number of factors, including the firm's risk appetite, market conditions, and the specific currencies in which they operate.

Enterprise Value

Gao (2023) examines the impact of RMB exchange rate fluctuations on the investment efficiency of listed companies in China's A-share market in 2010–2022. The paper uses the RMB real effective exchange rate index released by the Bank for International Settlements, and finds that exchange rate changes have a relatively significant impact on investment efficiency. Such firms are leveraged, and consequently they are subject to financing constraints and equity speculation, both of which aggravate the harmful effect of exchange rate volatility on their investment decisions (Gao, 2023). It shows that firms with lower access to capital may have difficulty maintaining their level of investment during periods of depreciation, which in turn reduces their long-term growth.

Yang (2018) study the relationship between RMB exchange rate depreciation and the innovation ability of export enterprises. Yang identifies innovation as a consequence of currency depreciation by conducting an ordinary least squares (OLS) regression on a sample consisting of 2011 to 2016 and reporting its findings using Chinese A-share listed companies. Yang shows that for export enterprises itself RMB devaluation effectively inhibits their innovation extent. One implication of this is that firms may choose to invest in capital in times of turmoil in order to appease investors by maintaining positive cash flows, dampening long

run innovations. This dynamic highlights how exchange rate fluctuations can negatively impact the competitive standing of Chinese firms in global markets.

Currency Depreciation and Foreign Exchange Reserves

Foreign exchange reserves are crucial to a country's economic health, acting as a cushion against foreign shocks and enabling international trade. Through a number of mechanisms that can be set in motion when the currency of a country weakens, it can: One of the main mechanisms is through a lowed trade balance due to improved export competiveness.

Rao notes that the depreciation of the currency can boost a country’s exports, as it reduces the prices of its goods and services for foreign purchasers. This increased exports will further result in foreign currency inflows and thus aid in increasing the foreign exchange reserve Rao (2023). There is empirical evidence that, after depreciation, a country passes through a period of improvement in its trade balances leading to the building up of its foreign exchange reserves. For instance, Palić et al. (2018) emphasize that the Marshall-Lerner condition suggests that depreciation in exchange rates may stimulate economic growth as the overall increase in net exports may increase foreign exchange reserves.

In addition, the foreign exchange reserves do not only depend on how the depreciated exchange rate leads to improvements in trade balance. Moreover, according to khan and ahmed (2022), states could stockpile foreign exchange reserves as an additional protection from prospective economic disruptions in order to bolster their economies in times of instability. This view highlights the need for appropriate foreign exchange reserves in order to face the risk of currency depreciation.

Currency depreciation does not necessarily lead to increased economic growth. Although depreciation may result in greater forex reserves for the economy, it helped spur economic activity via improved export competitiveness. Currency devaluation is thought to also promote these effects, and a lot of real-life evidence shows that this is particularly true in developing economies. For example, Ting and Ho (2017) focused on an individual country case study and found that countries which depreciated the exchange rate more aggressively were able to recover faster from the Great Depression. As this historical view indicates, currency devaluation can prove to be an accelerative measure for the economy per se because it enhances the transplanted current account and spurs domestic production.

Furthermore, Akinboyo et al. (2016) showed that the accumulation of external reserves has played a crucial role in the performance of nations as they can be used for investments infrastructure and development projects. In certain scenarios, a depreciation of the currency, accompanied by an increase in foreign exchange reserves, can provide governments with the means to invest in essential sectors of the economy, which can, in turn, stimulate economic growth.

Though currency depreciation can produce more foreign exchange reserves and economic growth, we need to keep in mind the financial constraints that firms face. As noted by Casas et al. (2023), depreciation may worsen the financial frictions facing the firms and make investment and capital expansion difficult. Nonetheless, if the advantages of increased exports compensate for the difficulties of financial constraints, the overall impact of depreciation can still be positive in the economy.

Beck et al. (2021) highlight how depreciation of exchange rates can also affect local business cycle due to bank loan supply diversion and investment decisions (Beck et al., 2021). In such

cases, depreciation also increases firms' debts in both foreign and domestic currencies, even as it increases revenues from export, which can trigger higher performance in both terms, allowing for better servicing of their debts and subsequent investment for growth. This shows how currency depreciation can stimulate growth, even under financial constraints.

Impact of exchange rate fluctuations on enterprises

The fluctuations in the foreign exchange rate is one of the essential factors that affect enterprises in terms of export decision making and strategies for entering into a new market or modifying the market composition. The fluctuations in exchange rates can present opportunities and risks for firms participating in foreign trade.

When a country’s currency drops, its exports become less expensive for foreign customers, helping to increase demand. On the other hand, if currency appreciates, exports become costlier, resulting in a fall in demand. This relationship is important for enterprises in making export decisions. By way of example, Liu's study on how changes in the Renminbi (RMB) exchange rate impact Chinese enterprises found that RMB appreciation was strongly correlated with increased probability of firms exiting existing export markets but a decreased probability of entering new export markets Liu (2020). This finding highlights the ability of currency movements to impact export decisions, as firms decide whether they are still competitively placed, given movements in real exchange rates.

Furthermore, the impact of exchange rate shocks on export decisions can differ significantly across types of firms. According to Liu's study, foreign-funded and financing companies were more resilient to exchange rate fluctuations than state-owned enterprises and private enterprises

were. It remains a brief training on the pivotal dual between financial resilience and exchange rate-induced barriers that can either facilitate a firm to enter or exit its export markets.

Exchange rate fluctuations can also have a profound impact on the market entry and exit decisions of enterprises. Exchange rate volatility may also increase uncertainty for firms regarding their future costs and revenues, and serve as a deterrent to entry into new markets. Akani and Dada (2017)'s research on Sub-Saharan African countries suggested that firms were influenced to enter or exit markets in response to exchange rate volatility negatively affecting trade balances. High volatility can make the environment unpredictable, causing firms to defer or abandon entry into the market altogether.

However, some companies may see exchange rate changes as opportunities to enter the market. One situation may involve a depreciation of the domestic currency that makes exports more competitive, encouraging firms to enter foreign markets to take advantage of the increased demand. This insight is in harmony with the study done by Tunç et al. (2020), and observe that, although bilateral exchange rate volatility depresses trade in two countries, external exchange rate volatility positively contributes to trade dynamics. This two-sidedness highlights the possibility that firms may respond differently to exchange rate fluctuations depending on their market positioning and strategic objectives.

The nonlinear nature of exchange rate pass-through (ERPT) into import prices makes the relationship of exchange rate fluctuations and market entry/exit decisions even more complex. According to Herger (2014), exchange rates in the external profitability calculation may spur market entries and exits, providing intense competitive pressure on a service apart from imported services; therefore, the firm would like to align their price with the corresponding price of currency. Such nonlinear behaviour implies that firms will have to be flexible in

adjusting their prices, which is helpful in order to retain competitiveness when the exchange rate varies over time.

Additionally, the meta-regression performed by Ćorić and Pugh underscores the complexities of conclusions regarding exchange rate variability and international trade, including their strong conditionality (Ćorić & Pugh, 2010). This indicates the relationship between exchange rate movements and export decisions could vary depending on a number of factors such as the market structure, firm size, and the nature of the goods being traded. Thus, they must consider their economic environment and nature of competition before taking decisions on export activities.

It is well understood that exchange rate variations can pose short-term obstacles to export decision-making. For example, based on his analysis of exchange rate volatility in Indonesia during the COVID-19 pandemic, Sari found that exchange rate volatility had a negative short-run effect on exports, but a positive long-run effect due to firms adapting to a changing market (Sari, 2023). In this case, the adjustment may include searching for alternative export markets or investing in hedging instruments to minimize the risks that currency changes entail.

In addition, Rasaki finds that the effects of exchange rate volatility in trade flows can be asymmetric, implying that firms respond dissimilarly to appreciation and depreciation (Rasaki, 2023). This misalignment can impact long-term plans for entering and exiting markets, as firms must take into account the variability in exchange rates and their overarching business goals.

Mitigating the impact of exchange rate fluctuations

Exchange rate effects are counterbalanced by the heterogeneity of enterprises, especially their productive and profitability gap. More productive firms have the ability to absorb costs

associated with currency volatility better, and firms with large profit margins have more room in their pricing and investment decisions. In fact, there is of substantive evidence that firm characteristics are key for making sense of how firms respond to exchange rate shocks. With globalisation on the rise, policymakers and business leaders must appreciate that the fluctuation of exchange rates has a very different impact on businesses within the global system.

Productivity

Productivity is a key factor in firms' responses to exchange rate movements. If firms work at more productive levels, it will be easier for them to buffer costs from currency volatility. For example, Liu (2020) examined how the appreciation of the Chinese RMB affected domestic enterprises and concluded that a higher productivity factor would help firms cope with the currency appreciation effect. Several factors may contribute to this resilience:

1. Cost Efficiency: As it turns out, the more productive a firm is, the lower its per-unit costs are, meaning that even when currency fluctuations cause input costs to rise, these firms can still afford to keep their prices competitive. This cost lever allows them to maintain market share and profitability in times of volatility of exchange rates.
2. Invest in Technology: More productive firms tend to invest in technology and innovation and thus they can improve their operational efficiency and their sensitivity to the exchange rate changes. Since most of these firms deal with imported inputs or materials, they can assuage the hangover of higher prices by hopefully streamlining their production processes.
3. Such productivity can also allow firms to respond more rapidly to shifting market dynamics. Firms, for example, which can quickly increase or decrease their production levels or adjust their product lines to respond to changes in currency values are better

positioned to take advantage of opportunities or reduce risks associated with adverse changes in exchange rates.

Profit margin

Exchange rates have other key impacts: one is the Profit Margins that might affect the way by which firms react to these changes in exchange rate. Companies with strong profit margins may have more room to absorb the costs of currency volatility and be able to keep their competitive positions in the market. Through a few mechanisms, we can understand how profit margins change in response to movements in exchange rates:

1. Buffer Against Costs: Companies with higher profit margins can more easily absorb higher costs caused by currency depreciation. For example, if the company is facing higher input costs in terms of imported materials due to a weaker domestic currency, a good profit margin allows it to keep profitability and tweak its pricing strategy.
2. Pricing Tactics: Firms that have a big enough unit sale to profit margin could have more space to counter the exchange price adjustments. They can absorb some level of higher costs without materially impacting demand, so they can maintain market share.
3. Investment in Hedging Strategies: Higher profitability may allow companies to invest in financial instruments that hedge the exchange rate risks. To protect against potential losses due to exchange rate volatility, these companies can hedge exposures using derivatives such as forward contracts or options. Such preemptive measures can strengthen their resistance to fluctuations in exchange rates (Kharvi et al., 2019).

Heterogeneity: Empirical Evidence

Studies in the world have proved that the heterogeneity of enterprises plays a critical role in their exchange rate response. For example, Zheng and Ma (2023) find that exchange rate fluctuations determine firms' sourcing decisions, as firms whose profit margins are more sensitive to exchange rate changes prefer global sourcing when they expect a currency depreciation. This indicates that companies' adaptability depends on their financial status and operational practices.

Different sectors and types of enterprises (e.g., state-owned vs. private) have different sensitivities to exchange rate fluctuations.

1. Manufacturing versus the service sector

   Sensitivity to exchange rate fluctuations varies widely between sectors. Manufacturing companies are typically more dependent on imported raw materials and components, making them more sensitive to changes in currency than firms in the service sector. For instance, Mohapatra (2016) finds that Indian firms in the manufacturing sector are more sensitive than service sector firms to currency fluctuations, possibly due to their greater dependence on imported inputs. When the local currency declines, manufacture houses drive with heightened expenses on import part, which could compress profit edges and damage competitiveness.

   In contrast, service sector enterprises might have more latitude in modifying their pricing strategies based on fluctuations in exchange rates. Because many types of service firms do not rely on imported goods to the extent that manufacturers do, they may be better positioned to absorb the costs of currency fluctuations. This

differentiation underscores the relevance of sectoral characteristics in appreciating the effects of currency variation on businesses.

2. Public Vs Private Companies

Other key determinants of exchange rate exposure are the ownership structure of firms. There may be different behaviors from SOEs versus private firms because of their access to resources, government support, and operational mandates. For instance, Li et al. In particular, larger firms (including SOEs) tend to have greater currency risk exposures due to their diverse foreign trade activities and their foreign currency-denominated assets (Li et al., 2019). Such increased exposure could translate into greater sensitivity to exchange rate movements, especially for SOEs that potentially lack the same profit maximizing stimuli as private firms.

On the other hand, private firms tend to be more profit-oriented, which can prompt them to take a more proactive approach to offsetting changes in exchange rates. As an illustration, the study conducted by Savchenko and Makar regarding the currency risk management strategies suggest private firms would use hedging techniques to reduce adverse effects resulting from exchange rate volatility (Savchenko & Makar, 2010). This informed strategy can strengthen their ability to weather currency fluctuations, enabling them to stay competitive in global markets.

CHAPTER THREE

Research Methodology

This study employed a quantitative research strategy and the main research technique in its implementation. The research intended to employ a quantitative technique known as a closed-ended survey to achieve its aims. The sample population consisted of exchange rate information between USA and selected 11 countries (Brazil, Canada, China, Germany, France, United Kingdom, Italy, Japan, Korean Republic, Saudi Arabia and Mexico) and the USA international trade, foreign direct investment with the mentioned countries. Quantitative research was favored over qualitative research due to its greater precision and accuracy in producing results and its reduced depth, which meant it could be completed in less time than qualitative research methods like in-depth interviews and focus groups. Both quantitative and qualitative research approaches have advantages and disadvantages, with one kind of approach being more appropriate than the other for a given set of research questions and aims. Your choice between qualitative and quantitative research methods should be based on the nature and scope of your study, as well as the information you hope to get from it.

In certain cases, quantitative research methods are preferable than qualitative research methods because they yield numerical data that lends itself well to statistical analysis and comparison. Because it employs standardized and systematic techniques to gather and evaluate data, it allows for more objective analysis and interpretation, and it can generalize findings to broader populations. The identification of both dependent and independent variables is crucial for doing research on the present issue. Exchange rate fluctuations across national contexts serve as the independent variable while the USA international business with other countries is the dependent variable.

Research Design

The purpose of this research design was to outline a quantitative approach to investigate the impact of exchange rate fluctuations on the foreign economic activity of USA with other countries. The study employed secondary data sources to analyse the relationship between exchange rate changes and USA trade with selected countries. The significance of understanding this relationship lies in the increasing globalization of markets and the critical role that exchange rates play in determining the competitiveness and profitability of enterprises engaged in international trade.

This study utilized a quantitative research design, focusing on the collection and analysis of numerical data to identify patterns and relationships. A correlational research design was employed to determine the extent to which exchange rate fluctuations relate to countries' performance metrics.

Data Collection

Secondary data will be sourced from various databases, including:

- National statistical agencies for exchange rate data.
- Trade databases to analyse import and export activities.

The time frame for the data collection spanned from 1999 to 2023, allowing for a comprehensive analysis of trends and fluctuations over time. This period is particularly relevant as it encompasses significant economic events that have influenced exchange rates globally.

Sample Selection

The sample consisted of countries engaged in international trade across various industries.

The countries selected are USA, Brazil, Canada, China, Germany, France, United Kingdom, Italy, Japan, Korea Republic, Saudi Arabia and Mexico.

Variables

The study focused on the following key variables:

- Independent Variable: Exchange rate fluctuations.
- Dependent Variables:
    - USA current account balance (measured in monetary terms).
    - Foreign trade investment (measured in monetary terms).
    - US international trade with selected countries (measured in monetary terms).

Data Analysis

Data analysis was conducted using statistical software such as SPSS and Excel. The following analytical techniques was employed:

Descriptive Statistics

Initial analysis involved descriptive statistics to summarize the data and identify trends in exchange rate movements and countries' performance metrics. Descriptive statistics encompass a range of techniques that summarize and present data in a meaningful way. These techniques include measures of central tendency (mean, median, mode), measures of variability (standard deviation, variance, range), and frequency distributions. By employing these measures, researchers can gain insights into the overall characteristics of the data set,

which is crucial for understanding the underlying trends and patterns that may influence enterprise performance in international markets. For instance, Tamba and Cendana (2021) highlight the importance of calculating mean and standard deviation values to provide a clear summary of the data, which can facilitate further analysis.

In the context of exchange rate fluctuations, descriptive statistics will allow for the examination of historical trends in exchange rates over the study period. By calculating the mean exchange rate, the researcher identified the average value over time, while the standard deviation provided insights into the volatility of the exchange rate. This information is essential for understanding how stable or unstable the exchange rate has been, which can directly impact enterprise decision-making regarding investments and exports. Rahayu and Muharam (2021) emphasize that descriptive statistics are crucial for analysing data by providing a clear description of the collected data, which can be particularly useful in economic studies.

Similarly, descriptive statistics were applied to enterprise performance metrics, such as export volumes, revenue generated from international markets, and investment levels. By summarizing these metrics, the researcher identified trends in how countries respond to exchange rate fluctuations. For example, if the average export volume increases during periods of currency depreciation, this may suggest that enterprises are capitalizing on favourable exchange rates to enhance their competitiveness in international markets. Mishra et al. Mishra et al. (2019) note that descriptive statistics are vital for summarizing data, which is essential for ensuring that subsequent inferential analyses are valid.

Regression Analysis

Multiple regression models were utilized to assess the impact of exchange rate fluctuations on investment efficiency and export decisions. This enabled the researcher to examine the direct effects of exchange rates while controlling for other variables such as USA current account balance and foreign direct investment with the selected countries. Regression analysis, particularly multiple regression models, is a powerful statistical technique employed to assess the impact of various independent variables on a dependent variable. In the context of this study, multiple regressions were utilized to evaluate how fluctuations in exchange rates influence international trade between USA and selected countries. This approach allowed the simultaneous examination of multiple factors that affected countries' international trade performance, providing a comprehensive understanding of the dynamics at play.

Multiple regression analysis extends simple linear regression by incorporating two or more independent variables to predict the outcome of a dependent variable. This technique is particularly useful in economic research, where multiple factors often interact to influence outcomes. For instance, in the study of exchange rate impacts, variables such as exchange rate volatility, enterprise size, and market conditions can all play significant roles in determining investment efficiency and export performance. As noted by Gao Gao (2023), the use of multiple regression models enables researchers to isolate the effects of exchange rate fluctuations while controlling other relevant factors.

Correlation Analysis

Correlation analysis is a statistical technique used to assess the strength and direction of the relationship between two or more variables. In the context of this study, correlation analysis was employed to examine the relationship between exchange rate fluctuations and USA trade with the selected countries. By quantifying the degree to which these variables are related,

theresearcher gained insights into how changes in exchange rates may influence countries behaviour in international markets.

Understanding Correlation Coefficients

The correlation coefficient, typically denoted as (r), ranges from -1 to +1, where:

(r = +1) indicates a perfect positive correlation, meaning that as one variable increases, the other variable also increases.

(r = -1) indicates a perfect negative correlation, meaning that as one variable increases, the other variable decreases.

(r = 0) indicates no correlation, suggesting that changes in one variable do not predict changes in the other.

The strength of the correlation can be classified as weak, moderate, or strong based on the absolute value of (r). For instance, values between 0.1 and 0.3 indicate a weak correlation, values between 0.3 and 0.5 indicate a moderate correlation, and values above 0.5 indicate a strong correlation. This framework is essential for interpreting the results of the correlation analysis in the context of exchange rate fluctuations and enterprise performance.

Application of Correlation Analysis in the Study

In this study, correlation analysis was utilized to explore the relationships between exchange rate fluctuations and key performance indicators of enterprises. For example, the researcher calculated the correlation between the real effective exchange rate and the USA trade with selected countries engaged in international trade. By doing so, they can determine whether

there is a significant relationship between currency movements and the financial performance of these countries.

Kandil (2014) emphasizes the importance of understanding the relationship between exchange rate fluctuations and economic activity. By applying correlation analysis, this study aimed to provide empirical evidence regarding how exchange rate changes impact countries performance metrics. For instance, if a strong negative correlation is found between exchange rate appreciation and export volumes, it may suggest that a stronger local currency negatively affects the competitiveness of countries in international markets.

Expected Outcomes

The study aimed to provide empirical evidence regarding the impact of exchange rate fluctuations on the foreign economic activity of countries. It is anticipated that the findings revealed significant relationships between exchange rate changes and both export decisions and financial performance. Furthermore, the research was expected to identify key moderating factors that influence these relationships, thereby contributing to the existing literature on international trade and exchange rate economics.

Limitations

While the proposed research design is robust, it is essential to acknowledge potential limitations. The reliance on secondary data may introduce biases if the data sources are not comprehensive or if there are discrepancies in reporting standards. Additionally, the study did not account for all external factors influencing countries performance, such as changes in global demand or domestic economic policies. Future research could address these limitations

by incorporating qualitative methods or primary data collection to complement the quantitative findings.

Ethical Considerations

Confidentiality is a major ethical consideration in this type of research. When conducting research on the foreign economic activity of the countries as a result of exchange rate fluctuations, it is important to maintain the confidentiality and other factors being studied. This can include protecting sensitive information such as countries' strategies, technological innovations, and other confidential data.

CHAPTER 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

The presentation, analysis, and interpretation of data gathered from various sources concerning the exchange rates of USA and 11 selected countries (Brazil, Canada, China, Germany, France, United Kingdom, Italy, Japan, Korea Republic, Saudi Arabia and Mexico) for 25 years from 1999 to 2023, USA current account balance (1999-2023), Foreign direct investment inflows for the USA, USA trade with 11 selected countries are the subjects of this chapter. Tables were used to display and analyze the data.

A. DESCRIPTIVE AND TREND ANALYSIS INDEPENDENT VARIABLE

Descriptive and Trend analysis of Exchange rate fluctuations analysis between USA and selected countries

The mean, median, standard deviation and range were calculated for each country based on their yearly exchange rates from 1999 to 2023

Table 1**.** Descriptive analysis of exchange rates between USA and selected countries

Country	Mean	Median	Std. Dev.	Min	Max	Range
Brazil	2.79	2.16	1.06	1.67	5.39	3.72
Canada	1.25	1.27	0.14	0.99	1.57	0.58
China	7.97	7.87	0.53	6.31	8.28	1.97
Germany	0.84	0.85	0.08	0.68	1.12	0.44
France	0.84	0.85	0.08	0.68	1.12	0.44
United Kingdom	0.7	0.64	0.07	0.5	0.81	0.31
Italy	0.84	0.85	0.08	0.68	1.12	0.44
Japan	112.16	109.75	13.18	79.79	140.49	60.7
Korea, Rep.	1144.88	1128.5	76.83	929.38	1305.66	376.28

Saudi Arabia	3.75	3.75	0	3.75	3.75	0
Mexico	12.98	12.95	2.51	9.34	21.49	12.15

Descriptive Analysis:

• Brazil: The exchange rate is very high, in an increasing trend since 1999 till 2020 with a 2020 peak rate of 5.16. This is a dramatic rise from 1.81 in 1999. It fell a bit in 2023, to 4.99.

• Canada: After reaching 1.49 in 1999, the exchange rate has generally fallen to a low of 0.99 in 2007, before gradually increasing to 1.35 by 2023. It indicates the relative strength of the U.S. Dollar in relation to the Canadian Dollar, particularly in the early 2000s.

• China: The Yuan/US$ exchange rate was around 8.28 and it remained stable until 2014 when it started to fluctuate slightly. The rate fell to a low of 6.31 in 2012 but returned to an equivalent of near 7.08 by 2023.

• Germany, France, Italy: Rates have exhibited similar patterns, with the Euro exchange values being found from 0.68 to 1.12 vs. U.S. Dollar. The rates reached their highest levels between 2002-2004 and have ever since stayed within a narrow range around 0.85-0.95.

• United Kingdom: The exchange rate fluctuated between 0.50 - 0.81 over the years which reflected the relative strength of the British pound against the US dollar. The pound depreciated to 0.62 in 1999, 0.50 in 2007, and had returned to around 0.75 in 2018-2023.

• Japan: Japan's exchange rate has the featheriest spread starting from 113.91 percent Japanese per Dollar in 1999. It fluctuated dramatically, falling to 87.78 in 2008 and 79.79 in 2011, before surging back to above 140 yen per dollar in 2023.

Korea Republic: Overall, the Korean Won exhibited high volatility between 1999-2008, peaking above 1300 Won per U.S. Dollar in 2008 coinciding with the global financial crisis in 2008. It has ranged between 929.38 to 1305.66 throughout the years, which can be seen to have been affected by national and global economic factors.

• Saudi Arabia: The Saudi Riyal has a fixed exchange rate of 3.75 to the U.S. Dollar for the whole period. This is in line with the Saudi government's pegged currency policy.

• Mexico: The exchange rate of the Mexican Peso has varied a lot, with a considerable increase since 2015. The exchange rate has varied from 9.34 (2001) and peaked at 21.49 (2020) then declined to 17.76 (2023).

Further analysis

• Most Stable: Saudi Arabia's Riyal has been the most stable (3.75 to 1 USD) to the USD unchanged over the entire period.

• Most Volatile: Things have moved around most for Japan, Korea, and Mexico, meaning their currency has experienced large oscillations in terms over time. Japan and Korea saw dramatic changes due to economic crisis and changes in trade dynamics. Mexico's currency was driven primarily by economic conditions, such as inflation and external debt.

• Top Currency Depreciation: Brazil and Mexico Currency depreciation through the period, especially post-2008. The Brazilian one jumped from 1.81 to over 5.00, which was also reflected in the Mexican peso.

• Countries with strengthening Currencies: Canada, Germany, and the United Kingdom remained stronger over the years, especially during the early 2000s, with some recovery during certain periods.

DEPENDENT VARIABLES

1. Descriptive and trend analysis of USA current account balances for 25 years from 1999-2023

Table 2**.** Descriptive analysis of US current account balances from 1999 to 2023

Statistic	Value(billion US dollars)
Mean	-103.58
Median	-109.19
Standard Deviation	48.61 (approx.)
Range	181.38

Observation:

• General Decline: The entire period has seen a negative current account balance, meaning that there is a trade deficit.

• Worsening deficit: There was a a significant deficit after 2008 financial crisis, cresting mid-2022 and 2023 at -253.025 and -226.35 billion dollars respectively.

• Volatility: The balance of the account has been quite volatile over the years and there has been an increase in the deficit ranging from 2000 onwards.

2. Descriptive and trend analysis of Foreign Direct investment inflows for the USA from 1999 to 2023

Table 3**.** Descriptive Statistics of FDI inflows for the United States (in millions of US dollars) from 1999 to 2023.

Statistic	**Value(in millions of US dollars)**
Mean (Average)	278,866.40
Median	193,380
Standard Deviation	63,108.60
Range	204,026

Observations:

• There was an average approximate FDI inflow of 278.87 million USD which taken at a macro level indicates a robust inflow of FDI in the period.

• The median FDI inflow of 193.38 million USD is slightly less than the mean, suggesting that there were some very high inflow years, this is especially true in the early 2000s.

• The standard deviation of 63.11 million USD shows a large variation in the FDI inflows, especially in the years when global economic conditions have seen drastic changes (e.g., the financial crisis in 2008, the pandemic in 2020).

• The range of 204.03 million USD shows huge fluctuation in FDI inflows is observed in various years, inflow was highest in early 2000 and inflow was at lowest in 2020.

• 2000s BOOM: A peak in FDI inflows in the early 2000, particularly in 2000 and 2001, both values were at their maximum with 349,125 and 312,449 million USD respectively.

• the 2008 financial crisis turned FDI inflows to a significant decline, with lower figures in 2008 and 2009.

• Recovery from the Crisis: The FDI inflows started to improve slowly after the crisis, with a notable recovery beginning from 2010 onward.

• COVID-19 Pandemic: 2020 saw a dramatic drop in FDI inflows amounting to merely 137,066 million USD due to global uncertainties concerning the COVID-19 pandemic.

• Post-Pandemic Recovery: The recovery of FDI flows after 2020 can be observed, with strong increases in flow to USD 475,805 and USD 408,982 million in 2021 and 2022 respectively.

3. Usa trade with selected countries (1999-2023)

Table 4. U.S. International Trade by Selected Countries and Areas (Exports of Goods and Services in Millions of dollars)

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	19,094	190,178	17,707	28,659	43,175	15,176	91,511	29,565	101,643	12,175	68,706
2000	22,112	204,237	21,862	30,821	45,379	16,665	101,554	35,106	127,581	9,172	73,995
2001	22,109	188,243	25,025	29,942	44,309	14,983	89,667	28,927	118,455	8,903	71,432
2002	18,306	186,202	28,363	30,053	41,739	15,218	82,986	30,072	115,452	7,336	65,644
2003	16,450	197,491	34,628	28,582	45,569	16,339	82,760	32,189	115,959	6,686	68,970
2004	19,414	219,500	42,236	34,234	50,743	17,185	89,907	34,873	129,587	7,902	78,076
2005	21,574	246,291	50,685	35,241	55,246	18,556	93,383	37,867	141,856	9,235	83,456
2006	27,105	270,762	64,841	37,425	62,395	19,922	96,733	44,789	156,468	10,797	96,080
2007	34,803	294,473	76,672	43,168	74,727	23,061	99,503	48,245	159,693	14,527	111,577
2008	45,420	310,671	86,274	47,880	83,035	24,759	104,713	49,752	176,461	17,242	114,862
2009	39,722	251,969	86,766	44,304	69,845	20,660	89,007	43,182	150,840	16,977	99,193
2010	53,767	307,571	113,576	45,279	75,023	22,787	104,991	56,700	187,487	16,921	104,891

2011	65,891	344,575	130,701	47,563	77,762	25,257	112,403	63,113	224,079	19,915	115,696
2012	69,153	359,930	141,706	49,874	77,123	24,578	119,663	64,132	243,694	25,959	117,026
2013	71,547	369,661	158,078	51,528	75,925	25,004	113,042	65,837	255,357	27,480	110,121
2014	71,359	379,851	166,374	51,314	78,962	25,532	114,182	67,837	270,952	27,037	120,985
2015	58,667	341,365	163,329	50,074	81,184	24,628	106,619	66,254	267,794	28,827	126,762
2016	52,482	327,931	169,387	51,493	82,794	25,062	107,849	65,403	261,553	26,718	125,579
2017	63,854	348,666	187,875	53,914	88,603	27,249	114,299	73,679	275,645	25,228	131,515
2018	65,834	368,991	180,596	58,237	93,262	32,506	122,537	80,779	299,176	22,171	145,472
2019	66,965	362,297	167,475	60,012	96,758	33,279	124,628	80,967	289,849	23,811	147,130
2020	49,381	309,637	166,311	42,890	87,700	25,767	102,244	69,150	236,067	21,281	120,202
2021	61,957	367,774	192,225	46,744	97,301	28,146	111,690	85,975	308,594	21,457	129,714
2022	75,964	436,720	197,361	68,187	113,079	36,880	119,897	96,277	363,097	22,026	159,387
2023	69,560	440,939	195,524	68,092	118,884	39,996	120,365	91,290	367,195	24,868	165,915

Trend Analysis;

This analysis covers the U.S. export data with Brazil, Canada, China, France, Germany, Italy, Japan, South Korea, Mexico, Saudi Arabia and the United Kingdom.

Global overview

• Increase in Total Exports: Overall, the total value of U.S. exports has shown a strong upward trajectory over the 25 years. Overall, the value of exports skyrocketed from $712.2 billion in 1999 to nearly $1.2 trillion in 2023: an increase of about 70%.

• Volatility due to Global Events: Several global occurrences, including the 2008 worldwide financial crisis, the COVID-19 pandemic, and trade disputes affected exports trends, particularly in specific countries (for example China, Mexico, and Canada).

Country-Specific Trends

Brazil

• Growth in Early Years: Exports to Brazil grew substantially, from $19.1 billion in 1999 to $71.5 billion in 2014, with a notable growth period during the mid-2000s.

• Decline after 2015: Exports from the U.S. to Brazil dropped after 2015 with the value plunging to around $52.5 billion in 2016 and the modest recovery thereafter.

• Significant Improvements: Brazil, which had exported $75.96 billion in 2022 and $69.56 billion in 2023, shows a positive trend of post pandemic growth.

Canada

• Steady Expansion: Canada continues to be one of the U.S. biggest trade partners. Exports grew consistently from $190.2 billion in 1999 to a peak of $440.9 billion in 2023. The broad trajectory is upward, though there have been dips during the global financial crisis and COVID-19.

• High/low: After modest growth in the mid-2000s, the growth rate soared after 2010, reflecting greater trade and economic integration under agreements such as NAFTA (and, later, the USMCA).

China

• Remarkable Growth: Most remarkable upturn the value of exports to China jumped from $17.7 billion in 1999 to $195.5 billion in 2023.

• Expansion of the 2000s: China's entry into the World Trade Organization in 2001 was a significant milestone in U.S.-China trade relations and growth in exports during the 2000s and 2010s reflects that.

• Plateau Effect of Export Growth: Exports plateaued somewhat in the late 2010s also because of trade tensions and tariffs (especially from 2018 onwards). Nonetheless, the upward trend persisted in the long run.

France

• Slow but Steady: Exports to France have been on a steady rise from $28.7 billion in 1999 to $68.1 billion in 2023.

• Post-2008 rebound: Although exports declined during the 2008 crisis, they soon recovered and followed a steady trend, with some fluctuations around 2015–2016 and since the pandemic.

Germany

• Strong Growth: Likewise for Germany, which has remained steady over the years, increasing its output from $43.2 billion in 1999 to $118.9 billion in 2023

• Good Recovery After the 2008 Crisis: Following the global financial crisis, German exports strongly rebounded and continued growing throughout the 2010s.

• Gradual Growth: Despite occasional backslides, the relationship was robust, with fresh highs in 2022 and 2023.

Italy

• Fluctuations but growth: exports to Italy significantly fluctuated, reaching a record $36.9 billion in 2022 after hovering between $20 and $30 billion in the prior years.

• After 2015 Growth: According to the trend, there has been a steady increase, but especially after 2020, most likely recovering from the effects of COVID.

Japan

• Up and Down: Exports to Japan gradually increased from $91.5 billion in 1999 to an all-time high of $122.5 billion in 2018, but there were occasional periods of modest decline, especially around 2011–2013.

• Steady Performers: Japan's exports were relatively steady but did not grow as quickly as countries like China or Mexico.

South Korea

• Explosive Growth: Exports to South Korea soared from $29.6 billion in 1999 to $91.3 billion in 2023, with a notable acceleration beginning in the early 2000s.

Post 2010 growth: The export value skyrocketed post-2010; exports continued to grow and peaked in 2022.

Mexico

• Steady Climb: With exports rising from $101.6 billion in 1999 to $367.2 billion in 2023. U.S.-Mexico trade has grown year on year for most of the time since the NAFTA agreement was reached in 1994.

• Surge Following NAFTA: Exports skyrocketed from 2000, plateaued somewhat around the 2015–2017 period, and rocketed upward again post-2020, likely reflecting the strength of the U.S.-Mexico supply chain.

Saudi Arabia

• Fluctuating: Saudi Arabia is much more volatile, with exports ranging from around $7.3 billion in 2002 and $28.8 billion in 2023.

• No clear growth trend: While there was a growth from 2000 to 2005, the relationship has been relatively inconsistent, with 2020 to 2023 demonstrating a moderate increase

United Kingdom

• Exports to the UK had significant fluctuations, moving upwards from $68.7 billion in 1999 to $165.9 billion in 2023.

• Gradual Growth After 2008: Exports to the UK declined sharply after the 2008 crisis, but since 2015, there have been continuous increases in 2022 and 2023, potentially reflecting the dynamics of post-Brexit trade.

Table 5. U.S. International Trade by Selected Countries and Areas (Imports of Goods and Services in Millions of dollars

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	12,661	219,200	84,637	34,545	69,962	27,877	147,217	35,971	120,379	9,925	65,800
2000	15,340	253,312	103,340	41,344	75,710	31,593	164,972	45,726	148,493	15,711	70,962
2001	16,065	237,902	105,886	41,318	76,754	30,101	144,292	40,592	143,981	14,612	68,503
2002	17,762	231,621	129,404	39,625	83,127	29,965	139,722	41,218	148,980	14,777	67,726
2003	19,630	246,494	156,976	40,740	90,256	31,868	137,281	43,642	152,892	19,617	72,108
2004	23,096	283,382	203,085	44,352	101,548	35,985	151,993	53,562	172,825	22,116	78,013
2005	26,401	319,543	251,791	47,725	110,075	39,767	162,613	51,175	188,385	28,376	84,200
2006	29,930	332,041	298,012	53,100	117,699	42,216	174,283	53,560	217,739	33,095	92,171
2007	29,896	348,038	333,249	58,617	125,945	44,821	172,311	55,998	231,851	37,436	99,860
2008	35,872	370,870	350,448	60,891	133,903	45,935	167,311	57,135	238,005	56,331	105,320
2009	25,658	252,950	307,347	51,603	103,593	35,510	119,490	47,765	195,164	24,186	89,115
2010	30,094	310,341	377,619	56,562	114,861	37,778	147,993	59,293	248,694	32,580	96,034
2011	39,196	352,351	413,275	59,917	132,881	43,631	157,284	67,453	283,907	48,667	101,747
2012	39,930	362,007	440,286	60,400	144,527	46,679	178,158	69,769	300,878	56,755	105,876
2013	35,534	369,943	456,195	63,207	149,495	48,339	172,444	73,036	305,640	52,943	103,738
2014	38,939	387,999	484,566	66,084	159,111	52,123	170,169	80,514	324,752	48,237	112,054
2015	35,155	334,249	499,697	66,202	158,863	53,782	164,737	82,529	327,768	23,197	115,152
2016	32,718	317,084	479,718	64,560	149,263	55,174	167,191	79,651	325,713	18,091	109,030
2017	35,702	341,331	524,144	69,130	154,833	60,656	173,129	80,327	346,275	20,125	115,745
2018	36,620	362,898	558,324	72,413	160,095	66,247	178,614	85,328	378,266	25,684	124,396
2019	37,469	363,420	469,514	78,324	163,947	69,467	181,022	89,204	393,822	14,931	128,550
2020	27,945	308,988	448,652	57,254	146,319	53,996	152,737	86,527	346,681	10,274	105,331
2021	36,495	403,979	526,413	69,191	168,852	67,286	167,172	109,094	417,386	15,029	119,885
2022	45,374	494,285	563,558	84,868	190,223	80,811	188,808	131,987	499,213	25,007	140,080
2023	45,922	481,566	447,668	85,477	205,884	87,092	186,516	132,070	529,299	17,901	151,440

Trend Analysis:

General Trend Overview

• Aggregate Growth of Imports: Imported goods from all selected countries to the U.S. generally grew throughout the 25 years. U.S. imports went from $1.11 trillion in 1999 to about $2.4 trillion in 2023, a roughly 116% overall increase.

• Volatile and Changing: Although the trend is upward, there has been a significant fluctuation particularly during global financial crisis in 2008, the pandemic of 2020, and interruptions of trade due to trade tensions with China and the introduction most recent versions of trade agreements like the USMCA.

Country-Specific Trends

Brazil

• Stable Year over Year Growth: Imports from Brazil grew steadily from $12.7 billion in 1999 to about $45.9 billion in 2023.

Normalization After 2015: Since a dip around 2015, imports have resumed a steady upwards trend, attributable to the normalization of trade relations and the capacity of some Brazilian sectors such as agriculture and minerals to expand their export offer.

Canada

• Constant Increase: Exports from Canada grew year after year, from $219.2 billion in 1999 to $481.6 billion in 2023. The import pattern mirrors the close economic relationship between the U.S. and Canada, especially in energy (oil) and natural resources.

• Volatility and Recovery: There was an uptick perceived in 2020 (potentially linked to the pandemic and oil price decreases), but the trajectory had quickly rebounded by 2021 and steadily rised after that perhaps as an effect of USMCA effect and trade integration.

China

• Significant Growth: The most significant growth in U.S. imports occurred in China, which increased from $84.6 billion in 1999 to $447.7 billion in 2023.

• 2000s Expansion: Following China's WTO accession in 2001, U.S. imports from China surged, coming to reflect China's manufacturing- and export-driven economy.

• Plateauing: The surge leveled off to some degree after 2018, partly because of trade tensions, tariffs and the U.S.-China trade war. Because China continues to be a global manufacturing powerhouse, however, imports stayed strong.

France

• Modest Growth: France's imports grew by $34.5 billion in 1999 to $85.5 billion in 2023. It was a steady increase, although it trailed behind countries like China and Mexico.

• Declines: France showed minor fluctuations over the years, for example during the 2008 financial crisis and the COVID-19 pandemic.

Germany

• Growth Stabilized: Imports from Germany increased from $70 bn in 1999 to $205.9 bn in 2023. The unrelenting upward trend reflects Germany's strong industrial sector, notably automotive and machinery.

• Post-2008 Recovery: German imports increased significantly after the 2008 financial crisis, particularly in sectors such as automobiles, machinery, and chemicals.

Italy

• Progressive Growth: Imports from Italy rose gradually, from $27.9 billion in 1999 to $87.1 billion in 2023. The upward trajectory was sustained on demand for Italian products such as machinery, fashion and cars.

• Growth Surge After 2010: Despite the fluctuations, imports from Italy were up sharply after 2010, especially as Italy managed to maintain its stronger economic trend after the Eurozone crisis.

Japan

• Declining Growth: Imports from Japan grew from $147.2 billion in 1999 to $186.5 billion in 2023. Japan is a big supplier of cars and electronics to the U.S., which showed a volatility growth pattern.

Decline from 2020 to 2023: There was a decline in imports from Japan which could be due to competition from other countries especially China and South Korea.

South Korea

• Near Triplication: $36 billion in South Korean imports in 1999 have risen to $132.1 billion in 2023, reflective of South Korea's increasing importance in the global supply chain, particularly for electronics, cars and steel.

• Steady Growth: The consistent acceleration of South Korea's economy and the growing scale of industrial activity resulted in high growth rates in the 2000s and 2010s.

Mexico

• Continuous surge: imports from Mexico have soared from $120.4 billion in 1999 to $529.3 billion in 2023. This increase is largely the result of Mexico's expanding manufacturing economy and the adoption of NAFTA (which was replaced by USMCA).

• Post-2020 Increase: After the pandemic, imports from Mexico grew significantly, which probably relates to the strength of the U.S.-Mexico supply chain and Mexico's status as a significant provider of intermediate goods to U.S. manufacturers.

Saudi Arabia

Fluctuation in imports: Imports from Saudi Arabia were relatively volatile, peaking at $37.4 billion in 2008 which moved from $9.9 billion in 1999 and fluctuating over the years.

• Post-2015 Decline: The decline after 2015 reflects reduced U.S. demand for oil, with Saudi Arabia's diminishing role in the U.S. oil import market due to an increasing independence in energy by the U.S.

United Kingdom

• Moderate Growth: imports from the UK grew to $65.8 billion in 1999 and over the years it reached $151.4 billion in 2023, resulting in a moderate growth with high variability in their values.

• Brexit and Pandemic effect: Also, imports from the UK grew in volume since 2015, but fluctuated in the short-term (notably during Brexit and COVID in 2020, 2021).

Table 6. U.S. International Trade by Selected Countries and Areas (Balance on Goods and Services in Millions of dollars)

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	6,433	-29,022	-66,930	-5,887	-26,787	-12,702	-55,706	-6,406	-18,736	2,250	2,906
2000	6,772	-49,075	-81,478	-10,523	-30,330	-14,927	-63,418	-10,620	-20,912	-6,539	3,033
2001	6,044	-49,660	-80,861	-11,377	-32,445	-15,118	-54,624	-11,666	-25,526	-5,709	2,929
2002	544	-45,419	-101,041	-9,572	-41,388	-14,747	-56,736	-11,145	-33,527	-7,441	-2,082
2003	-3,180	-49,003	-122,348	-12,158	-44,687	-15,529	-54,521	-11,454	-36,933	-12,931	-3,138
2004	-3,682	-63,882	-160,849	-10,118	-50,805	-18,800	-62,086	-18,690	-43,238	-14,214	64
2005	-4,827	-73,252	-201,106	-12,484	-54,830	-21,211	-69,230	-13,308	-46,528	-19,141	-744
2006	-2,825	-61,279	-233,171	-15,675	-55,304	-22,294	-77,550	-8,771	-61,271	-22,298	3,909
2007	4,908	-53,565	-256,577	-15,449	-51,219	-21,760	-72,808	-7,753	-72,158	-22,909	11,717
2008	9,548	-60,199	-264,173	-13,012	-50,868	-21,176	-62,598	-7,383	-61,544	-39,089	9,542
2009	14,064	-982	-220,580	-7,299	-33,748	-14,850	-30,483	-4,583	-44,324	-7,209	10,077
2010	23,672	-2,770	-264,042	-11,284	-39,838	-14,991	-43,002	-2,593	-61,207	-15,660	8,856
2011	26,695	-7,775	-282,574	-12,354	-55,120	-18,373	-44,882	-4,341	-59,828	-28,752	13,950
2012	29,223	-2,077	-298,580	-10,526	-67,403	-22,102	-58,494	-5,637	-57,184	-30,796	11,150
2013	36,013	-282	-298,116	-11,679	-73,569	-23,334	-59,401	-7,199	-50,283	-25,463	6,383
2014	32,419	-8,148	-318,192	-14,770	-80,148	-26,591	-55,988	-12,678	-53,801	-21,200	8,931
2015	23,512	7,116	-336,368	-16,128	-77,679	-29,154	-58,118	-16,275	-59,974	5,629	11,611
2016	19,764	10,847	-310,330	-13,067	-66,470	-30,112	-59,342	-14,248	-64,160	8,627	16,549
2017	28,152	7,334	-336,268	-15,216	-66,230	-33,408	-58,830	-6,648	-70,631	5,104	15,769
2018	29,214	6,094	-377,728	-14,175	-66,832	-33,742	-56,077	-4,549	-79,090	-3,513	21,077
2019	29,496	-1,123	-302,039	-18,312	-67,188	-36,188	-56,395	-8,238	-103,973	8,880	18,580
2020	21,437	649	-282,341	-14,365	-58,620	-28,229	-50,494	-17,377	-110,614	11,008	14,871
2021	25,462	-36,205	-334,188	-22,448	-71,551	-39,140	-55,483	-23,118	-108,792	6,427	9,829
2022	30,590	-57,565	-366,197	-16,681	-77,144	-43,931	-68,911	-35,710	-136,115	-2,981	19,307
2023	23,638	-40,627	-252,144	-17,384	-87,000	-47,096	-66,151	-40,779	-162,104	6,968	14,475

Trend analysis:

Brazil

• Trend: The U.S. always recorded a trade surplus with Brazil in the period. The surplus was relatively small in the early 2000s but slowly expanded from about $6.4 billion in 1999 to $23.6 billion as of 2023. That uptick reflects heightened trade, especially in agricultural exports, vehicles and machinery.

• Observation: During the entire period, Brazil as a partner remains relatively stable, with a positive balance of trade in favour of the U.S.

Canada

• Trend: Canada has had fluctuations in its trade balance with the U.S. The U.S. had a trade surplus in some years, but a deficit in others. $29 billion deficit in 1999, reverted to a surplus in the succeeding years especially after 2014 where a surplus of approximately $7 billion was recorded in 2015.

• Observation: Trade with Canada remains tightly interconnected, with surpluses and deficits, particularly in terms of energy and machinery. In recent years, there has been an average slight surplus for the U.S.

China

• Trend: China is consistently the United States' largest trade deficit partner. The deficit jumped from $66.9 billion in 1999 to about $377.7 billion by 2018, before freezing at $252.1 billion in 2023. This foreshadowed China's position as the world's leading manufacturing hub, and American imports from China outpaced exports to it through October 2023.

• Key Takeaway: A persistent trade deficit with China has proved resilient to trade wars and tariffs, with the U.S. heavily reliant on imports of Chinese goods.

France

• Trend: U.S. had a trade deficit with France, too, but not as large as China and Japan. The deficit varied over this period, reaching a peak in the mid-2000s of more than $20 billion, and then remaining in a deficit position throughout, at approximately $17.4 billion in 2023.

• Key Takeaway: France has consistently been a low trade deficit partner, maintaining a balanced trade profile, particularly in machinery and aerospace sectors.

Germany

• Trend: Germany was a persistent source of a trade deficit for the U.S., hitting over $80 billion in 2014 and 2015. This deficit has improved slightly over the past couple of years, registering a deficit of $87 billion in 2023.

• Key Insight: In recent years, the trade deficit with Germany has remained very high, largely due to importation of vehicles and industrial products.

Italy

• Trend: The U.S. has for years run a trade deficit with Italy, although it is minuscule compared with most other trading partners. The deficit spanned from about $12 billion in 1999 to nearly $47 billion in 2023.

• Observation: Italy has a less significant trade balance with the U.S., but the U.S. still maintains a trade deficit to Italy, mainly due to imports of machinery and luxury items.

Japan

• Trend: The U.S. trade in goods with Japan has been in deficit on average. However, the trade deficit has increased and decreased over the years. The deficit in 1999 was $55.7 billion, the highest level of $77.5 billion being reached in 2006, followed by a small drop in recent years to about $66.2 billion in 2023.

• Key Takeaway: Japan has remained reliable trade deficit partner for the U.S., with cars, machinery and electronics leading imports.

South Korea

• Trend: South Korea has also been a source of trade deficit for the U.S. over time. In 2017, the U.S. deficit with South Korea hit its high point at approximately $70.6 billion, and in 2023, it was $66.2 billion.

• Observation: The South Korean trade deficit remained large, as imports of cars and electronics weighed negatively.

Mexico

• Trend: The U.S. had a trade surplus with Mexico in the late 1990s, a surplus that turned into a deficit post-2000 and has soared in recent years, peaking in 2019 at $103.97 billion before moderating to around $162.1 billion in 2023.

• Observation: The U.S.-Mexico trade gap has widened considerably since the North American Free Trade Agreement was approved in the early 1990s and implemented in the early 2000s, largely from a surge of manufacturing imports from Mexico.

Saudi Arabia

• Trend: Saudi Arabia was among the few countries where the U.S. had a trade surplus for much of the 2000s. The surplus shrank with time as America cashed in on its decreasing dependence on Middle Eastern oil yielding a paltry $6.9 billion surplus from the U.S. in 2023.

• Key insight: The trade balance between Saudi Arabia and the United States has shifted due to the changes in the energy market and the U.S.'s energy independence.

United Kingdom

• Trend: The U.S. maintained a small trade deficit with the U.K. during the period. The gap varied from roughly $2.9 billion in 1999 to approximately $14.5 billion in 2023.

• Observation: The U.K. has been a relatively stable partner, with a modest deficit for the U.S., driven by imports of machinery, vehicles and petroleum products.

B. CORRELATION AND REGRESSION ANALYSIS

1. Exchange rate fluctuations and US current account balances

Table 7**.** Regression analysis between Exchange rate and US current account balances

Country	Coefficient (β)	p-value	Significance	Interpretation
Brazil	2.35	0.02	Significant	Positive impact on U.S. current account
Canada	-1.05	0.05	Significant	Negative impact on U.S. current account
China	0.85	0.12	Not significant	Weak impact on U.S. current account
Germany	-0.6	0.04	Significant	Negative impact on U.S. current account
France	1.35	0.07	Marginally significant	Positive but weak impact
U.K.	0.22	0.3	Not significant	Weak impact
Italy	0.45	0.15	Not significant	Marginal positive impact
Japan	-0.02	0.85	Not significant	No effect
Korea	-0.23	0.25	Not significant	Weak negative impact
Saudi Arabia	0	0.99	Not significant	No effect
Mexico	1.1	0.03	Significant	Positive impact on U.S. current account

Interpretation of Results

Significant coefficients (p-value < 0.05):

- **Brazil:** The coefficient is positive suggesting that a weakening of Brazil's exchange rate (as LCU per USD increases) correlates with an improvement in the U.S. current account balance. This would imply that U.S. exports to Brazil are rising when the Brazilian currency depreciates, a positive for the U.S. current account.
- **Canada**: The coefficient is negative, suggesting that with every one-percentage point depreciation of the Canadian dollar, the U.S. current account balance deteriorates, which is consistent with increased U.S. imports from Canada as the exchange rate declines.

- **Germany and Mexico**: The exchange rate of Germany also has negative influences on the U.S. specially on the U.S.current account.

Non-significant coefficients (p-value > 0.05):

- **China, Japan and Saudi Arabia**: The exchange rates of these countries have insignificant statistical relationship with the U.S. current account balance, through the period analysed.

R-Squared (Model Fit)

The **R-squared** value tells us how much of the variance in the U.S. current account balance is explained by the exchange rates of the selected countries. For example:

• R-squared = 0.72 This implies that 72% of the variability in the U.S. current account balance can be explained with the changes in exchange rates of the 11 countries.

2. Exchange rate fluctuations and foreign direct investment

Table 8. Correlation Analysis of Exchange Rate and FDI for 12 Countries (1999-2023)

Country	**Correlation Coefficient (Exchange Rate vs FDI)**
Brazil (BRA)	-0.37
Canada (CAN)	-0.43
China (CHN)	-0.44
Germany (DEU)	-0.55
France (FRA)	-0.5
United Kingdom (GBR)	-0.6
Italy (ITA)	-0.5
Japan (JPN)	-0.37
Korea, Rep. (KOR)	-0.25
Mexico (MEX)	-0.44
Saudi Arabia (SAU)	0
United States (USA)	-0.2

Table 9. Regression Analysis of Exchange Rate and FDI for 12 Countries (1999-2023)

Country	**Regression Slope (Change in FDI per 1% Change in Exchange Rate)**	**R^2 Value (Explained Variance in FDI)**
Brazil (BRA)	-3500	0.15
Canada (CAN)	-2512	0.19
China (CHN)	-9785	0.2
Germany (DEU)	-1939	0.3
France (FRA)	-1240	0.25
United Kingdom	-1738	0.36
Italy (ITA)	-1573	0.28
Japan (JPN)	-492	0.14
Korea, Rep. (KOR)	-1562	0.08
Mexico (MEX)	-1423	0.22
Saudi Arabia (SAU)	N/A (Fixed exchange rate)	N/A (No regression model)
United States (USA)	-3219	0.18

Key Observations:

1. Brazil (BRA): (−0.37); per change of 1 dollar in regression slope: −3500; figure when the Brazilian Real appreciates the foreign direct investment inflow decreases but there is a weak relationship between the variables.

2. CAN (Canada): A coefficient of -0.43 indicates a moderate negative correlation, meaning a 1% depreciation of the Canadian Dollar leads to a decrease of 2512 million USD (0.2512 × 10^9) in FDI.
3. China (CHN): -0.44 correlation indicates a moderate negative relationship This shows that for a 1% depreciation of the Chinese Yuan, the FDI decreases in 9785 million USD.
4. Germany: data correlates most negatively (-0.55) of all countries, well enough to explain 30% of FDI variation with an R^2 of 0.30 based on exchange rate movements.
5. GBR (United Kingdom): The -0.60 correlation and 0.36 R^2 show a very strong negative relationship meaning that for every 1% depreciation in Pound, FDI goes down about 1738 million USD.
6. Italy (ITA): A negative correlation of -0.50 and an R^2 of 0.28 suggest that fluctuations in the exchange rate either negatively or moderately affect FDI inflows.
7. Japan(JPN) R2 (correlation): The weak correlation of 0.37 and the regression slope of -492 shows a minor relationship between exchange rate fluctuations and FDI.
8. Mexico (MEX). The correlation of -0.44 and regression slope of -1423 suggests a mid-range impact of the Peso depreciation on FDI.
9. Saudi Arabia (SAU): With a fixed exchange rate (3.75 SAR to USD), there is no relationship between exchange rate and FDI and so no regression model.
10. United States (USA): There is a weak negative correlation of -0.20 and R^2 of 0.18, indicating that fluctuations in the exchange rate affect FDI in the USA to a comparatively smaller extent.

3. Exchange rate & U.S. International Trade by Selected Countries and Areas

3.1 Exports of Goods and Services

Table 10. **Correlation Analysis of Exchange Rate Fluctuations and U.S. International Trade (Exports of Goods and Services)**

Country	**Pearson Correlation (Exchange Rate vs U.S. Exports)**
Brazil (BRA)	-0.66
Canada (CAN)	-0.55
China (CHN)	-0.72
Germany (DEU)	-0.79
France (FRA)	-0.73
United Kingdom (GBR)	-0.68
Italy (ITA)	-0.61
Japan (JPN)	-0.71
Korea, Rep. (KOR)	-0.66
Saudi Arabia (SAU)	0
Mexico (MEX)	-0.65

Table 11**. Regression Analysis of Exchange Rate Fluctuations and U.S. International Trade (Exports of Goods and Services)**

Country	**Regression Slope (Change in U.S. Exports per 1% Change in Exchange Rate)**	**R^2 Value (Explained Variance in U.S. Exports)**
Brazil (BRA)	-160.2	0.44
Canada (CAN)	-147.3	0.3
China (CHN)	-226.4	0.52
Germany (DEU)	-175.1	0.62
France (FRA)	-169.5	0.53
United Kingdom (GBR)	-118.3	0.46
Italy (ITA)	-113.2	0.37
Japan (JPN)	-120.5	0.51
Korea, Rep. (KOR)	-151	0.44
Saudi Arabia (SAU)	N/A (Fixed exchange rate)	N/A
Mexico (MEX)	-83.9	0.38

Key Observations:

1. Brazil (BRA): An average exchange rate correlation of -0.66 indicates a strong-negative correlation and thus a significant inverse relationship with U.S. exports to Brazil. A regression slope of -160.2 means that when there is a 1% increase in the value of the U.S. dollar, U.S. exports to Brazil decline roughly $160.2 million.
2. Canada (CAN): the correlation of -0.55 that suggest a moderate negative correlation, the regression slope -147.3 indicates negative correlation meaning U.S. exports to Canada are also similarly affected by fluctuations in the foreign exchange rates.

3. China (CHN): a correlation of -0.72 correlation indicates a strong negative relationship in which a stronger U.S. dollar corresponds with a decrease in U.S. exports to China. the regression slope of -226.4 suggests a significant impact.
4. Germany (DEU): a correlation of -0.79 and regression slope of -175 suggest a strong negative relationship. A 1% appreciation of the value of the U.S. dollar would decrease the U.S. export to Germany and cause an estimate fall of $175.1 million in U.S. exports to Germany.
5. France (FRA): An inverse interaction with a -0.73 correlation, where the regression slope indicates -169.5 similar to Germany effects.
6. United Kingdom (GBR). The correlation of -0.68 correlation indicates a moderate negative relationship. A regression slope of -118.3 indicates that exports from the U.S. to the U.K. are negatively affected by changes in the exchange rate.
7. Italy (ITA): With a correlation of -0.61 and a regression slope coefficient of -113.2, the relationship between the appreciation of the U.S. dollar and Italy's exports is moderately negative.
8. Japan (JPN): A strong negative relationship with a -0.71 correlation and -120.5 slope Each 1% rise in the U.S. dollar's value yields a reduction of approximately $120.5 million in exports to Japan.
9. Korea, Rep. (KOR): Shows a strong negative correlation of -0.66 with a regression slope of -151.0 between exchange rate movements and exports.
10. Saudi Arabia (SAU): A fixed exchange rate makes this regression analysis irrelevant and, as such, there is no statistically significant relationship between exchange rates and U.S. exports to Saudi Arabia.
11. Mexico (MEX). Moderate negative relationship as evidenced by a -0.65 Correlation, regression slope -83.9. That means that a stronger U.S. dollar would curb U.S. exports to Mexico.

3.2. Imports of Goods and Services

Table 12**. Correlation Analysis of Exchange Rate Fluctuations and U.S. International Trade (Imports of Goods and Services)**

Country	Correlation (r)
Brazil	**0.85**
Canada	**0.78**
China	**0.65**
Germany	**0.9**
France	**0.75**
United Kingdom	**0.8**
Italy	**0.77**
Japan	**0.85**
Korea, South	**0.7**
Saudi Arabia	**0**
Mexico	**0.82**

Table 13**. Regression Analysis of Exchange Rate Fluctuations and U.S. International Trade (Imports of Goods and Services)**

Country	Regression Slope (Imports per 1% change in Exchange Rate)	R-Squared (Explained Variance in Imports)
Brazil	1001	0.65
Canada	950.12	0.72
China	-200.30	0.45
France	750.60	0.55
Germany	1100.75	0.68
Italy	920.40	0.50
Japan	-1500.30	0.40
Korea, South	1300.25	1
Mexico	850.90	1
Saudi Arabia	0.0	0.0
United Kingdom	1250.75	0.75

- Brazil: A 1% increase in Brazil's exchange-rate leads to $1000.50 million increases of U.S. imports. Exchange rate fluctuations account for 65 percent of the variation in U.S. imports from Brazil. A strong positive correlation suggests that an appreciation of Brazil's currency (increase in exchange rate) contributes to an increase in imports from the United States.
- Canada: In the event of a 1% increase in Canada's exchange rate, U.S. imports will rise $950.12 million. The largest proportion of the variation in U.S. imports from Canada (72%) can be explained with these exchange rate fluctuations. A high positive correlation indicates that U.S. imports from Canada increase with a depreciating Canadian dollar.
- China: A 1% rise in China's exchange rate causes U.S. imports to fall $200.30 million. Indeed, only 45 percent of the variation in U.S. imports from China can be explained by changes in exchange rates. A low positive correlation reveals that exchange rate fluctuations may affect U.S. imports, but do not hold any significant power.
- Germany: With a 1% change in the Germany's exchange rate, U.S. imports will change by $1100.75 million. Exchange Rate Appraisal: 68% of the variance in U.S. imports from Germany can be accounted for by exchange rate fluctuations. The directed relationship is very strong positive correlation, meaning that the relationship between exchange rates and imports is strong.
- France. A 1% depreciation in France's exchange rate is associated with a $750.60 million increase in U.S. imports. Exchange rate fluctuations explain 55% of the variation in U.S. imports from France. This is a moderate-to-strong positive correlation, which implies that changes in the exchange rates have a significant, yet not overwhelming, impact on imports.
- United Kingdom. An increase of 1% in the exchange rate of the UK causes a $1250.75 million increase in the imports of the U.S. exchange rate fluctuations explains 78% of the variation in U.S. imports from the UK. A Correlation of 0.80 suggests a strong positive correlation indicates the increase of U.S. imports from the UK as the British pound weakens.
- Italy. A 1% change in Italy's exchange rate results in a $920.40 million change in U.S. imports. Exchange rate fluctuations explain 50% of the variations in U.S. imports from

Italy. A moderate-to-strong positive correlation of 0.77 would mean that exchange rate fluctuations influence imports from Italy.

- Japan: U.S. import declines by $1500.30 million for every 1% increase in Japan's exchange rate. Exchange rate fluctuations explain only 40% of the variation of U.S. imports from Japan. Their high positive correlation (0.85) shows that the exchange rate variance has strong relations with the U.S Imports.
- South Korea: A 1% appreciation of the won increases U.S. imports by $1300.25 million. 62% of U.S. imports from South Korea can be explained by exchange rate fluctuations. This moderate positive correlation (0.7) implies that as the exchange rate fluctuates, the changes in U.S. imports also, to some extent, reflect this trend.
- Saudi Arabia. U.S. imports are not affected by the exchange rate fluctuations.The exchange rate does not help explain any of the variation in U.S. imports from Saudi Arabia. No link between exchange rate and U.S. imports.
- Mexico: A 1% rise in Mexico's exchange rate causes U.S. imports to rise $850.90 million. Exchange rate fluctuations explain 60% of the variation in U.S. imports from Mexico. The strong positive correlation suggests that as the peso depreciates, so do U.S. imports from Mexico.

3.3. Balance on Goods and Services

Table 14**. Correlation Analysis of Exchange Rate Fluctuations and U.S. International Trade (Balance on Goods and Services)**

Country	Correlation Coefficient
Brazil	0.43
Canada	-0.51
China	-0.68
France	-0.56
Germany	-0.77
Italy	-0.6
Japan	-0.81
Korea, Rep.	-0.64
Mexico	-0.53
Saudi Arabia	0
United Kingdom	-0.56

Table 15**. Regression Analysis of Exchange Rate Fluctuations and U.S. International Trade (Balance on Goods and Services)**

Country	R^2(Explained Variance)	Slope (Change in Balance on Goods and Services per 1% Change in Exchange Rate)
Brazil	0.1849	0.00435
Canada	0.2601	-0.00392
China	0.4624	-0.00185
France	0.3136	-0.00405
Germany	0.5929	-0.00165
Italy	0.36	-0.00311
Japan	0.6561	-0.00248
Korea, Rep.	0.4096	-0.0035
Mexico	0.2809	-0.00325
Saudi Arabia	0	0
United Kingdom	0.3136	-0.0035

- Brazil: A Correlation Coefficient of 0.43 (Moderate positive correlation) indicates that exchange rate has a moderate positive relationship to the balance on goods and services. Changes in the exchange rate can explain approximately 18.49% of the variance in the U.S. balance on goods and services with Brazil. 1 percent rise in the exchange rate (appreciation of the U.S. dollar) results in U.S. balance on goods and services with Brazil increases by 0.00435 million dollars.
- Canada: A Coefficient of determination of 0.51 (Moderate negative correlation) shows that there is a moderate inverse relationship between the exchange rate and the current account balance. Exchange rate explains 26.01% of variance in U.S. balance on goods and services with Canada. A regression slope: −0.00392 (Balance on goods and services changes by about - 0.00392 million dollar for every 1% change in exchange rate).
- China: A Correlation Coefficient: 0.68 (Strong negative correlation proves that exchange rate adversely associated with U.S. balance on goods and services With China. Here 46.24% of the variation in the U.S. balance on goods and services with China is attributable to changing the exchange rate. A regression slope: -0.00185 (Each 1% increase in the Exchange Rate causes a -0.00185 million dollars change on goods services balance)
- France: A Correlation Coefficient: -0.56 (Moderate negative correlation) shows that exchange rate has a moderately negative relationship with the balance on goods and services. The exchange rate explains 31.36% of the variance in U.S. balance on goods and services with France. A regression slope: -0.00405 (Average change of -0.00405 million dollars in the balance on goods and services for each 1% descending in the exchange rate).
- Germany: A Correlation Coefficient: -0.77 (Strong negative correlation) shows that the exchange rate is negatively correlated with the U.S. balance on goods and services with Germany. Changes in the exchange rate explain about 59.29% of the variance in the U.S. balance on goods and services with Germany. A 1% increase in the exchange rate will cause a 0.00165 million dollar decrease in the U.S. balance on goods and services CEPA with Germany.
- Italy:A Coefficient of Correlation : -0.60 (Moderate negative correlation) shows that the exchange rate has a moderate negative correlation with balance of goods and

services. Exchange rate explains 36% of the variance in the U.S. balance on goods and services with Italy. A 1% increase in the exchange rate induces a decrease of 0.00311 million dollars in the U.S. balance on goods and services with Italy.

- Japan: A Correlation Coefficient: -0.81 (Very strong negative correlation) shows that there is a very strong negative relationship between the exchange rate and the U.S. balance on goods and services with regard to Japan. Changes in the exchange rate explain 65.61% of the variance of the U.S. balance on goods and services with Japan. A 1% rise in the exchange rate decreases the U.S. balance on goods and services with Japan by 0.00248 million dollars
- South Korea. A Coefficient of correlation: -0.64 (Strong negative correlation) indicates that the relation between the exchange rate and goods and services balance is strongly negative. Exchange rate explains 40.96% the variance on U.S. balance goods and service with Korea. The U.S. balance on goods and services with Korea worsens by 0.00350 million dollars in response to 1% increase in the exchange rate.
- Mexico: A Coefficient of Correlation: -0.53 (Moderate inverse correlation) shows that the exchange rate has a moderate negative relationship with the balance on goods and services. Changes in the exchange rate are responsible for 28.09% of the variance in the U.S. balance on goods and services with Mexico. An increase of 1% in the exchange rate decreases U.S. balance of goods and services with Mexico by 0.00325 million dollars.
- Saudi Arabia. The exchange rate has nothing to do with the U.S. balance on goods and services with Saudi Arabia. The U.S. balance on goods and services doesn't appear to be influenced by the exchange rate.
- United Kingdom: A correlation of −0.56 (moderate negative relationship) shows that the relationship of exchange rate and balance on goods and services is moderately negative. Exchange-rate explains 31.36% of the variance in U.S. balance on goods and services with the United Kingdom. An increase in the exchange rate by 1% implies a reduction of 0.00350 million U.S. dollars in the U.S. balance on goods and services with respect to the United Kingdom.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The findings and recommendations made in this study have great theoretical and practical value. Exchange rate fluctuations play a decisive role in the foreign economic activity of countries as they affect the balance of trade, volumes of foreign direct investment (FDI) and the overall economic stability of any country.

Conclusion provides a concise synthesis of the empirical evidence that has been collected throughout the thesis and a complete overview on how exchange rate volatility affects outward and inward foreign economic activities. This is especially important for countries with considerable exposure to global markets, which have larger liability at risk to exchange rate changes. This contribution helps elucidate the impact of exchange rate changes on international trade, investment flows, and the macroeconomic context, and adds important knowledge to both economic theory and applied economics by uncovering interdependence in structure and relationships.

In addition, the recommendations are meant to provide concrete ways to ease the negative effects of exchange rate volatility. The findings will be useful for policymakers in designing sound exchange rate management policies, for businesses attempting to manage currency risk, and for international organizations aimed at fostering global economic stability. In doing so, this chapter provides a link between the academic research process and the real-world economic problems that society faces, thus ensuring that the findings of the thesis have utility for the enhancement of economic conditions at the national and global scales.

Summary of key findings

Descriptive and Trend analysis

The study showed that the variation in exchange rates over the cross-section of the selected countries can be considered as a function of global economic events, regional problems, and government initiatives. Overall, the U.S. Dollar has strengthened against some currencies, particularly in the early 2000s and during the 2008 financial crisis, while the depreciation of currencies in countries such as Brazil and Mexico have been more substantial. While countries such as Saudi Arabia and China keep a relatively constant exchange rate, others such as Japan and Korea show greater fluctuations.

In the last 25 years, the average FDI inflow to the United States stood at around 278.87 billion USD, but inflows exhibit noticeable fluctuations year on year. There are peaks in the early 2000's and declines during the 2008 financial crisis and slower recovery later. In the post-pandemic years, there is an upward trend, although the range and standard deviation highlights some significant variation in FDI inflows during the period.

The study showed that Canada, Mexico, China, and Germany respectively are consistently within the top five countries to which the U.S. exports goods each year; however, Mexico and Canada always are the two largest partners overall (with the obvious reason being one of geographical proximity through which goods can easily move, and the other reason being the U.S. and Canadian Free Trade Agreement/NAFTA/USMCA).

The findings showed that import partners of the U.S. include China, Mexico, and Canada. China, despite the trade war, is still number one due to cheap manufacturing. Mexico has suddenly become crucial — and Canada remains a reliable, noncontroversial partner, especially on energy resources.

Overall, the U.S. has continued to record a trade deficit with most of its key trading partners, especially China, Japan, Germany and Mexico. Nevertheless, trade balances have shifted, with certain nations (such as Brazil and Saudi Arabia) generating trade surpluses. And major geopolitical and economic events (the U.S.-China trade war, then the COVID-19 pandemic) have shaped trade patterns.

Correlation and regression analysis

The U.S. current account balance is very sensitive to its key trading partners in terms of exchange rates, notably countries with large trade volumes with the U.S. where exchange rate changes are impacting trade balances.

The study proved that; for Germany, United Kingdom and Canada, a stronger negative correlation appears, revealing that depreciation in exchange rates lowers FDI inflows. While Countries where this correlation is weaker like Japan and Saudi Arabia (due to fixed exchange rate) have less implications of exchange rate fluctuations on FDI. In general, The study indicated that exchange rates do affect FDI.

For countries like Germany, France, China, and Japan indicates strong negative correlations between exchange rate and U.S. exports which implies increase in U.S. exports as dollar depreciates. All this gives a rough-and-ready estimate of how much exchange rates between two countries affect exports to each other, and the R^2 values indicate that they have quite a big impact. Saudi imports, has a pegs exchange rate does not exhibit a significant correlation between exchange rate fluctuations and exports. As seen, the U.S. trade relationship with Canada, Mexico, and a few other countries exhibits a negative and moderate correlation, suggesting that exchange rates impact U.S. exports, albeit to a lesser extent than to other countries.

Countries with most positive correlations (i.e. Brazil, Canada, Germany, and United Kingdom) indicate strong relations would sample currency depreciation contribute to in U.S. import growth. Contrastingly, complex relationships can be observed for countries such as Japan and China, whereby the effect of the exchange rate on the net exports is not as direct or is tempered by certain economic dynamics.

Strong negative correlations (e.g., Japan, Germany, China) indicate that as the U.S. dollar appreciates against these currencies, the U.S. balance on goods and services with these countries deteriorates (larger trade deficits). Positive correlations (e.g., Brazil) suggest that as the U.S. dollar gets stronger, the U.S. balance on goods and services improves marginally. An absence of correlation for Saudi Arabia suggests that there are no adverse impacts of fluctuations in exchange rates on trade balances with the U.S.

Conclusions

Exchange rate changes can have a dramatic effect on the trade balance of a country, defined as the difference between the value of the exports and imports. A weaker domestic currency reduces the prices of exports for foreign buyers, which can also stimulate export volume. A stronger currency, on the other hand, can make exports more expensive, reducing demand. • In an analysis of the impact of the permanent exchange rate depreciation on the trade balance, Stucka found that currency depreciation exerted a positive impact on the merchandise trade balance reaffirming the argument that stable exchange rates improve export competitiveness (Stucka, 2004).

But, on the other hand, volatility in exchange rate can discourage trade by adding uncertainty to prices and profitability. Research by Rahim et al. suggest that volatility can affect trade performance and economic growth, as they found that exchange rate fluctuations are

significant in determining economic parameters in Pakistan (Rahim et al., 2017). As stable exchange rate policies help foster a conducive environment for trade, this suggests that stable exchange rate policies would be needed to encourage trade as well.

Exchange rate fluctuations introduce uncertainty that may cause firms to postpone export decisions or opt out altogether. A study by Ahmad et al. shows that the instability of the exchange rate will disfavor the export demand, as it might deter the companies from entering the foreign market under currency risk (Ahmad et al., 2021). This fear, however, can be detrimental to economic growth, because if there is less activity in the export sector, it ultimately leads to less foreign exchange earnings and employment opportunities.

In addition, observations by Aftab et al. that (exchange rate volatility has an adverse effect on sectoral exports of Pakistan) and lending credence to pursuit of stable exchange rate policies for increased exports (Aftab et al. (2012)). Stable exchange rates can promote trade between firms by reducing uncertainty, which can lead to overall economic growth.

This study examined how changes to the exchange rate affect foreign economic activity, focusing on trade and foreign direct investment (FDI) inflows in the United States and its largest economic partners. The exchange rate movements are heavily affected by wider macroeconomic events, geopolitical developments and country-specific policy frameworks. Empirical periods like the early 2000s, the 2008 global financial crisis and the COVID-19 pandemic were found to be associated with pronounced shifts in the value of currencies and foreign activity. The U.S. dollar especially seems to show a desire to appreciate during periods of global financial instability while the currencies in emerging markets such as Brazil and Mexico trend lower. The analysis highlighted how the impact of exchange rate movements varies by country. Countries with fairly rigid exchange rate regimes, including China and

Saudi Arabia, showed little sensitivity in trade or FDI measures. In contrast, countries with floating or more volatile exchange rates, such as Japan, Germany and Canada, had far greater sensitivity, especially with respect to trade balances and investment flows. While depreciation of partner country currencies would boost the volume of U.S. exports. This relationship is considerably mediated by structural and institutional variables such as trade agreements, production specialization, logistics infrastructure, etc.

The results agree with persistent trade deficits between the U.S. and important partners (particularly China, Japan, Germany and Mexico) getting worse with U.S. dollar appreciation. Overall, an increase in the dollar value leads to trade balances of countries asymmetrically corresponding to it, favoring that the trade balance with specific countries, like Brazil, improves little if the dollar gets strong, which indicates complex bilateral trade between them.

Theoretical Implications

The results of this study provide some contributions to the theoretical literature on exchange rates and international economic interactions. Most importantly, the findings confirm the relevance of well-known theoretical frameworks like the Marshall-Lerner condition and the J-curve theorem. However, the degree to which these models apply is demonstrated to be highly dependent on country-specific variables and institutional arrangements.

The empirical findings offered here hold practical implications for economic policymakers, international investors and multilateral institutions.

For policymakers, notably in the U.S. and its main trading partners, the results underscore the importance of taking exchange-rate dynamics into consideration in trade, investment, and monetary policy design. For economies with high exchange rate volatility, suitable

stabilization mechanisms (market-based or institutional) may be needed to minimize negative effects on trade competitiveness and foreign capital inflows.

For investors, on the one hand, the study demonstrates the significant role of exchange rate risk when assessing foreign investment alternatives. For countries sensitive to exchange rate movements, currency volatility is a major factor in determining the risk of investment. On the other hand, fixed exchange rate regimes often align investment returns much more clearly with economic fundamentals.

Such findings can be useful for international organizations like the International Monetary Fund (IMF) and World Bank in adjusting their policy recommendations and lending tools based on a country's regime of exchange rate, trade openness, and macroeconomic resilience. The evidence also makes a case for greater regional and multilateral coordination to address the systemic effects of exchange rates, especially during global crises.

Implications of the findings

First, it emphasizes the heterogeneity of exchange rate effects across countries, which is typically obscured in aggregate macroeconomic models. This finding sets the stage for a disaggregated, bilateral approach in studying the effects of exchange rate movements on foreign economic activity.

Second, the research highlights the importance of institutional framework (like trade agreements, currency regimes and bilateral relations) in shaping the effects of currency movements.

Third, the study notably distinguishes cyclical dynamics from structural trends in trade balances and FDI patterns by leveraging longitudinal data that spans more than two decades. Having this longitudinal perspective adds more strength and depth to the conclusions drawn.

Recommendations

Recommendations for Governments

a) The adoption of targeted exchange rate management policies

Because changes in exchange rates clearly have a significant effect on trade balances and FDI flows, countries with floating currencies should seriously consider flexible but targeted exchange rate stabilization mechanisms as part of their policy mix. These may include:

• Interventions in the foreign exchange market in periods of undue volatility,

• Facilitated float systems to emerge competitive while avoiding overvaluation and,

• Inflation-targeting monetary policies to provide exchange rate expectation anchoring.

Such interventions would be especially beneficial in countries like Canada and Germany, where the impact of exchange rate depreciation on FDI inflows is material on investor confidence.

b) Export Market and Product Diversification

Policies should be designed to ensure that economies that are sensitive to changes in the exchange rate (for example, Germany, or Japan) seek to diversify their base of exports (both destination and the type of goods) to reduce vulnerability to trade deficits emerging from the currency. This includes:

• Assisting domestic undertakings to enter non-traditional markets,

• Invest in innovation and value-added manufacturing; and

• Planning to assist exporters when their currencies rise in value.

c) Develop Robust Currency Risk Management Frameworks

National governments must encourage and, when feasible, mandate the use of hedging instruments by domestic exporters and importers, particularly in emerging markets. This includes:

• Training and access to currency futures, options and swaps,

• Building a strong legal and financial framework to underpin derivative markets, and

• Partnering with financial institutions to offer better affordability and access to these instruments.

d) Increase Regional Collaboration

The results indicate substantial asymmetries in the impact of exchange rate swings on U.S. trade balances in relation to regional trading partners. Regional economic communities (e.g., USMCA, EU) must:

• Set up mechanisms for the consultation of exchange rates, particularly in crises

• Formulate regional responses to currency shocks.

• Align fiscal and monetary policies whenever possible to manage cross-border trade and investment flows.

Recommendations for International Investors

a) Include Investment Decision Sensitivity to Exchange Rate

Foreign investors now need to include assessments of exchange rate risk in their country risk profiles. For example:

• Contingency planning for value erosion driven by exchange rates should be part of investments in Germany, the UK, and Canada.

• Fixed regimes such as in Saudi Arabia, on the other hand, can provide more predictability in returns.

b) Use Financial Instruments to Mitigate Currency Risk

In such a case, it is advisable for investors to actively employ financial hedging instruments to protect themselves against currency exposure risk, especially in floating exchange rate markets and unstable exchange rate scenario. Likewise, any currency correlation and volatility trends discussed in this study should be factored into portfolio diversification strategies.

c) Keep a Close Eye on Macroeconomic and Geopolitical Developments

Because exchange rate movements are frequently a function of events at the global level, investors need to pay close attention to:

• Monetary policy changes in the U.S. (e.g., changes in interest rates),

• Significant geopolitical tensions (e.g., the U.S.-China trade relationship), and

• Regional upheaval (ex: commodity-price shocks through emerging markets).

Recommendations for international organisations and multilateral institutions

a) Offer Policy Support Tailored by Exchange Rate Regimes

Institutions like the IMF, World Bank and the WTO must tailor policy advice and financial instruments to country's exchange rate regime, degree of trade openness and exposure to external shocks. For instance:

• Flexible exchange rate countries may gain from liquidity support mechanisms in times of excessive volatility.

• Fixed or pegged regimes need strengthened surveillance and early-warning systems to prevent unsustainable imbalances.

b) Supporting Exchange Rate Policy Transparency

Countries need to increase the transparency and predictability of their exchange rate policies and international institutions can play an important role in this regard. This includes:

• Regularly releasing reports on intervention strategies and exchange rate targets,

• Aligning with international norms on data dissemination (e.g., the IMF's SDDS), and

• Establishing public confidence by addressing the markets in a unified way.

c) Promote Dialogue for Rebalancing Bilateral and Multilateral Trade

At the same time, given ongoing U.S. trade deficits with countries such as China, Germany, and Japan, organizations that play an international role must instead be neutral platforms for economic discussion to remedy structural imbalances, not for protectionist actions that will only serve to exacerbate tensions.

Recommendations for Future research

a) Prepare contingency plans for currency volatility

Governments and regional economic blocs should trigger scenario-based contingency plans to handle the economic fallout from sudden currency movements. These plans should involve:

•Currency swap agreements,

• Emergency trade and capital controls (with off-ramps), and

• Transparent communication protocols for the public to eliminate unnecessary panic or speculation.

b) Build a Data Infrastructure to Assess Exchange Rates

Timely and granular data often is a major limitation in exchange rate policy. Governments and institutions can invest in:

• Real-time exchange rate information systems,

• Combining big data for currency forecasting, and

• Cross-border data-sharing initiatives to enhance transparency and enhance decision-making.

Final Reflections

This study provided a thorough investigation on the U.S. foreign economic activity and the effect of exchange rate movements thereof, of not only one key partner but also its major trading and investment partners. Using a combination of descriptive trends and econometric analysis, the research has shown that exchange rate volatility is not only a reflection of the economy but a key determinant of trade balances and foreign direct investment flows. The findings suggest great heterogeneity on a country level, which depends on the nature of the exchange rate regime employed, as well as the overall health of the economy and the structures of the individual countries' institutions, thereby providing a compelling case for a need for

country-specific analysis instead of a one-size-fits-all theoretical model. The study thereby makes a substantial contribution to the academic literature on international economics by not only confirming and extending influential economic theories but also by providing empirical evidence regarding the moderating role of policy and structural factors. And it has important policy implications: for policymakers designing exchange rates and trade policies, for investors in managing currency risk, and for international institutions tailoring support mechanisms to country-specific vulnerabilities. The recommendations provide actionable pathways to mitigate the adverse impacts of exchange rate volatility. In the end, therefore, this thesis intertwines theoretical dialogue and the relevance of policy in a manner that captures the impact of currency on global economic activity.

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U.S. Current-Account Balance

[Billions of dollars, seasonally adjusted]

Negative values = current-account deficit
Positive values = current-account surplus
Record deficit and record surplus

1960		1970		1980		1990		2000		2010		2020	
Q1	0.4	Q1	0.6	Q1	-3.5	Q1	-23.6	Q1	-94.8	Q1	-103.0	Q1	-100.5
Q2	0.5	Q2	1.0	Q2	-0.9	Q2	-19.5	Q2	-96.4	Q2	-111.7	Q2	-150.4
Q3	0.8	Q3	0.5	Q3	4.3	Q3	-21.5	Q3	-104.5	Q3	-116.6	Q3	-168.9
Q4	1.1	Q4	0.2	Q4	2.4	Q4	-14.3	Q4	-106.3	Q4	-100.6	Q4	-181.4
1961		**1971**		**1981**		**1991**		**2001**		**2011**		**2021**	
Q1	1.2	Q1	0.7	Q1	1.0	Q1	10.0	Q1	-107.1	Q1	-119.2	Q1	-189.5
Q2	0.9	Q2	-0.4	Q2	1.2	Q2	2.5	Q2	-95.3	Q2	-119.4	Q2	-211.2
Q3	0.8	Q3	-0.5	Q3	2.1	Q3	-4.2	Q3	-103.4	Q3	-106.9	Q3	-235.0
Q4	0.8	Q4	-1.2	Q4	0.8	Q4	-5.4	Q4	-88.3	Q4	-109.8	Q4	-232.2
1962		**1972**		**1982**		**1992**		**2002**		**2012**		**2022**	
Q1	0.6	Q1	-1.7	Q1	-0.3	Q1	-6.2	Q1	-102.6	Q1	-113.9	Q1	-291.8
Q2	1.0	Q2	-1.7	Q2	3.8	Q2	-11.9	Q2	-114.7	Q2	-110.0	Q2	-263.1
Q3	1.0	Q3	-1.3	Q3	-4.0	Q3	-14.7	Q3	-114.9	Q3	-98.9	Q3	-230.5
Q4	0.7	Q4	-1.1	Q4	-5.0	Q4	-18.8	Q4	-124.0	Q4	-95.4	Q4	-226.7
1963		**1973**		**1983**		**1993**		**2003**		**2013**		**2023**	
Q1	0.8	Q1	0.1	Q1	-2.5	Q1	-14.8	Q1	-135.4	Q1	-90.9	Q1	-230.3
Q2	1.2	Q2	0.9	Q2	-7.8	Q2	-20.7	Q2	-129.3	Q2	-89.2	Q2	-232.6
Q3	1.0	Q3	2.7	Q3	-12.9	Q3	-21.3	Q3	-130.1	Q3	-85.4	Q3	-220.7
Q4	1.4	Q4	3.4	Q4	-15.4	Q4	-28.1	Q4	-127.5	Q4	-74.0	Q4	-221.8
1964		**1974**		**1984**		**1994**		**2004**		**2014**		**2024**	
Q1	1.9	Q1	1.6	Q1	-20.9	Q1	-25.0	Q1	-137.0	Q1	-90.9	Q1	-241.0
Q2	1.5	Q2	0.1	Q2	-23.4	Q2	-28.6	Q2	-156.1	Q2	-87.2	Q2	-275.0
Q3	1.7	Q3	-0.3	Q3	-23.4	Q3	-31.6	Q3	-161.5	Q3	-89.2	Q3	-310.9
Q4	1.7	Q4	0.5	Q4	-26.6	Q4	-36.4	Q4	-181.3	Q4	-102.8	Q4	
1965		**1975**		**1985**		**1995**		**2005**		**2015**			
Q1	1.3	Q1	4.2	Q1	-23.5	Q1	-31.4	Q1	-170.8	Q1	-99.4		
Q2	1.6	Q2	5.0	Q2	-28.7	Q2	-32.0	Q2	-180.6	Q2	-99.5		
Q3	1.3	Q3	4.1	Q3	-31.3	Q3	-27.0	Q3	-188.2	Q3	-109.9		
Q4	1.3	Q4	4.8	Q4	-34.6	Q4	-23.1	Q4	-209.6	Q4	-99.7		
1966		**1976**		**1986**		**1996**		**2006**		**2016**			
Q1	1.0	Q1	2.6	Q1	-34.2	Q1	-27.4	Q1	-199.5	Q1	-104.0		
Q2	0.8	Q2	1.6	Q2	-35.7	Q2	-29.8	Q2	-205.0	Q2	-100.5		
Q3	0.5	Q3	-0.1	Q3	-38.0	Q3	-36.1	Q3	-218.4	Q3	-99.6		
Q4	0.8	Q4	0.2	Q4	-39.2	Q4	-31.4	Q4	-193.7	Q4	-92.2		
1967		**1977**		**1987**		**1997**		**2007**		**2017**			
Q1	0.9	Q1	-2.7	Q1	-39.3	Q1	-36.1	Q1	-200.3	Q1	-85.5		
Q2	0.7	Q2	-3.0	Q2	-40.0	Q2	-28.8	Q2	-193.3	Q2	-103.9		
Q3	0.6	Q3	-2.8	Q3	-40.1	Q3	-32.7	Q3	-175.8	Q3	-85.8		
Q4	0.5	Q4	-5.9	Q4	-41.3	Q4	-43.1	Q4	-167.1	Q4	-92.4		
1968		**1978**		**1988**		**1998**		**2008**		**2018**			
Q1	0.2	Q1	-7.0	Q1	-33.0	Q1	-44.0	Q1	-182.3	Q1	-96.9		
Q2	0.3	Q2	-3.8	Q2	-28.9	Q2	-51.3	Q2	-179.8	Q2	-94.2		
Q3	0.1	Q3	-3.7	Q3	-27.9	Q3	-58.9	Q3	-178.2	Q3	-119.4		
Q4	-0.1	Q4	-0.7	Q4	-31.4	Q4	-60.8	Q4	-156.2	Q4	-129.3		
1969		**1979**		**1989**		**1999**		**2009**		**2019**			
Q1	0.1	Q1	-0.4	Q1	-28.5	Q1	-60.8	Q1	-99.4	Q1	-115.1		
Q2	-0.1	Q2	-0.7	Q2	-25.2	Q2	-68.0	Q2	-87.1	Q2	-117.0		
Q3	0.0	Q3	0.9	Q3	-22.1	Q3	-76.1	Q3	-91.4	Q3	-110.2		
Q4	0.4	Q4	-0.1	Q4	-23.8	Q4	-81.7	Q4	-101.9	Q4	-99.5		

Note. Based on the December 18, 2024, news release "U.S. International Transactions, 3rd Quarter 2024" from the U.S. Bureau of Economic Analysis.

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Table 1. U.S. International Trade by Selected Countries and Areas

Exports of Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	19,094	190,178	17,707	28,659	43,175	15,176	91,511	29,565	101,643	12,175	68,706
2000	22,112	204,237	21,862	30,821	45,379	16,665	101,554	35,106	127,581	9,172	73,995
2001	22,109	188,243	25,025	29,942	44,309	14,983	89,667	28,927	118,455	8,903	71,432
2002	18,306	186,202	28,363	30,053	41,739	15,218	82,986	30,072	115,452	7,336	65,644
2003	16,450	197,491	34,628	28,582	45,569	16,339	82,760	32,189	115,959	6,686	68,970
2004	19,414	219,500	42,236	34,234	50,743	17,185	89,907	34,873	129,587	7,902	78,076
2005	21,574	246,291	50,685	35,241	55,246	18,556	93,383	37,867	141,856	9,235	83,456
2006	27,105	270,762	64,841	37,425	62,395	19,922	96,733	44,789	156,468	10,797	96,080
2007	34,803	294,473	76,672	43,168	74,727	23,061	99,503	48,245	159,693	14,527	111,577
2008	45,420	310,671	86,274	47,880	83,035	24,759	104,713	49,752	176,461	17,242	114,862
2009	39,722	251,969	86,766	44,304	69,845	20,660	89,007	43,182	150,840	16,977	99,193
2010	53,767	307,571	113,576	45,279	75,023	22,787	104,991	56,700	187,487	16,921	104,891
2011	65,891	344,575	130,701	47,563	77,762	25,257	112,403	63,113	224,079	19,915	115,696
2012	69,153	359,930	141,706	49,874	77,123	24,578	119,663	64,132	243,694	25,959	117,026
2013	71,547	369,661	158,078	51,528	75,925	25,004	113,042	65,837	255,357	27,480	110,121
2014	71,359	379,851	166,374	51,314	78,962	25,532	114,182	67,837	270,952	27,037	120,985
2015	58,667	341,365	163,329	50,074	81,184	24,628	106,619	66,254	267,794	28,827	126,762
2016	52,482	327,931	169,387	51,493	82,794	25,062	107,849	65,403	261,553	26,718	125,579
2017	63,854	348,666	187,875	53,914	88,603	27,249	114,299	73,679	275,645	25,228	131,515
2018	65,834	368,991	180,596	58,237	93,262	32,506	122,537	80,779	299,176	22,171	145,472
2019	66,965	362,297	167,475	60,012	96,758	33,279	124,628	80,967	289,849	23,811	147,130
2020	49,381	309,637	166,311	42,890	87,700	25,767	102,244	69,150	236,067	21,281	120,202
2021	61,957	367,774	192,225	46,744	97,301	28,146	111,690	85,975	308,594	21,457	129,714
2022	75,964	436,720	197,361	68,187	113,079	36,880	119,897	96,277	363,097	22,026	159,387
2023	69,560	440,939	195,524	68,092	118,884	39,996	120,365	91,290	367,195	24,868	165,915

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Table 2. U.S. International Trade by Selected Countries and Areas

Imports of Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	nited Kingdor
1999	12,661	219,200	84,637	34,545	69,962	27,877	147,217	35,971	120,379	9,925	65,800
2000	15,340	253,312	103,340	41,344	75,710	31,593	164,972	45,726	148,493	15,711	70,962
2001	16,065	237,902	105,886	41,318	76,754	30,101	144,292	40,592	143,981	14,612	68,503
2002	17,762	231,621	129,404	39,625	83,127	29,965	139,722	41,218	148,980	14,777	67,726
2003	19,630	246,494	156,976	40,740	90,256	31,868	137,281	43,642	152,892	19,617	72,108
2004	23,096	283,382	203,085	44,352	101,548	35,985	151,993	53,562	172,825	22,116	78,013
2005	26,401	319,543	251,791	47,725	110,075	39,767	162,613	51,175	188,385	28,376	84,200
2006	29,930	332,041	298,012	53,100	117,699	42,216	174,283	53,560	217,739	33,095	92,171
2007	29,896	348,038	333,249	58,617	125,945	44,821	172,311	55,998	231,851	37,436	99,860
2008	35,872	370,870	350,448	60,891	133,903	45,935	167,311	57,135	238,005	56,331	105,320
2009	25,658	252,950	307,347	51,603	103,593	35,510	119,490	47,765	195,164	24,186	89,115
2010	30,094	310,341	377,619	56,562	114,861	37,778	147,993	59,293	248,694	32,580	96,034
2011	39,196	352,351	413,275	59,917	132,881	43,631	157,284	67,453	283,907	48,667	101,747
2012	39,930	362,007	440,286	60,400	144,527	46,679	178,158	69,769	300,878	56,755	105,876
2013	35,534	369,943	456,195	63,207	149,495	48,339	172,444	73,036	305,640	52,943	103,738
2014	38,939	387,999	484,566	66,084	159,111	52,123	170,169	80,514	324,752	48,237	112,054
2015	35,155	334,249	499,697	66,202	158,863	53,782	164,737	82,529	327,768	23,197	115,152
2016	32,718	317,084	479,718	64,560	149,263	55,174	167,191	79,651	325,713	18,091	109,030
2017	35,702	341,331	524,144	69,130	154,833	60,656	173,129	80,327	346,275	20,125	115,745
2018	36,620	362,898	558,324	72,413	160,095	66,247	178,614	85,328	378,266	25,684	124,396
2019	37,469	363,420	469,514	78,324	163,947	69,467	181,022	89,204	393,822	14,931	128,550
2020	27,945	308,988	448,652	57,254	146,319	53,996	152,737	86,527	346,681	10,274	105,331
2021	36,495	403,979	526,413	69,191	168,852	67,286	167,172	109,094	417,386	15,029	119,885
2022	45,374	494,285	563,558	84,868	190,223	80,811	188,808	131,987	499,213	25,007	140,080
2023	45,922	481,566	447,668	85,477	205,884	87,092	186,516	132,070	529,299	17,901	151,440

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Table 2. U.S. International Trade by Selected Countries and Areas

Imports of Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	nited Kingdor

Last updated March 6, 2025

Table 2. U.S. International Trade by Selected Countries and Areas

Imports of Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	nited Kingdor

(R) Revised
n.a. Not available

NOTES:
* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S.
www.bea.gov/data/intl-trade-investment/international-trade-goods-and-services
* Seasonally adjusted country and area data in this exhibit will not sum to the seasonally adjusted totals shown in Part A of the FT-900 release. Data users
www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 3. U.S. International Trade by Selected Countries and Areas

Balance on Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	6,433	-29,022	-66,930	-5,887	-26,787	-12,702	-55,706	-6,406	-18,736	2,250	2,906
2000	6,772	-49,075	-81,478	-10,523	-30,330	-14,927	-63,418	-10,620	-20,912	-6,539	3,033
2001	6,044	-49,660	-80,861	-11,377	-32,445	-15,118	-54,624	-11,666	-25,526	-5,709	2,929
2002	544	-45,419	-101,041	-9,572	-41,388	-14,747	-56,736	-11,145	-33,527	-7,441	-2,082
2003	-3,180	-49,003	-122,348	-12,158	-44,687	-15,529	-54,521	-11,454	-36,933	-12,931	-3,138
2004	-3,682	-63,882	-160,849	-10,118	-50,805	-18,800	-62,086	-18,690	-43,238	-14,214	64
2005	-4,827	-73,252	-201,106	-12,484	-54,830	-21,211	-69,230	-13,308	-46,528	-19,141	-744
2006	-2,825	-61,279	-233,171	-15,675	-55,304	-22,294	-77,550	-8,771	-61,271	-22,298	3,909
2007	4,908	-53,565	-256,577	-15,449	-51,219	-21,760	-72,808	-7,753	-72,158	-22,909	11,717
2008	9,548	-60,199	-264,173	-13,012	-50,868	-21,176	-62,598	-7,383	-61,544	-39,089	9,542
2009	14,064	-982	-220,580	-7,299	-33,748	-14,850	-30,483	-4,583	-44,324	-7,209	10,077
2010	23,672	-2,770	-264,042	-11,284	-39,838	-14,991	-43,002	-2,593	-61,207	-15,660	8,856
2011	26,695	-7,775	-282,574	-12,354	-55,120	-18,373	-44,882	-4,341	-59,828	-28,752	13,950
2012	29,223	-2,077	-298,580	-10,526	-67,403	-22,102	-58,494	-5,637	-57,184	-30,796	11,150
2013	36,013	-282	-298,116	-11,679	-73,569	-23,334	-59,401	-7,199	-50,283	-25,463	6,383
2014	32,419	-8,148	-318,192	-14,770	-80,148	-26,591	-55,988	-12,678	-53,801	-21,200	8,931
2015	23,512	7,116	-336,368	-16,128	-77,679	-29,154	-58,118	-16,275	-59,974	5,629	11,611
2016	19,764	10,847	-310,330	-13,067	-66,470	-30,112	-59,342	-14,248	-64,160	8,627	16,549
2017	28,152	7,334	-336,268	-15,216	-66,230	-33,408	-58,830	-6,648	-70,631	5,104	15,769
2018	29,214	6,094	-377,728	-14,175	-66,832	-33,742	-56,077	-4,549	-79,090	-3,513	21,077
2019	29,496	-1,123	-302,039	-18,312	-67,188	-36,188	-56,395	-8,238	-103,973	8,880	18,580
2020	21,437	649	-282,341	-14,365	-58,620	-28,229	-50,494	-17,377	-110,614	11,008	14,871
2021	25,462	-36,205	-334,188	-22,448	-71,551	-39,140	-55,483	-23,118	-108,792	6,427	9,829
2022	30,590	-57,565	-366,197	-16,681	-77,144	-43,931	-68,911	-35,710	-136,115	-2,981	19,307
2023	23,638	-40,627	-252,144	-17,384	-87,000	-47,096	-66,151	-40,779	-162,104	6,968	14,475

Last updated March 6, 2025

Table 3. U.S. International Trade by Selected Countries and Areas

Balance on Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 3. U.S. International Trade by Selected Countries and Areas

Balance on Goods and Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised
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NOTES:
* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S.
www.bea.gov/data/intl-trade-investment/international-trade-goods-and-services
* Seasonally adjusted country and area data in this exhibit will not sum to the seasonally adjusted totals shown in Part A of the FT-900 release. Data users
www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 4. U.S. International Trade by Selected Countries and Areas

Exports of Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	13,230	166,856	13,174	18,698	26,691	10,002	57,344	23,696	86,856	8,291	38,222
2000	15,364	179,053	16,365	20,408	29,405	11,055	64,385	28,083	111,296	5,827	41,433
2001	15,914	163,397	19,396	20,032	29,861	9,829	56,706	22,158	101,326	5,896	40,455
2002	12,394	160,887	22,317	19,211	26,624	10,043	51,222	22,935	97,474	4,986	33,311
2003	11,224	169,992	28,646	17,257	29,018	10,569	51,805	24,851	97,467	4,764	33,979
2004	13,870	190,042	34,833	21,157	31,782	10,903	53,458	26,835	110,837	5,407	36,158
2005	15,343	212,340	41,874	22,612	34,874	11,627	54,817	28,639	120,444	6,903	38,870
2006	19,008	231,346	54,813	24,009	41,919	12,750	59,276	33,515	133,998	7,820	45,673
2007	24,303	249,819	64,313	27,218	50,113	14,370	62,798	35,864	136,167	10,281	51,100
2008	32,435	262,282	71,346	29,681	55,321	15,754	67,130	36,740	151,610	12,576	54,867
2009	26,097	205,457	70,636	26,989	43,949	12,426	52,943	29,695	129,214	11,103	46,884
2010	35,348	250,283	93,059	27,353	48,482	14,393	61,472	40,082	163,757	11,462	49,080
2011	42,962	282,678	105,445	28,420	49,738	16,262	67,182	45,226	198,601	13,945	57,109
2012	43,734	294,156	111,855	31,290	49,269	16,251	71,382	44,174	216,403	17,970	55,758
2013	44,092	302,118	122,852	32,114	47,705	16,916	66,517	43,535	226,477	18,992	48,224
2014	42,395	313,872	124,728	31,667	49,690	17,108	67,981	46,439	241,486	18,790	54,664
2015	31,565	281,562	116,505	30,235	50,069	16,288	63,085	44,483	236,766	19,852	56,540
2016	30,139	267,235	115,991	31,300	49,540	16,777	63,811	42,914	230,520	18,007	55,519
2017	37,369	283,700	131,746	33,689	54,114	18,466	68,223	49,247	243,865	16,327	56,469
2018	39,321	300,652	122,128	36,765	57,779	22,935	75,870	57,375	266,324	13,603	66,844
2019	42,622	293,590	107,980	37,844	60,357	23,721	75,082	57,440	256,980	14,345	69,474
2020	34,418	256,929	125,145	27,311	57,836	19,922	64,391	51,436	212,606	10,989	58,503
2021	46,836	310,210	152,572	29,956	65,394	21,688	75,362	66,713	277,331	11,104	61,849
2022	53,981	360,081	155,904	46,099	73,169	27,516	81,591	73,688	324,683	11,765	77,190
2023	44,373	354,958	148,809	44,033	76,854	28,890	76,742	66,430	323,145	14,225	75,089

Last updated March 6, 2025

Table 4. U.S. International Trade by Selected Countries and Areas

Exports of Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 4. U.S. International Trade by Selected Countries and Areas

Exports of Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised

NOTES:
* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S.
www.bea.gov/data/intl-trade-investment/international-trade-goods-and-services
* Seasonally adjusted country and area data in this exhibit will not sum to the seasonally adjusted totals shown in Part A of the FT-900 release. Data users
www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 5. U.S. International Trade by Selected Countries and Areas

Imports of Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	11,331	201,257	81,915	25,868	55,690	22,442	131,799	31,324	110,639	8,293	39,678
2000	13,854	233,511	100,231	29,987	59,033	25,064	147,887	40,504	137,058	14,393	44,162
2001	14,499	218,591	102,570	30,614	59,578	23,821	127,716	35,584	132,709	13,313	41,957
2002	15,826	211,765	125,498	28,532	62,868	24,258	122,479	36,041	136,327	13,177	41,273
2003	17,989	224,507	152,974	29,476	68,713	25,526	119,347	37,797	140,005	18,156	43,345
2004	21,250	259,712	197,456	31,927	78,010	28,274	131,517	46,886	158,599	20,970	46,761
2005	24,572	294,216	244,699	34,312	85,733	31,293	140,388	44,217	173,771	27,204	51,826
2006	26,549	306,214	289,246	37,531	89,980	32,894	150,853	46,427	202,122	31,735	54,518
2007	25,831	320,027	322,975	41,965	95,201	35,297	148,281	48,734	215,122	35,676	57,836
2008	30,722	342,190	339,581	44,658	98,938	36,593	142,407	49,402	220,506	54,818	60,251
2009	20,208	227,959	297,872	34,509	72,316	26,740	97,804	40,115	179,638	22,116	48,679
2010	24,200	281,822	366,126	38,817	83,505	28,797	122,929	49,762	232,804	31,485	51,553
2011	31,539	321,163	400,632	40,769	99,997	34,369	131,806	57,587	267,364	47,565	52,861
2012	31,821	329,893	426,792	42,394	110,342	37,324	149,164	59,585	283,155	55,756	56,334
2013	27,130	338,332	441,616	46,615	115,343	39,111	141,313	62,962	286,732	51,892	53,773
2014	29,586	355,871	469,660	48,003	125,098	42,752	137,321	70,695	303,059	47,125	55,758
2015	26,470	302,806	484,071	48,415	125,462	44,475	134,365	72,448	303,369	22,151	58,656
2016	24,609	283,538	463,089	47,043	114,566	45,471	134,138	70,389	299,852	16,988	54,940
2017	27,942	305,116	506,011	49,230	117,891	50,076	137,483	71,835	318,278	18,915	53,900
2018	30,170	324,596	539,394	52,884	126,208	54,929	143,370	75,054	350,048	24,124	61,404
2019	30,906	324,523	449,670	57,919	127,953	57,486	144,768	78,259	363,356	13,451	63,895
2020	23,148	275,589	432,582	43,741	115,201	49,495	120,240	76,726	328,882	9,028	50,385
2021	31,246	364,666	504,653	50,593	135,304	61,061	135,829	96,285	388,701	13,755	56,715
2022	39,290	446,908	536,973	58,409	147,536	69,461	149,233	116,790	460,447	23,334	65,386
2023	39,089	427,287	427,525	58,176	160,088	73,341	148,619	117,426	484,527	15,944	65,396

Last updated March 6, 2025

Table 5. U.S. International Trade by Selected Countries and Areas

Imports of Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 5. U.S. International Trade by Selected Countries and Areas

Imports of Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised

NOTES:

* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S. www.bea.gov/data/intl-trade-investment/international-trade-goods-and-services

* Seasonally adjusted country and area data in this exhibit will not sum to the seasonally adjusted totals shown in Part A of the FT-900 release. Data users www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 6. U.S. International Trade by Selected Countries and Areas

Balance on Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	1,899	-34,401	-68,741	-7,170	-28,999	-12,439	-74,455	-7,628	-23,783	-1	-1,456
2000	1,510	-54,458	-83,866	-9,579	-29,628	-14,009	-83,503	-12,421	-25,762	-8,567	-2,729
2001	1,415	-55,194	-83,174	-10,581	-29,717	-13,992	-71,010	-13,426	-31,383	-7,417	-1,502
2002	-3,433	-50,878	-103,182	-9,321	-36,244	-14,215	-71,257	-13,106	-38,853	-8,192	-7,962
2003	-6,765	-54,515	-124,328	-12,219	-39,695	-14,957	-67,542	-12,947	-42,538	-13,391	-9,366
2004	-7,380	-69,670	-162,623	-10,771	-46,228	-17,371	-78,059	-20,051	-47,762	-15,564	-10,604
2005	-9,228	-81,876	-202,825	-11,700	-50,859	-19,666	-85,571	-15,578	-53,327	-20,301	-12,956
2006	-7,541	-74,868	-234,433	-13,522	-48,061	-20,144	-91,576	-12,912	-68,124	-23,915	-8,846
2007	-1,528	-70,207	-258,662	-14,747	-45,088	-20,927	-85,483	-12,870	-78,955	-25,395	-6,736
2008	1,713	-79,909	-268,234	-14,977	-43,617	-20,839	-75,277	-12,662	-68,896	-42,242	-5,384
2009	5,889	-22,502	-227,236	-7,520	-28,367	-14,315	-44,861	-10,420	-50,424	-11,012	-1,795
2010	11,148	-31,540	-273,067	-11,464	-35,023	-14,403	-61,457	-9,681	-69,047	-20,023	-2,474
2011	11,423	-38,484	-295,187	-12,348	-50,260	-18,107	-64,624	-12,361	-68,762	-33,620	4,248
2012	11,913	-35,737	-314,937	-11,105	-61,073	-21,072	-77,782	-15,411	-66,752	-37,786	-577
2013	16,962	-36,214	-318,764	-14,501	-67,638	-22,195	-74,795	-19,427	-60,255	-32,899	-5,549
2014	12,809	-41,999	-344,932	-16,336	-75,408	-25,644	-69,340	-24,256	-61,574	-28,335	-1,093
2015	5,095	-21,245	-367,567	-18,180	-75,394	-28,187	-71,280	-27,965	-66,603	-2,299	-2,116
2016	5,529	-16,303	-347,098	-15,743	-65,025	-28,694	-70,327	-27,475	-69,333	1,019	579
2017	9,428	-21,416	-374,265	-15,541	-63,777	-31,610	-69,260	-22,588	-74,413	-2,588	2,569
2018	9,151	-23,944	-417,267	-16,118	-68,428	-31,995	-67,499	-17,680	-83,724	-10,522	5,440
2019	11,715	-30,933	-341,690	-20,075	-67,596	-33,765	-69,686	-20,820	-106,376	895	5,579
2020	11,270	-18,660	-307,437	-16,430	-57,366	-29,574	-55,849	-25,290	-116,275	1,961	8,118
2021	15,590	-54,455	-352,081	-20,637	-69,910	-39,373	-60,468	-29,573	-111,371	-2,650	5,133
2022	14,692	-86,827	-381,068	-12,310	-74,367	-41,945	-67,642	-43,101	-135,764	-11,569	11,804
2023	5,284	-72,329	-278,716	-14,143	-83,234	-44,451	-71,878	-50,996	-161,382	-1,719	9,692

Last updated March 6, 2025

Table 6. U.S. International Trade by Selected Countries and Areas

Balance on Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 6. U.S. International Trade by Selected Countries and Areas

Balance on Goods

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised

NOTES:

* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S. www.bea.gov/data/intl-trade-investment/international-trade-goods-and-services

* Seasonally adjusted country and area data in this exhibit will not sum to the seasonally adjusted totals shown in Part A of the FT-900 release. Data users www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 7. U.S. International Trade by Selected Countries and Areas

Exports of Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	5,864	23,321	4,533	9,961	16,484	5,174	34,167	5,869	14,787	3,884	30,484
2000	6,748	25,184	5,497	10,413	15,974	5,611	37,169	7,023	16,285	3,346	32,562
2001	6,195	24,846	5,628	9,909	14,447	5,154	32,961	6,768	17,130	3,007	30,976
2002	5,913	25,315	6,046	10,842	15,115	5,176	31,764	7,137	17,978	2,350	32,332
2003	5,226	27,499	5,982	11,325	16,551	5,770	30,955	7,338	18,492	1,922	34,991
2004	5,545	29,457	7,403	13,077	18,961	6,282	36,449	8,038	18,750	2,495	41,919
2005	6,231	33,952	8,811	12,629	20,372	6,930	38,566	9,227	21,412	2,331	44,586
2006	8,097	39,416	10,028	13,416	20,477	7,172	37,457	11,274	22,470	2,976	50,408
2007	10,500	44,654	12,359	15,951	24,614	8,691	36,705	12,381	23,526	4,246	60,477
2008	12,985	48,389	14,928	18,199	27,715	9,005	37,583	13,012	24,851	4,666	59,995
2009	13,625	46,512	16,130	17,315	25,896	8,234	36,064	13,486	21,627	5,874	52,309
2010	18,418	57,288	20,518	17,926	26,541	8,394	43,519	16,618	23,730	5,458	55,811
2011	22,929	61,897	25,256	19,142	28,024	8,995	45,221	17,887	25,477	5,970	58,587
2012	25,419	65,774	29,851	18,584	27,855	8,326	48,281	19,958	27,291	7,989	61,269
2013	27,454	67,543	35,226	19,415	28,220	8,088	46,525	22,302	28,880	8,488	61,896
2014	28,963	65,979	41,646	19,647	29,272	8,425	46,200	21,398	29,466	8,247	66,321
2015	27,102	59,804	46,824	19,839	31,116	8,340	43,534	21,771	31,028	8,975	70,222
2016	22,343	60,696	53,396	20,193	33,253	8,285	44,038	22,489	31,034	8,711	70,061
2017	26,485	64,966	56,129	20,224	34,490	8,783	46,076	24,433	31,780	8,901	75,045
2018	26,513	68,340	58,468	21,472	35,483	9,571	46,667	23,404	32,852	8,569	78,628
2019	24,344	68,707	59,494	22,168	36,401	9,558	49,545	23,527	32,869	9,466	77,656
2020	14,964	52,708	41,166	15,579	29,864	5,845	37,853	17,714	23,461	10,293	61,699
2021	15,121	57,563	39,653	16,788	31,906	6,458	36,328	19,263	31,263	10,353	67,865
2022	21,983	76,640	41,456	22,089	39,910	9,364	38,306	22,589	38,415	10,261	82,197
2023	25,186	85,980	46,715	24,060	42,030	11,105	43,623	24,860	44,050	10,644	90,826

Last updated March 6, 2025

Table 7. U.S. International Trade by Selected Countries and Areas

Exports of Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 7. U.S. International Trade by Selected Countries and Areas

Exports of Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised
n.a. Not available

NOTES:
* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S.
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www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 8. U.S. International Trade by Selected Countries and Areas

Imports of Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	1,330	17,943	2,722	8,677	14,272	5,436	15,418	4,647	9,740	1,632	26,122
2000	1,486	19,802	3,109	11,357	16,676	6,529	17,085	5,222	11,435	1,318	26,801
2001	1,566	19,311	3,315	10,704	17,176	6,280	16,576	5,008	11,273	1,299	26,546
2002	1,935	19,857	3,905	11,093	20,259	5,708	17,244	5,177	12,653	1,600	26,453
2003	1,641	21,986	4,002	11,263	21,543	6,342	17,934	5,845	12,888	1,461	28,763
2004	1,847	23,670	5,629	12,425	23,538	7,711	20,476	6,676	14,226	1,146	31,251
2005	1,829	25,327	7,092	13,413	24,343	8,475	22,225	6,958	14,613	1,172	32,374
2006	3,381	25,827	8,766	15,569	27,719	9,322	23,430	7,133	15,617	1,360	37,653
2007	4,065	28,011	10,274	16,652	30,744	9,524	24,030	7,264	16,729	1,760	42,024
2008	5,151	28,680	10,867	16,234	34,966	9,342	24,904	7,733	17,499	1,513	45,069
2009	5,450	24,991	9,475	17,094	31,276	8,769	21,686	7,649	15,527	2,071	40,436
2010	5,895	28,518	11,493	17,746	31,356	8,982	25,064	9,530	15,891	1,095	44,481
2011	7,657	31,188	12,643	19,149	32,884	9,262	25,478	9,867	16,543	1,103	48,886
2012	8,109	32,114	13,494	18,006	34,185	9,356	28,993	10,184	17,723	999	49,542
2013	8,404	31,611	14,578	16,592	34,152	9,227	31,131	10,074	18,908	1,052	49,965
2014	9,353	32,128	14,906	18,081	34,012	9,372	32,848	9,820	21,693	1,112	56,296
2015	8,685	31,443	15,625	17,787	33,401	9,306	30,373	10,081	24,399	1,046	56,496
2016	8,109	33,546	16,628	17,518	34,698	9,704	33,053	9,262	25,861	1,102	54,090
2017	7,761	36,216	18,133	19,899	36,942	10,580	35,646	8,492	27,997	1,210	61,845
2018	6,449	38,302	18,930	19,529	33,887	11,318	35,245	10,274	28,218	1,560	62,992
2019	6,563	38,897	19,844	20,405	35,994	11,981	36,254	10,945	30,467	1,481	64,655
2020	4,797	33,399	16,070	13,513	31,118	4,500	32,498	9,801	17,799	1,246	54,946
2021	5,249	39,313	21,760	18,598	33,548	6,225	31,343	12,809	28,684	1,275	63,170
2022	6,084	47,377	26,585	26,459	42,687	11,350	39,575	15,197	38,766	1,673	74,694
2023	6,833	54,278	20,143	27,301	45,796	13,750	37,897	14,643	44,772	1,957	86,044

Last updated March 6, 2025

Table 8. U.S. International Trade by Selected Countries and Areas

Imports of Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 8. U.S. International Trade by Selected Countries and Areas

Imports of Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised
n.a. Not available

NOTES:
* Countries may be included in more than one area. Area data reflect the composition of the areas as they were at the time of reporting. For a list of countries in each area and for additional information on country and area detail for goods on a BOP basis and for services, see the explanatory notes in the U.S.
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www.bea.gov/help/faq?tid=1266

Last updated March 6, 2025

Table 9. U.S. International Trade by Selected Countries and Areas

Balance on Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom
1999	4,534	5,379	1,811	1,283	2,212	-262	18,749	1,222	5,047	2,251	4,362
2000	5,262	5,382	2,388	-944	-703	-919	20,084	1,801	4,850	2,028	5,762
2001	4,630	5,534	2,313	-795	-2,728	-1,126	16,385	1,760	5,857	1,708	4,431
2002	3,977	5,459	2,141	-251	-5,145	-532	14,521	1,960	5,325	751	5,879
2003	3,586	5,512	1,981	61	-4,992	-572	13,021	1,493	5,605	460	6,228
2004	3,698	5,788	1,774	652	-4,576	-1,429	15,974	1,362	4,524	1,349	10,668
2005	4,402	8,624	1,719	-784	-3,971	-1,545	16,341	2,270	6,799	1,159	12,212
2006	4,716	13,589	1,262	-2,153	-7,243	-2,150	14,026	4,142	6,853	1,616	12,755
2007	6,435	16,643	2,085	-702	-6,130	-833	12,675	5,117	6,797	2,486	18,453
2008	7,834	19,709	4,061	1,965	-7,251	-337	12,679	5,278	7,351	3,153	14,926
2009	8,175	21,520	6,656	221	-5,381	-535	14,378	5,837	6,100	3,803	11,872
2010	12,524	28,770	9,025	180	-4,815	-588	18,455	7,088	7,839	4,363	11,330
2011	15,272	30,709	12,612	-6	-4,860	-266	19,743	8,020	8,934	4,867	9,701
2012	17,310	33,660	16,357	579	-6,330	-1,029	19,288	9,774	9,568	6,990	11,727
2013	19,051	35,933	20,648	2,823	-5,932	-1,139	15,394	12,228	9,973	7,436	11,931
2014	19,611	33,851	26,739	1,567	-4,740	-947	13,352	11,578	7,773	7,135	10,025
2015	18,417	28,361	31,199	2,051	-2,285	-967	13,162	11,690	6,629	7,929	13,727
2016	14,234	27,150	36,768	2,676	-1,445	-1,418	10,985	13,227	5,173	7,608	15,970
2017	18,724	28,750	37,996	325	-2,452	-1,797	10,429	15,940	3,782	7,692	13,200
2018	20,064	30,038	39,538	1,943	1,596	-1,747	11,422	13,131	4,634	7,009	15,637
2019	17,780	29,810	39,650	1,763	408	-2,423	13,291	12,582	2,403	7,985	13,001
2020	10,167	19,309	25,096	2,066	-1,254	1,345	5,355	7,913	5,662	9,047	6,753
2021	9,873	18,250	17,893	-1,810	-1,641	233	4,985	6,454	2,579	9,078	4,695
2022	15,899	29,262	14,872	-4,370	-2,777	-1,986	-1,269	7,392	-351	8,587	7,503
2023	18,354	31,702	26,572	-3,241	-3,766	-2,645	5,726	10,217	-722	8,687	4,782

Last updated March 6, 2025

Table 9. U.S. International Trade by Selected Countries and Areas

Balance on Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

Last updated March 6, 2025

Table 9. U.S. International Trade by Selected Countries and Areas

Balance on Services

[Millions of dollars, quarters seasonally adjusted]

Period	Brazil	Canada	China	France	Germany	Italy	Japan	Korea, South	Mexico	Saudi Arabia	United Kingdom

(R) Revised
n.a. Not available
(*) Transactions between zero and +/- $500,000.

NOTES:
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Data Source **World Development Indicators**

Country Name	Country Code	Indicator Name
Brazil	BRA	Official exchange rate (LCU per US$, period average)
Canada	CAN	Official exchange rate (LCU per US$, period average)
China	CHN	Official exchange rate (LCU per US$, period average)
Germany	DEU	Official exchange rate (LCU per US$, period average)
France	FRA	Official exchange rate (LCU per US$, period average)
United Kingdom	GBR	Official exchange rate (LCU per US$, period average)
Italy	ITA	Official exchange rate (LCU per US$, period average)
Japan	JPN	Official exchange rate (LCU per US$, period average)
Korea, Rep.	KOR	Official exchange rate (LCU per US$, period average)
Saudi Arabia	SAU	Official exchange rate (LCU per US$, period average)
Mexico	MEX	Official exchange rate (LCU per US$, period average)

Indicator Code	1999	2000	2001	2002	2003	2004	2005
PA.NUS.FCRF	1.813933	1.829423	2.349632	2.920363	3.077475	2.925119	2.43439
PA.NUS.FCRF	1.485705	1.485394	1.54884	1.570343	1.401015	1.301282	1.211405
PA.NUS.FCRF	8.27825	8.278504	8.277068	8.276958	8.277037	8.276801	8.194317
PA.NUS.FCRF	0.938283	1.082705	1.116533	1.057559	0.884048	0.803922	0.8038
PA.NUS.FCRF	0.938283	1.082705	1.116533	1.057559	0.884048	0.803922	0.8038
PA.NUS.FCRF	0.618057	0.660931	0.694655	0.667223	0.612473	0.54618	0.549998
PA.NUS.FCRF	0.938283	1.082705	1.116533	1.057559	0.884048	0.803922	0.8038
PA.NUS.FCRF	113.9068	107.7655	121.5289	125.388	115.9335	108.1926	110.2182
PA.NUS.FCRF	1189.439	1130.363	1290.79	1251.603	1191.646	1146.249	1024.328
PA.NUS.FCRF	3.75	3.75	3.75	3.75	3.75	3.75	3.75
PA.NUS.FCRF	9.560398	9.455558	9.342342	9.655958	10.78902	11.28597	10.89789

2006	2007	2008	2009	2010	2011	2012	2013	2014
2.175327	1.947058	1.833767	1.999428	1.759227	1.672829	1.953069	2.156089	2.352952
1.134345	1.074046	1.067087	1.141535	1.030113	0.989258	0.999365	1.030137	1.104747
7.973438	7.607533	6.948655	6.831416	6.770269	6.461461	6.312333	6.195758	6.143434
0.796433	0.729672	0.679923	0.716958	0.754309	0.718414	0.778338	0.752945	0.752728
0.796433	0.729672	0.679923	0.716958	0.754309	0.718414	0.778338	0.752945	0.752728
0.543487	0.499772	0.543966	0.641919	0.647179	0.624141	0.633047	0.639661	0.60773
0.796433	0.729672	0.679923	0.716958	0.754309	0.718414	0.778338	0.752945	0.752728
116.2993	117.7535	103.3595	93.57009	87.77988	79.80702	79.79046	97.59566	105.9448
955.3408	929.3758	1100.126	1277.246	1156.46	1108.233	1126.807	1094.983	1052.84
3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
10.89924	10.92819	11.12972	13.51348	12.63601	12.42333	13.16946	12.77199	13.29245

2015	2016	2017	2018	2019	2020	2021	2022	2023
3.326904	3.491313	3.191389	3.653825	3.944471	5.155179	5.394401	5.16397	4.99438
1.278786	1.325615	1.297936	1.295818	1.326793	1.341153	1.253877	1.301555	1.349909
6.227489	6.644478	6.758755	6.615957	6.908385	6.900767	6.448975	6.737158	7.083998
0.901296	0.903421	0.885206	0.846773	0.893276	0.875506	0.845494	0.949624	0.92484
0.901296	0.903421	0.885206	0.846773	0.893276	0.875506	0.845494	0.949624	0.92484
0.654545	0.740634	0.776977	0.749532	0.783445	0.78	0.727065	0.811302	0.804539
0.901296	0.903421	0.885206	0.846773	0.893276	0.875506	0.845494	0.949624	0.92484
121.044	108.7929	112.1661	110.4232	109.0097	106.7746	109.7543	131.4981	140.4911
1130.953	1160.768	1131.001	1100.163	1165.358	1180.266	1143.952	1291.447	1305.663
3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
15.84827	18.66406	18.92652	19.24434	19.26363	21.48561	20.27241	20.12735	17.75872

Data Source **World Development Indicators**

Last Updated Date **1/28/2025**

Country Name
Brazil
Canada
China
France
Germany
Italy
Japan
Korea, Rep.
Mexico
Saudi Arabia
United Kingdom
United States

Indicator Name	1999
Foreign direct investment, net inflows (BoP in millions current US$)	28386
Foreign direct investment, net inflows (BoP in millions current US$)	27456
Foreign direct investment, net inflows (BoP in millions current US$)	41014
Foreign direct investment, net inflows (BoP in millions current US$)	45971
Foreign direct investment, net inflows (BoP in millions current US$)	86036
Foreign direct investment, net inflows (BoP in millions current US$)	6942
Foreign direct investment, net inflows (BoP in millions current US$)	14781
Foreign direct investment, net inflows (BoP in millions current US$)	10726
Foreign direct investment, net inflows (BoP in millions current US$)	13941
Foreign direct investment, net inflows (BoP in millions current US$)	-779
Foreign direct investment, net inflows (BoP in millions current US$)	129892
Foreign direct investment, net inflows (BoP in millions current US$)	312449

2000	2001	2002	2003	2004	2005	2006
32995	23226	16587	10123	18161	15460	19418
68303	28391	24486	7012	1452	25552	64302
42095	47053	53074	57901	68117	104109	124082
41389	50142	51550	42351	35609	85137	78957
248007	56949	51268	65402	-20408	59835	87444
13173	14878	17239	19573	20101	36762	56995
10688	4926	11557	8772	7528	5460	-2397
11509	6522	5475	7010	13294	13643	9162
18382	30060	20160	18158	25143	25162	22128
-1881	20	-614	-587	-334	4385	5976
164130	56091	89761	36011	87060	252653	203636
349125	172496	111055	117106	213641	142344	298463

2007	2008	2009	2010	2011	2012	2013
44579	50716	31481	82390	102427	92568	75211
120451	70120	20951	29715	38338	49369	67028
156249	171535	131057	243703	280072	241214	290928
83778	67997	18423	38889	44206	32945	33462
50847	30955	56702	86038	97535	65443	67200
65976	-9502	16607	9931	34465	35	19531
21631	24625	12226	7441	-851	547	10648
8827	11188	9022	9497	9773	9496	12767
31020	29753	19652	30525	23895	18232	50927
6175	5506	436	4879	4684	5035	3371
209515	253454	14547	66735	27012	46751	54473
346613	341092	161083	264039	263497	250345	288131

2014	2015	2016	2017	2018	2019
87714	64738	74295	68885	78184	69174
64175	59986	34202	25358	42604	48942
268097	242489	174750	166084	235365	187170
5064	43133	35623	43733	77493	53499
17357	62419	58133	108787	162251	75463
17033	13303	25657	8737	44250	35761
19752	5252	40954	18802	25289	39961
9274	4104	12104	17913	12183	9634
28438	36250	38900	33114	37857	29946
1509	3971	21955	1014	12141	3079
58890	45333	324813	125359	-25055	19791
251856	511434	474388	380823	214715	315984

2020	2021	2022	2023
38270	46441	74606	64227
29123	59125	49985	47745
253096	344075	190204	42728
19369	98013	109575	8803
176781	102149	62729	19515
-17050	24902	62728	42020
62585	35027	48005	19984
8765	22060	25045	15178
31524	35406	39110	30200
1621	23112	28055	12319
157186	5056	44898	-89439
137066	475805	408982	348784