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The Impact of a Unified Currency in Latin America on the FOREX Market: A Comparative Analysis with the Euro

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Introduction:

We live in a world with a population of 8 billion people[1], spread across 7 continents, 195 countries, and 7106 languages[2]. Each time the world wants to be more interconnected to increase business transactions, create new relationships, and generate economic growth, many treaties and organizations have been conceived, allowing countries to make more trades and have the best possible relationship between them.

This paper provides an in-depth analysis of the FOREX market and give an overall view of the monetary regimes that Europe and Latin America adopt in the 2000's. Also, analyze their interventions in the FOREX market under their new monetary regime. Moreover, the paper delivers the potential implication of creating a unique currency for South America and how would affect the foreign exchange market.

The paper is structured in three different chapter, each beginning historical overview followed by a of each system development.

In the first chapter we are focusing on the Forex market describing what moves the currency market and the risk and benefit of investing in the Foreign Exchange Market. Chapter two discuss the whole path of the euro implementation, and how the European countries were already prepared to engage in that big change. Also, the impact that had in the international economy, more specifically in the FOREX market. In the final chapter, we describe two of the main monetary system in Latin America, the floating exchange rate, and the full dollarization, focusing on Brazil and Ecuador. The paper also delivers the prospect and challenge of implementing a supranational currency in Latin America, highlighting the similarities and the difference that have with the European countries. Finally, is analyzed the current situation of the main currency of the Latin America FOREX market; the Mexican Pesos and then how a single currency would affect the foreign exchange market.

Overall, this paper aims are to provide a comprehensive understanding of the FOREX market and the Euro's impact on it, as well as the potential for a single currency in South America.

[1] Worldometers. (n.d.). World Population. Retrieved from https://www.worldometers.info/world-population/

[2] Lingua.edu. (2019, November 20). Quante lingue ci sono nel mondo? Retrieved April 26, 2023, from https://lingua.edu/quante-lingue-ci-sono-nel-mondo/

Globalization has significantly expanded since the creation of the internet in 1989 and the innovation of the personal computer in 1971, allowing the growth of the FOREX market. 25 years ago, all trade was done through the telephone, and only big institutions had access to invest. But nowadays, the telephone has become obsolete, and electronic platforms to trade replace calls. In recent years, cell phones have been used only for a few numbers of transactions. This allows the decrease in transaction costs and the development of new strategies, such as high-frequency trading. This makes any trader provide liquidity to the market, making an ambiguous distinction between the dealers and traditional investors. Major dealing banks have started to put significant amounts of money into improving software and hardware to continue to be competitive.

Achieving the consolidation of the European Union in 1993 and the creation of a unique electronic currency in 1999, which then entered physical circulation in 2002, allowed the euro to become one of the strongest currencies in the world for financial institutions and the daily life of a person. Being a European citizen is a privilege, having access to free trade between countries, the opportunity to travel, make transactions without additional cost, and given the possibility for their citizens to live, study, and work across different cultures, economies, and mindsets. The European Union is the world's biggest single market, having 14 percent of the global GDP[3]. The world is not stopping its improvements; they are looking forward to discovering new technologies, such as artificial intelligence and new treaties.

Drawing inspiration from the success of the European Union, Argentina and Brazil have recently engaged in discussions to create a unique currency for South American countries[4] to boost the trade of developing countries and reduce dependence on the US dollar. This proposed union would achieve 5 percent of the global GDP.

We cannot overestimate the importance of the exchange rate in the world and countries' economies. It affects a wide range of sectors in each economy, such as inflation altered by the cost of imports and commodity prices, international capital flows based on the risk and return assets, and finally, output and employment influenced by the real exchange rate. The European Union knew how to play the

[3] European Union. (n.d.). Key facts and figures: Economy. Retrieved from https://european-union.europa.eu/principles-countries-history/key-facts-and-figures/economy_en

[4] Financial Times. (2021, May 26). Amazon to buy MGM in $8.45bn deal. Retrieved from https://www.ft.com/content/5347d263-7f24-4966-8da4-79485d1287b4

game because they created stability among all the countries members, eliminating all the costs made by the exchange rate caused by fluctuations of different currencies. This economic stability makes European countries a more attractive and secure place to invest in due to the lower risk, lower cost, and improvement in transparency in the transaction. Looking forward, if a union is formed by the countries located in South America, it could improve the economies of each country by promoting economic stability and creating the largest or the second-largest single market in the world.

Chapter 1: The FOREX market

Evolution of the monetary system:

Nowadays we are surrounded by technology, human beings cannot live without their smartphone, in the last decade we have become slaves to electronics. The trading markets have undergone numerous major shifts. Firstly we will introduce, the Barter System that was set up in the old time when society didn't have the concept and idea of money, the only way to obtain goods was through the exchange of personal goods or services that the family had in his possession to exchange for another good or service, normally those good must have the same value and if not there were exchange by a larger quantity of the exchangeable good, for example during a period the salt was one of the most valuable minerals because it was indispensable for the cooking so it was exchanged for gold. We can see that from the year 6000 BC society already had the notion of exchanging goods[5].

As society progressed, the concept of money was developed and the Barter System was replaced by a monetary system, but the basic principle of exchanging goods and services of equal value remains a fundamental aspect of economic exchange. In 1819 the United Kingdom formally adopted the Gold Standard[6] and then in 1834 United States start to use it, this system start to be very popular around the world and a large number of countries started to use the gold exchange standard as Russia, Japan, Austria-Hungary, the Netherlands, most Scandinavian countries, Canada, South Africa, Australia, New Zealand, India, and the Philippines, this period was between 1870 and 1914 just before the beginning of the first world war because, in a period of war, it was difficult to maintain the parity commodity and currency. After the Gold Standard period, the Bretton Woods Monetary Conference[7] was convened to discuss and analyze the world's economic situation post World War II. The five world powers gathered intending to establish a new international monetary system that would provide economic stability. In the conference, it was established that the US dollar will be pegged to gold with a fixed rate of $35, alongside other countries' currencies that were pegged to the US dollar at a fixed exchange rate. In this way, the US dollar became the dominant currency in the world. To ensure the

[5] The Economic Times. (n.d.). Barter. Retrieved from https://economictimes.indiatimes.com/definition/barter
[6] World Gold Council. (n.d.). The Classical Gold Standard. Retrieved from https://www.gold.org/history-gold/the-classical-gold-standard
[7] The Balance. (2022, February 2). The Bretton Woods System and the 1944 Agreement. Retrieved from https://www.thebalancemoney.com/bretton-woods-system-and-1944-agreement-3306133

correct use of this new system these five-world power decided to create two new institutions: the World Bank[8] whose main role is to help emerging countries to go out of poverty and the International Monetary Fund (IMF)[9] that have a role backing the economic policies to have a financial stability and monetary cooperation among its 190 member countries. After the Bretton Woods conference, the United State had more money moving out than coming in, raising preoccupation about inflation. The United States government needed to find a balance between the global demand and the amount of dollars supplied, yet printing too much money would have cause the dollar's value to fall. This raised concerns about the United States' capacity to keep the currency on a gold standard, President Nixon ended the fixed exchange rate regime in 1971 when he discontinued pegging the dollar to gold. Then the system called the free-floating exchange-rate system was implemented where the currency does not depend on a commodity, but it depends on how the market moves, meaning that the currencies depend on the demand and the supply of the consumers. In the economy, we have 2 timelines the short run and the long run, when we see a drastic change in the short run it means that an unforeseen event has impact in the country either positively or negatively and in the long run, brings a positive aspect to the countries, will allow achieving stability and growth.

The floating exchange rate regime has positive aspects as the flexibility that gives the country in adjusting to external shocks and market conditions but also presents some challenges as currency variation and exchange rate fluctuations which affect international trade and investment flows.

The distinction between currency and money

Dealing with the currency concept, we accept that a physical or abstract object has a value that can be exchanged for another asset or service in exchange. Currently, we have a wide number of currencies such as national currencies, virtual coins, and knowledge. In essence, the currency is a medium of exchange that is an intermediary tool that helps individuals or institutions to do trade between them.

In the concept of the FOREX market, we will not take into consideration the money, we will take into consideration the currency of each country where the value changes constantly depending on the demand and the supply of the currency. Meanwhile, the term money refers to a unit of account that is

[8] World Bank. (n.d.). What We Do. Retrieved from https://www.worldbank.org/en/what-we-do

[9] International Monetary Fund. (n.d.). IMF at a Glance. Retrieved from https://www.imf.org/en/About/Factsheets/IMF-at-a-Glance

used over time to exchange goods, but the value of the money will always be the same, what changes is the currency value.

What moves the currency market?

The currency value is very uncertain since it depends on a wide number of factors, the main one is the supply and the demand that is available in the market. Secondly, as we are dealing with the value of a specific country currency the political and economic situation has a big relevance in the exchange rates, as the economic policies, inflation, balance payments, commodity prices and unemployment, so the fundamentals factors of the country are essential to forecast the future movements of the exchange rate. Finally, the most unpredictable are the natural catastrophes and terroristic attacks.
Firstly, the value of a currency is directly connected to the availability of the commodity if the currency has a high supply the value of the currency will be low; if the supply decreases the currency appreciates. The demand works oppositely if there is a high demand for the currency it appreciates if there is a low demand if it is depreciated.

Further, in the economic and political situation of the country we will provide you with a simple example to make you understand better how the exchange rate can be affected by economic circumstances. The Japanese economy heavily relies to the production and exports of goods which require the supply of oil. Lately, there has been a drastic increase in the oil and shipping price, forcing the Japanese industry to rise prices which has resulted in reduced demand from consumers. Moreover, Japan purchases the oil in US dollar and not in yen, which means as the oil becoming more and more expensive it is needed to issue more yen to carry out payments, making a depreciation of the currency value, making the yen less attractive for the people and institution. We can see how the yen value decreases due to the high price of oil that then affects the supply a demand of the currency.

To sum up, a person that invests in the foreign market needs to have an overview of 4 main factors: economic, financial, political and crises and that can be done by being informed through news, governments reports, newsletter, and analysts.

Standardization of financial data and currency pairs

Standardized financial data is essential to have efficient transactions and easily report obligations. To this end, the International Organization for Standardization (ISO)[10] created the ISO 4217:2015, a government document that establishes a code composed of three letters that are the equivalent of three numeric digits that represent the currencies worldwide. These codes are always used in the foreign exchange market in the form of currency pairs that facilitate the understanding of which countries are doing the transaction. The first three digits that will be in the currency pairs will be the base currency that corresponds to the home country and then we will have the quote currency that refers to the foreign country. The currency pairs are used to know how much of the quote currency you need to buy for a unit of the base currency. For example, on February 24 of 2023, the exchange rate of the EUR/USD currency pairs was $1.0585[11].

Three types of currency pairs in the FOREX Market

Beyond the 30 currencies traded in the FOREX market there are 3 different currency pairs: major pairs, cross pairs, and exotic pairs. The major pairs correspond to the currencies of the most developed economies and more advanced financial system, one of their main characteristics is that have a high liquidity and are the pair currencies more traded in the foreign market. Then we have the cross pairs, the pairs that doesn't involve the US dollar in the exchange, these kinds of pairs solve a big issue face by the FOREX market, before the creation of the cross pairs the investors were forced to first change the home currency to dollars and then change the dollars to the foreign currency that the investor wanted. Finally, the currencies that have a low liquidity and a limited number of trades are called exotic pairs, that can be restricted based on the amount of transaction or government restriction. For example, as a Colombian traveling to another third-world country as Maroc, we must change Colombians pesos to US-dollars in the home country to be able to change US dollars to dirham in Maroc.

[10] International Organization for Standardization. (2015). ISO 9001:2015 - Quality management systems -- Requirements. Retrieved from https://www.iso.org/standard/64758.html

[11] Exchange Rates. (2023). EUR/USD spot exchange rates history. Retrieved from https://www.exchangerates.org.uk/EUR-USD-spot-exchange-rates-history-2023.html

Vehicle currency:

Throughout history, the world has had different predominant currencies to make international trade and financial transactions easier. In the 17^{th} and 18^{th} was the Dutch guilder, then it was the British pound till before World War II and now the predominant currency is the US dollar. Nowadays, many transactions have one side of the transaction the US dollar.

When countries do trade between themselves, they can use their own currency to do the transaction, but currently the world has 180 currencies so using small or less common currencies would be time-consuming and more expensive. The usage of a vehicle currency is useful when two small nations participate in international commerce. This suggests that both the home country and the foreign countries exchange their local currencies for US dollars, increasing the efficiency of trade and concentrating liquidity in a smaller number of currency pairs. As a result, the U.S. dollar assumes the role of intermediary currency. When the vehicle currency is established among the countries it creates a natural monopoly where the other currencies take a secondary position in the market.

Moreover, it is always beneficial for both countries to do the trade using the vehicle currency. For example, if we want to do a trade from Colombian pesos (COP) to Australian dollars (AUD), there will involve two trades, one from Colombian pesos to US dollars and then from US dollars to Australian dollars. The world is based on four main currencies called “the majors” or “G4” will be: the US dollar, euro, Japanese yen, and the UK pound.

As we saw before the international currency over the years has been changing, so the vehicle currency can also continue change, nowadays there is the debate that maybe the euro will become the new international currency, taking into consideration that 46 percent of the trades are done with the euro.

Overview of the Foreign Exchange Market role in the capital market

The foreign exchange market, also known as FOREX or FX, has the key role of trading different currencies around the world with the participation of various market actors.

The FOREX market is a component of the capital markets that make up the financial market. We will give a short description of the financial market; it is divided into two main parts, the money market, and the capital markets, and finally subdivided by the primary and secondary markets.

The primary markets are a one-time event where the firms or governments create the securities for the first time to finance future projects or activities, such as the Initial Public Offering (IPO) which is the process of selling shares of a private company. The institutions have two different ways to issue securities by debt which will be by issuing a bond to the public or by issuing equity which will be by selling interest of the company in form of stocks.

When the IPO is sold to the public through the primary market is when the secondary market enters to have a main role, which comes to be when all stocks and bonds are traded to the public. The main actors in trading securities are the institutional investors which can be companies, individuals, or organizations, that usually have a large knowledge about the stock market rather than a common person. This financial institution or individual must act on behalf of the best interests of his clients, searching to gain the highest profit with their investment and make informed decisions on company boards. The secondary market traded a range of financial products such as equity securities, debt securities, derivatives, and foreign exchange, the price of these financial tools is based on the demand and supply of the market, and at that point, the companies that issue the IPO have any relevance in the price of the securities.

FOREX market vs. stock market

Lately the investor has preferred to invest in the FOREX market rather than in the stock market, because of the numerous advantages that the foreign market gives to its participants. In the stock market, each time that the investor wants to sell or to buy a share, they are forced to pay a commission instead with FOREX market no. Another criterion is that the stock market is open much less hours in the week than the FOREX it is open only from 9:30 am to 4 pm from Monday to Friday, taking a way the opportunity to the investors to enter in a new position at any time he wants. A very common activity use in the FOREX market is to short currencies, meaning that the investor is hoping that the currency will decrease in the future, this activity is not like by the stock investor due to the high risk and that it is much more complex and costly by the cause of that investors must do much more steps to short sell a stock such as borrowing the stock, selling it, and then buying it back to return it to lender. Moreover, the stock market has a wide quantity of shares offer to the public, in the moment that an investor wants to buy or sell a stock must be aware about the situation of the company meaning that if they have a differentiate portfolio must be informed about each company. On the contrary, with the FOREX market the investor can concentrated only in the major currency pairs. Finally, it also depends in which kind of investment the buyer is seeking for because if the investor wants an investment in a short return is more convenient to trade currencies that change frequently but if the investor wants a long run investment is better to invest in stocks.

Overview of the Foreign Exchange Market and Global Trading centers:

The FOREX market is the largest in the world, in 2022 reach a daily turnover of $7.5 trillion per day[12], we know that the annual global GDP is $96.1 trillion in 2021 meaning that the daily global GDP is $0.26 trillion per day, so at the end, the FX market is 30 times bigger than the global GDP[13]. Also, we must take into consideration that the FOREX market is the fastest-growing market compared to the others, because of the wide range of actors that invest a large quantity of money like governments, businesses, individuals, and large companies. One primary factor that makes the FOREX market the largest and fastest growing market is that it is a decentralized exchange where it is easier to trade securities. Unlike the central exchange, which has a set of regulations for the trade such as the trading hours, minimum trade sizes, and trading fee, also the securities traded in those central exchanges must be standardized. Because of that the FOREX market, by being an OTC (over the counter) where agents buy and sell currencies, makes it simple to invest. The foreign exchange market is connected through the telephone and computer creating an electronic trading platform, allowing it to be open 24 hours a day, five days a week, except for the weekends, which closes Friday at 5 pm and reopens Saturday at 5 pm (New York local time).

Based on trading data, London is the biggest financial market, with more assets than New York, because of its strategic location. The strategic location of the London Stock Exchange (LSE) allows it to negotiate with both markets the Asian and the American markets since when LSE opens the Asian market is still open and when the New York Stock Exchange (NYSE) opens the LSE is still open, as shown in table 1. This matter leaves the LSE with a competitive advantage over the NYSE, making the LSE a more attractive market to invest in.

[12] Bank for International Settlements. (2022). Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2022: Preliminary global results (Table A.1). Retrieved from https://www.bis.org/statistics/rpfx22_fx.htm#:~:text=Highlights,up%20from%2049%25%20in%202019

[13] Bank for International Settlements. (2022). Global liquidity: developments and prospects. BIS Quarterly Review, December 2022. Retrieved from https://www.bis.org/publ/qtrpdf/r_qt2212f.htm

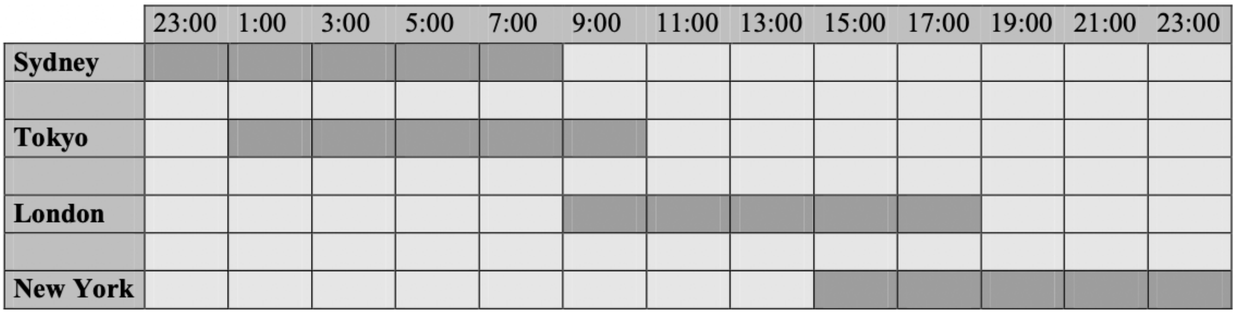

Figure 1: Trading sessions
Sources: Marian Hockicko, time GMT +1, Forex Market Hours
Year: 2014

According to the following table, we can state that London has more than one-third of the market, followed by New York having almost one-fifth, then with one-quarter of the market we have Tokyo, Hong Kong, Sydney, and Singapore, and finally, with the lower percentage we have Latin America, Middle East, and Africa with less than 1 percent globally. These results are based on the following table:

Country	1995	1998	2001	2004	2007	2010
United Kingdom	29.3	32.6	32.0	32.0	34.6	36.7
United States	16.3	18.3	16.1	19.1	17.4	17.9
Japan	10.3	7.0	9.0	8.0	5.8	6.2
Singapore	6.6	6.9	6.1	5.1	5.6	5.3
Switzerland	5.4	4.4	4.5	3.3	5.9	5.2
Hong Kong SAR	5.6	3.8	4.0	4.1	4.2	4.7
Australia	2.5	2.3	3.2	4.1	4.1	3.8
France	3.8	3.7	2.9	2.6	3.0	3.0
Denmark	1.9	1.3	1.4	1.6	2.1	2.4
Germany	4.8	4.7	5.4	4.6	2.4	2.1
Canada	1.9	1.8	2.6	2.3	1.5	1.2
Sweden	1.2	0.8	1.5	1.2	1.0	0.9
Korea	—	0.2	0.6	0.8	0.8	0.9
Russia	—	0.3	0.6	1.1	1.2	0.8
Luxembourg	1.2	1.1	0.8	0.6	1.0	0.7
Belgium	1.7	1.3	0.6	0.8	1.2	0.6
Finland	0.3	0.2	0.1	0.1	0.2	0.6
Spain	1.1	1.0	0.5	0.5	0.4	0.6
Italy	1.5	1.4	1.0	0.9	0.9	0.6
India	—	0.1	0.2	0.3	0.9	0.5

Note: Country percentage shares of daily average global total in April. Country volumes are adjusted for local interdealer double-counting but not cross border (i.e., "net–gross" basis according to terminology of the BIS Triennial survey). Countries are sorted based on 2010 market share.
Source: BIS Triennial FX Survey.

Figure 2: Geographical Distribution of Global Foreign Exchange Market Turnover (%)
Sources: Handbook of Exchange Rates, Jessica James, Ian W. Marsh, Lucio Sarno
Year: 2016

The role of different actors in the Foreign Exchange Market

The financial market has been affected by new technologies, one of the markets where the technologies impacted the most was the FOREX market, it has experienced considerable growth in the last years because primarily due to the new electronic platforms that simplify connectivity and consequently allow efficient trading. We can observe that the daily turnover in the FX market passes from $1.210 billion[14] to $6.6 trillion[15] between 2001 and 2019. Consequently, investors have started to consider more the FOREX market fluctuation because it has a significant impact on the equity of a bond market.

In the FOREX market, we can find a wide number of actors, such as the commercial and investment banks that invest large amounts of money on behalf of their consumers that are involved in international transactions. These banks are considered market makers in the FOREX market because of the large amount that they invest. Commercial banks are used by individuals in their daily life depositing their salaries and having their savings there, and by the small companies that rely on their liquidity to the commercial banks. These banks provide different services to their customers such as loans for different purposes, including cars, houses, and education. The money that the bank lends to their clients is the money that the other clients have deposited in the past, in this way the bank is making a profit by charging interest rates on loans, and with the additional fees paid by customers when they use the bank's services. In contrast to commercial banks, investment banks have a role focus in the interactions between institutions, an investment bank is divided into two: the advisory and the trading division, these two divisions must have a clear separation between them because they may have a conflict of interest. Investment banks interact in the primary market when a company issues an IPO and needs advisory services and an institution that connects the company with a buyer of their securities. The key aspect of an investment bank is that they need to have a lot of connections in the financial world to have higher profitability through increased deal flow and market access.

[14] Bank for International Settlements. (2001). The Role of Central Bank Money in Payment Systems. BIS Quarterly Review, December 2001. Retrieved from https://www.bis.org/publ/r_qt0112e.pdf

[15] Bank for International Settlements. (2019). Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2019: Preliminary global results (Table A.1). Retrieved from https://www.bis.org/statistics/rpfx19_fx.htm#:~:text=Highlights,%245.1%20trillion%20three%20years%20earlier.&text=Growth%20of%20FX%20derivatives%20trading,outpaced%20that%20of%20spot%20trading.

Likewise, the government, more specifically the central bank, holds an important position. The central bank is one of the most important financial institutions of a country because of its main responsibilities as issuing money, monitoring closely the financial situation of the country to ensure a stable baking system, acting as a lender to the government or commercial bank when is necessary and finally to establish monetary policies as setting the interest rate to have a control in the inflation of the country. The interest rate that the central bank will set in the future, will influence the behavior of the investor because if the central bank increases the interest rate it means that the country is having growth making it an attractive option for investors. On the other hand, if the central bank lowers the interest rate, it means that the country is not doing well economically and needs to encourage companies and individuals to move the economy by borrowing. Another critical role that the central bank plays is that when there are periods of high volatility in the currencies it must intervene by buying or selling foreign currencies to regulate the supply and demand to stabilize the currency's value.

Another main actor in the FOREX market are the multinational companies that use the FOREX market to hedge the risk now of investing in a foreign country, to offset the risk that the currency may have with fluctuation in the future.

The role of interbank and electronic brokers[16]:

As we say before the FX market is a decentralized market that is based in an OTC, as there are no unique market makers it is impossible to have a monopoly because of the fact if one market maker decides to increase prices with a high difference between the other market makers the customers will decide to switch to the cheapest market maker, driving the one that increases prices to decrease again prices to compete with the other one. We can see that it is a vastly different system compared to the New York Stock Exchange, which is a centralized market, where the prices can only have one bid-ask price at any given time since all the buyers and sellers are trading in a single place.

Thanks to the decentralized system of the FOREX market there was the creation of a hierarchy of participants. The ones that are higher in the pyramid are the ones that have the highest credit access and the highest number of transactions.

[16] Lien, K. (2016). Day Trading and Swing Trading the Currency Market: Technical and Fundamental Strategies to Profit from Market Moves (3rd ed.). John Wiley & Sons.

In 1970 banking institutions established trading desks with the main goal of facilitating the transaction between major clients. They are called interbank and make reference to the electronic trading arrangement enclosed by the banks, institutions, and currency dealers, they are placed on the top of the pyramid among the main actors of the FOREX market. The interbank is a subpart of the interdealer market that does not require any physical location, it is an international network of dealers that is used by banks and financial institutions to do trades. The interbank market's main role is a credit-approved system, where it establishes a relationship between two financial institutions allowing them to lend and borrow money at a low-interest rate because as they are dealing with financial institutions the risk of not having a return in money is much lower than when they lend money to individuals or business.

The interbank market is very important for the FOREX market because it is used by brokers or electronic brokers, is where they can take a currency and then sell it to the traders at a higher price making a profit in the difference, as I say before the interbank is mostly used by banks and financial institution so they trade a large amount of money putting the interbank market in the first place. When we talk about electronic brokers, we do reference EBS and Reuters, two big trading platforms. EBS is part of the CME group[17] which is one of the largest derivatives marketplaces in the world that helps its clients to manage risk the best way. On the other hand, we have Reuters which is owned by Thomson Reuters[18] which is one of the main companies to give information-based tools to professionals and news focused on legal, relation, and tax matters. So in the end, we can say that the two main electronic brokers have the same goal but direct to a different target market, as the CME group is more direct to the institutional investor, which are companies that invest on behalf of other people but they have much more experience and knowledge about the financial market so they know better how to analyze and invest in the financial market, rather than Reuters is more direct to retail clients or companies that want to have some investments but the main business of them are not the investments in the FOREX market.

Now with the evolution of new technologies, the FOREX market is not only composed of the big banks, but now also retail clients can invest almost in the same condition as the banks with similar pricing and execution, but that is also thanks to the creation of new online trading platforms where the more average traders can use.

[17] CME Group. (n.d.). About us. Retrieved April 26, 2023, from https://www.cmegroup.com/company/about-us.html
[18] Thomson Reuters. (n.d.). About us. Retrieved April 26, 2023, from https://www.thomsonreuters.com/en/about-us.html

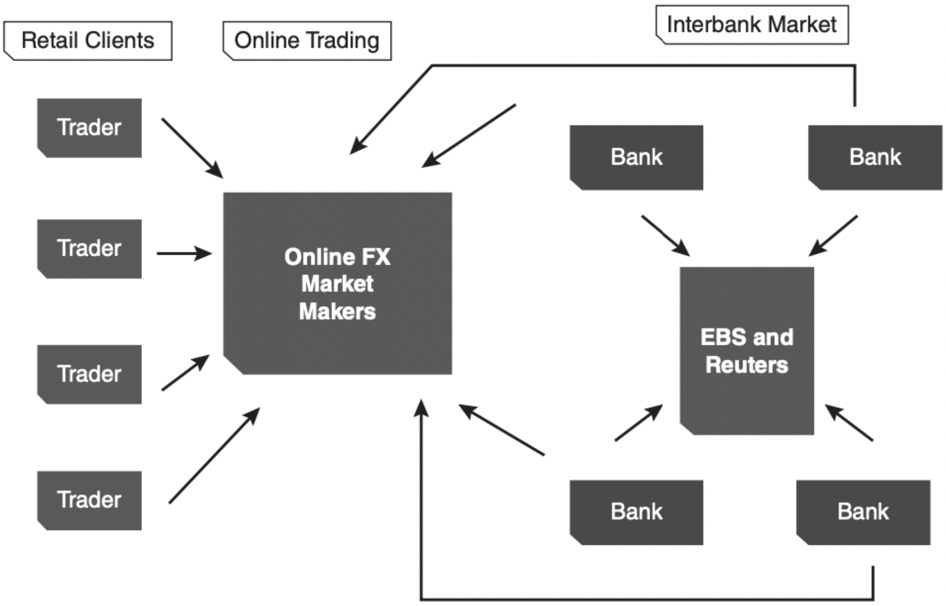

Figure 3: Decentralized Market Structure
Sources: Day Trading and Swing Trading the Currency market, Third Edition, Kathy Lien
Year: 2016

Benefits and risk of investing in the Foreign Exchange Market:

The FOREX market is characterized by the considerable number of benefits that it offers to its investor but also by the significant risk due to the volatility of the currency exchange rate. Despite this high exposure, investors are driven to maximize their earnings by putting a high leverage on their investment. Moreover, the foreign market does not have any fees coming from the government the only fees that the investor may pay will be the ones coming from the electronic communication networks (ECNs), but they are usually lower compared to the governmental fee, so at the end, the FX market stay as a market with a low commission for their investors. On the other hand, the foreign market has the highest liquidity among the financial markets with around $7.5 trillion[19] in daily transactions. Thanks to the high liquidity, brokers are enabled to execute huge trades that are ordered by institutional investors. Furthermore, the FOREX market allows investors to select their leverage

[19] BIS. (2022). The foreign exchange market in 2021 and the first quarter of 2022. Quarterly Review, December, 1-25. Retrieved April 26, 2023, from https://www.bis.org/publ/qtrpdf/r_qt2212f.htm

ratio, allowing them to make potentially huge returns but also exposing them to the danger of significant losses. Leverage ratios commonly vary between 10:1 and 400:1.
The foreign market can trade 30 pairs, of which the most often traded pairs of currencies are involved. the currency of the United States, European Union, Switzerland, Great Britain, Japan, Canada, Australia, and New Zealand.
Another benefit of the FOREX market is that insider trading is not a concern since the vast range of factors that influence currency swings make it hard for any company or person to predict them. Overall, the FOREX market has many benefits for investors, but for successful investment results, thorough analysis and risk management are needed.

Different derivatives used in the Foreign Exchange Market:

The actors in the Global FX Market use different instruments to avoid risk. These tools are called derivatives that are used to arbitrage or hedge the exchange rate that can be present in the FOREX transaction. We can identify five main instruments: spot contracts, forward contracts, options, and FX swaps.

Spot contracts: when there is a purchase and sale of currencies, securities, and commodities at the exact moment meaning that is an immediate trade. The major features of the spot contract are that the transaction is only done with cash and that the delivery is immediate, these characteristics make the spot contract a way to finish the arrangement in the least possible time.

Forward contracts: a contract that will establish a specific future date and a fixed specific rate to do the trade, to avoid the possible currency floating risk that can present the market in the future, the date may be long-term and can be over 12 months. In the case that the client does a forward contract, and the price of the asset increases the buyer can buy the asset at the price that we establish in a forward contract, but you can also have losses if the price of the asset decreases, and you establish a higher price in the past you must buy at the rate that you establish in the forward contract. The forward contract is an obligation, you must buy the security.

Options: have the same role as the forward contract but the significant difference is that the options give the right to purchase but not the responsibility. So, in the case that it is not convenient to buy or sell the asset the actor cannot exercise the options. When we are dealing with the options there are two parties, the options holder, is the one that purchases the options and then we have the option writer that is the one that issues the option. In the options we have 2 key attributes:

- Call option: is the commitment to buy a specific amount of asset from the option writer at a specific settle price.
- Put option: is the commitment to sell a specific amount of asset from the option writer at a specific settle price.

Futures: is a standardized contract that is traded in organized exchanges, the goal of this contract is the same as the future where there is established a date and fixed rate to buy the asset in the future. The futures will have a lower risk of default than the forward contracts because there is the presence of organized exchanges that make sure that the seller and the buyer follow the agreement.

FX Swaps: an agreement between two institutions that they exchange their cash or revenues from any assets or liabilities, in a specific period. There are several types of swaps:

- Interest rate swaps: that is when two agencies exchange their interest rate. They can exchange from a fixed to a floating or from a floating fixed to pay the debts.
- Commodity swaps: when two agencies agree to exchange cash flow for a commodity. They establish a fixed price, and the commodity will always be provided by the interval of time established.
- Equity swaps: a contract that is based on the price of the shares, and it consists in exchange for the financial benefits that the shares of the company have. In other words, it changes the way that you will receive the earnings from the shares.
- Currency swap: an agreement that allows institutions to exchange a specific amount of money for another currency. This is frequently used by multinational companies when they need to ask for a loan in a foreign country and being a home country, you will have a lower interest rate. So, in this case, it will be used as a currency swap.

Chapter 2: Euro history

The Path to Euro

In the decade of 1985-1984, the Japanese and the European economy more specifically Germany were growing exponentially and becoming each time more integrated between them, allowing the creation of a tripolar constellation of currencies with the US dollar the international currency.
During that period, financial markets were controlled by 3 main currencies: the US-dollar with 83 percent of the total market, then the Deutsche mark with 37 percent, and finally the Yen having 24 percent. As each transaction involves two currencies, the total value of all the transactions sums up to 200 percent. We can highlight that 25 percent of the industrial exports were made with the Deutsche mark, making the most powerful currency in Europe, but not taking out the leading position to the US dollar that controls half of the exports of industrial countries[20].

Prior to the introduction of the euro in 1999, each European had its own currency with a different value, creating a higher volatility in the European Market. The principles currencies used were the German Mark and the French Franc, but the leading economy in Europe was Germany making the German mark a key currency for the Exchange Rate Mechanisms (ERM) of the European Monetary System (EMS), because of the low inflation. Europe over the years becomes much more integrated, making the German mark the vehicle currency between European countries rather than the US dollar. Globally, the German Mark was considered the European voice due to the important influence that had in the EMS.
At the same time, Italy was facing a large budget deficit making it lose competitiveness in the European market and world markets. In the case of Spain and Portugal was that they were dealing with a high inflation rate within the range established by the European Currency Unit (ECU), so this situation raises concerns if Spain and Portugal should stay in the ERM.

[20] International Monetary Fund. (2015, September 28). IMF Executive Board Approves the Inclusion of the Chinese Renminbi in the SDR Basket. Retrieved April 26, 2023, from https://www.imf.org/en/News/Articles/2015/09/28/04/53/spmds9518#note1

The EMS and its role in managing currency fluctuations in Europe

The European Monetary System (EMS)[21] was established right after the collapse of the Bretton Woods Agreement in 1979, to have closer control of the monetary policies for the European currencies before the creation of the euro. The EMS was created to stabilize inflation and stop large exchange rate fluctuations, seeking the goal of having better international trade. The currency fluctuation was regulated by the Exchange Rate Mechanism (ERM)[22], the leading role of the ERM was to set up a fixed exchange rate peg to the average of the value of the 12 European countries, this was called the European Currency Unit (ECU)[23] to promote the integration between them. Not all the 12 countries had the same weight to do the average, the countries with a larger economy will have more influence and the smaller less influence, in this way the volatility of the currencies were control by the ECU that would only allow to change the value of the currency by 2.25 percent up or down[24]. The ERM system created two distinct groups of currencies: the 23 countries that have their currency peg to the US dollar and the countries that are linked to the EMS, that at the end reach the sum of 25 countries because of the African countries pegged to the French franc.

Euro implementation in the financial market

Understanding the introduction of the euro

Even after 24 years after the creation of the euro, some people continue to ask why the euro was created and if it was a good strategy for the European continent. In this case, we will focus on 3 main points: the economic arguments, political factors, and some issues that were unresolved in 1990.

Europe has the first energy crisis between 1973 and 1974 that leave the European countries in an awful economic situation with high inflation and low growth for more than one decade. In response, Europe retakes the idea of integration between European countries to achieve a single market with

[21] Eurostat. (n.d.). European Monetary System (EMS). In Statistics Explained. Retrieved April 26, 2023, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:European_Monetary_System_(EMS)
[22] Eurostat. (n.d.). Exchange rate mechanism (ERM). In Statistics Explained. Retrieved April 26, 2023, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Exchange_rate_mechanism_(ERM)
[23] Eurostat. (n.d.). European Currency Unit (ECU). In Statistics Explained. Retrieved April 26, 2023, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:European_currency_unit_(ECU)
[24] International Monetary Fund. (n.d.). IMF Issues and Notes. Retrieved April 26, 2023, from https://www.imf.org/external/pubs/ft/issues13/

free trade between the countries. However, they continue to use their own currency. With the creation of the EMS the European countries established a "fixed" exchange rate system, but this system could not undertake the major economic challenge posed by the change in oil and US-dollar prices, which had a significant role in countries' economies. For example, when the dollar is weak the German mark would drastically increase in value because of the situation of the US dollar and vice versa, but if the German mark is regulated by the ECU the rise in value would not be enabled to rise exponentially because of the 2.25 percent constraint.

To sum up, the 3 main reasons to create the euro were:

- Firstly, the establishment of a single European market that was essential and a unique currency for the whole European continent that was seen as a key complementary asset to achieve this goal. In this way the barriers between the neighbors would be removed.
- Creating a more stable financial system that would not be affected by external events, making the European economy less volatile.
- To have a free flow of money in the European Union, that will allow a decrease in the transaction cost.

This idea of a single currency was very convenient for countries that had economic issues as Spain and Portugal because it would help them to have a more stable economy. On the other hand, we have countries that have a strong economy as Germany that represent globally the European market, however Germans were becoming less comfortable with the US criticism, so they were open to share the European leadership with the other European countries. Another important economy was France which had a considerable share of the global reserve and a sizeable percentage of the exports of industrial countries, which also agree to establish a single currency in the European continent. Without the approval of France and Germany would not be possible the creation of the euro since they were biggest economies.

The growing impact and importance of the Euro in the international economy:

Despite being a relatively young currency, the euro has already had an impact on the international economy. Its introduction to the world economy was met with great force, thanks to the fact that it succeeded two of the most important currencies globally. This has allowed the euro to be used as reserve currency, as well as an anchor for exchange rate policies. Over the years the euro has been growing, almost achieving the level of significance of the US-dollar, both in terms of its value and terms of influence in the financial markets. Since the creation of the euro, borrowers from outside the European Union have trusted much more in the currency, making them use the euro much more to tap the international capital market. Before 1999, the international debt securities that correspond to the market of buying and selling debt securities issued by private and public companies was about 20 percent for the European countries after the creation of the euro it increased by 10 percent. In this way reducing the gap between the euro and the US dollar in the international debt market.

On the 1 January 1999, the euro replace 12 European currencies, and since then international borrowers had another currency to invest in, that is stable and with a high value. With this radical change in the financial market, the investor benefited from high liquidity in euros. This liquidity allowed companies to issue debt securities in euros rather than in US dollar, in this way, a company based in the United State will not only depend on the domestic investor (US-dollar), but they will also have the support of another currency allowing them to take away the dependence in the US-dollar, but also opening the doors to a new market segment located in Europe for the US company.
Doing a focus on the foreign exchange market we can highlight that the percentage of transactions compared to the German mark it is 5 percent higher in 2002 reported by the Bank for International Settlement. On the other hand, if we sum up all the percentages of the transaction of the 12 countries the euro is below, with the 12 countries we arrive at 25 percent of the foreign transaction with the euro we arrive at only 20 percent.

In the last two passages, we can highlight that the debt securities market is increasing drastically but the foreign exchange market is rising slowly. This is due to the externalities present in the market, in the case of the debt securities market the externalities do not have an enormous impact but for the foreign exchange market yes because in the FOREX market, you can find the importance of currency incumbency. Meaning that when a currency is used from a long time ago it is difficult to switch to another, because the financial system has been structured around the initial currency and the individuals are already used to the US-dollar for their transactions. Hence, it is easy to stick to the US-dollar rather than change to the euro. As a result, important factors such as the higher value of the euro and the wide number of important countries that use the euro as the main currency are being overlooked. Moreover, the euro is still taking a big share of the FOREX market. The euro liquidity is continuing to increase, and, in the future, it may become more important than the US dollar because its role outside the eurozone is growing gradually.

Benefits of Euro adoption

Before the creation of the euro, Europe was not integrated between them, unlike the United States and Canada which had a financial market already integrate. The establishment of the euro aimed to unify all European countries under a single currency, eliminating the barriers created by the existence of multiple currencies on the continent.

A single currency improves welfare in distinct aspects, such as encouraging people to invest in various countries to diversify their portfolio and reduce risk, and by promoting high-quality investment. A riskier investment that could increase the growth performance in the long run.

We can start by saying that the euro allows European citizens to diversify their portfolio with purchases outside their home country, this has the name for International Risk Sharing. Having many benefits such as the exchange rate where allows saving in transaction cost in the currency conversion. Now with the common currency, the value of the currency will fluctuate much less because the euro will mitigate the asymmetric shocks among the EU members by diversifying their income source and by adjusting their wealth portfolio.

The implementation of the euro also enables a deep integration between the European countries, which eliminates the exchange rate and increases transparency. A main factor that drives the integration of Europe was the creation of the Internal Market in the European Economic community (EEC) established by the Single European Act in 1986[25] and the financial regulations at the national level. The Internal Market was based on the principle of non-discrimination among the EU citizens meaning that any European citizen can work, study, and live in any European country, this program took away all the barriers between the EU members:

- free movements of goods
- free movements of capital
- free movements of services
- free movements of labor

[25] European Parliament. (n.d.). The internal market: General principles. Retrieved April 26, 2023, from https://www.europarl.europa.eu/factsheets/en/sheet/33/the-internal-market-general-principles#:~:text=The%20Single%20European%20Act%20of,services%20and%20capital%20is%20ensured'.

By eliminating all those barriers, it has made it easier to access information about transactions, financial tools, and market participants, thereby promoting transparency. Consequently, the investors in the moment to invest they will be able to take more informed decisions and decrease financial losses. Overall, the improvement in transparency also helps to have more competition in the market and prevents insider trading, making the financial markets operate more efficiently and effectively.

Euro's reputation and diverse pegs in Europe

Over the years the euro has become prominent in the world economy thanks to the confidence that the European citizens have in their own currency. When European citizens purchase a bond issued by a borrower outside of the European Union, it shows that the home citizens believe in the strength of their economy and makes it more attractive to foreign investors.

Secondly, another principal factor of the euro is that the euro is not only used by the European countries but also by the neighbors' countries, because of a wide variety of factors such as strategic geographical position, political advantage, and trade advantage, as low transaction cost. This has resulted in that a large number of neighboring of the European zone use the euro in diverse ways as:

- Borrowing that is used by the border countries to achieve a long-term plan as the entrance to the European Union.
- Vehicle currency, which is used in the FOREX market to ease the transaction, for the countries near the European zone do not use the international vehicle currency (US dollar) but they use the euro between them rather than the home currency, as it is do by Denmark, Sweden, and Switzerland.
- An anchor currency is when a small or medium currency bases its price and its transaction on a strong currency. This aspect depends on the geographical position. This is used mostly to help trade between nations and keep economic stability. They are different policies that vary from hard peg to managed floating, we will describe the 3 main types:
    - Euro-based currency board is when a country has to have the exact amount of euros as the local currency that will allow them to exchange its home currency for euros at a fixed exchange rate. In this case, the country has given up its independent monetary policy, meaning that the country will not be able to control its own interest rate, the

money supply, and the exchange rate, now it will fully depend on the European Central Bank (ECB).

- Hard peg it does not need to hold the exact amount of home currency and euro, because it is the central bank of the country that intervenes in the FOREX market to keep a fixed exchange rate. Nonetheless, they must maintain a high quantity of euros in reserve to maintain the fixed exchange rate.

The substantial difference between the euro-based currency board and the hard peg is that the countries that are using the hard peg system still have control under their monetary policy, which is limited by the fixed exchange rate of the euro. In the hard peg, they have a minimum control not as in the euro-based currency board that is fully controlled by the ECB.

- The currency basket is when a country determines the value of its own currency based on a basket of currencies that is a group of currencies. The central bank of the country assigns a weight for each currency present in the basket which helps to determine the overall value of the basket and based on that value the central bank would be able to identify the value of its own currency.
- Parallel currency: this is when a country uses the euro and the home currency at the same time in the country, meaning that they have the euro in cash and a deposit form. This system is used to protect their savings in times of economic uncertainty or crisis. It is compared to the Gold Standard done from 1880-1914.

The European Central Bank did a research where they found that about €50 billion are deposited in countries located outside the eurozone as in central, eastern, and southern Europe. Nonetheless, the number of deposits that have the eurozone is much larger, about 80 times higher.

Global use of Euro: beyond Europe's borders

The use of the euro is also present far away from the European continent, due to the geographical location the amount of euros used in those continents is much less than the one used by the neighbors and has some limitations. In this case, we will be focusing on the Asian continent. In Asia, the main cities to trade are Singapore and Tokyo that putting together they achieve 10 percent[26] of transactions

[26] European Central Bank. (2003, October 24). Monetary policy and economic reforms in the euro area. Retrieved from https://www.ecb.europa.eu/press/key/date/2003/html/sp031024.en.html

done in euros, and by putting all the financial centers of Asia the euro achieve 12 percent[27] of all transactions in the FOREX market. However, compared to London, the Asian market is only one quarter in size. We can see that Asian borrowers are not among the largest borrowers of euro. The ones that have the largest quantity of borrowers are London with 43 percent and New York with 17 percent which putting it together achieves more than half of the bond issuance in euros for the non-European market[28].

The transaction that the Asians do in euros is done in the financial center of London which they consider the hub to trade, borrow, and invest in euros. Over the years the euro are gaining a good reputation among investors, now that Hong Kong is striving to become a regional financial center is given the option to their investors to pay in various currencies and one of the main ones is the euro, that allows a higher participation of the euro in the Asian market, making increase the market share. Also, thanks to this positive reputation the Asian investor has purchased many euro-denominated issues on the primary market, achieving to double the amount.

The European Central Bank

The European Central Bank (ECB)[29] is a public institution created the 1 June 1998 in Frankfurt with the scope to control the European Monetary System (EMS). The ECB is at the top of the pyramid of the European System of Central Banks (ESCB) meaning that all the European countries must follow the regulations proved by the ECB and then based on those policies the National Central Bank of each country can manage the home policies. All the 25 countries members of the European Union must be under the ESCB, including the ones that do not have adopted the euro as Denmark.

We must take into consideration that the ESCB has no legal personality so the main actors that exercise the core functions of the Euro system are the ECB and the National Central Banks (NCB). But all the actions made by the ECB and the NCB are controlled by the ESCB to achieve the goals that the institution has for the continent. We can see that in the end, it was not only the creation of the European Central Bank but also the establishment of an entire system that all European countries

[27] European Central Bank. (2003, October 24). Monetary policy and economic reforms in the euro area. Retrieved from https://www.ecb.europa.eu/press/key/date/2003/html/sp031024.en.html

[28] Bank for International Settlements. (2019). BIS Triennial Central Bank Survey: Foreign exchange turnover in April 2019. Retrieved from https://www.bis.org/statistics/rpfx19_fx.htm

[29] Scheller, H. K. (2006). The European Central Bank: History, role and functions (2nd rev. ed.). Frankfurt am Main: European Central Bank.

must follow. Here we will present the main 2 reasons why the ESCB was created as an integrated system, rather than just a central bank:

- A single central bank for the whole European Union would not be acceptable on political grounds.
- Having the NCB, the countries have the possibility to maintain their institutional set-up and infrastructure. Also, to continue to perform activities that are not related to the Euro system.

This system allows European countries to have more freedom but at the same time be regulate by the rules imposed by the ECB. The National Central Bank of each country is the access point to the Euro system. Meaning that as the central banks of each country know the financial and economic needs of the nations, they do a good synergy with the European Central Bank to improve the euro and the continent.

Figure 4: The ESCB and the Eurosystem
Sources: The European Central Bank
Year: 2006

Moreover, the role of the European Central Bank is established by article 9.2 of the Statute of the ESCB[30], that is focused on maintaining price stability by setting key interest rates and controlling the money supply of the European Union. The ECB has three different decision-making bodies that are:

- General Council: that is the advisory sector for the ECB, including all the NBC governors and the president and vice president of the ECB.
- Executive Board: that is responsible to take the day-to-day decision, taken by a president, a vice president, and four other members appointed by the European Council.
- Governing Council: that is charged with setting all the monetary policies for the euro area, it is composed of the executive board and all the governors of the NCB.

The European Central Bank has relied on two main pillars to guide its actions, with a primary focus on combatting inflation and maintaining price stability, aiming for inflation rate below but close to the 2 percent[31]. The inflation rate is measure by the Harmonized Index of Consumer Prices (HCIP) that is a tool use by the European Union that measure the price changes of the services and goods purchased by the European citizens, this index is standardized by all the European members.
The first pillar is the monetary pillar, which involves analyzing the trends and developments in factors such as money supply and credit growth. This is done to assess the risk associated with inflation. The second pillar, followed by the ECB, is the economic pillar. That involves the analysis of economic developments and assumes that higher demand will lead to higher prices in goods and services. Consequently, the European Central Bank implements different monetary policy measures to achieve financial stability and low inflation rate among the European countries, considering the analyses from both pillars.

To sum up, the European Central Bank plays a crucial role in the European monetary system, with the establishment of the European System of Central Bank has allowed European countries to have financial stability and a continuous improvement of the euro through the collaboration of all the EU members.

[30] Scheller, H. K. (2006). The European Central Bank: History, role and functions (2nd rev. ed.). Frankfurt am Main: European Central Bank.
[31] Smith, J. (2021). Title of the document [PDF document]. Retrieved from https://www.europarl.europa.eu/cmsdata/207646/6.%20PE%20642.362%20CEPS%20final_publication%20vs2-original.pdf

Euro and FOREX market

The impact of the Euro on FOREX market transactions

In this section of the paper, we will focus on the comparison between the volume of transactions made before the euro and after the euro. The Bank for International Settlement (BIS) analyzed April 1998 and April 2001[32], which showed that the euro did not enter as a strong currency in the FOREX market as expected. In 1998 the countries that now are members of the European Union achieved 44.3 percent of foreign transactions with $633 billion daily, and in 2001 the euro had a decrease of 7.1 percent in transactions, achieving only $440 billion per day. Consequently, the total spot volume decreased from a daily average of $1430 billion to $1173 billion.

Due to the decline in the volume of transactions involving the euro, the US dollar became the dominant international currency, accounting for 90.4 percent of the foreign market in 2001. In 2001 the euro did not was as popular as the old currencies, because as I said before to take importance in the FOREX market a currency needs to have time to have more liquidity and gain the trust of the investor in the foreign exchange market.

We can see some numbers below in the following table provided by the EBS, which show the number of transactions done by the euro, that decrease drastically. We are considering as predecessor of the euro the German Mark.

	Pre-euro Jan. 98–Dec. 98 (1)	Post-euro Jan.–Dec. 99 (2)	Change (Percentage) (3)	Difference test (*t*-statistics) (4)
Non-euro pairs				
JPY/USD	29.0	25.3	−12.9%	−2.18*
CHF/USD	3.3	5.6	70.8%	4.85**
Euro pairs				
USD/DEM-EUR	45.1	37.9	−17.9%	−2.80**
JPY/DEM-EUR	7.1	4.0	−44.4%	−8.03**
CHF/DEM-EUR	5.3	3.5	−33.7%	−5.65**

Notes: Figures give daily averages in $ billions. We indicate significance at the 5% level (*) and the 1% level (**). *t*-statistics are calculated using White's adjustment for heteroscedasticity.

Figure 5: Pre and post-euro FOREX spot volumes in the Electronic Broking System, EBS
Sources: BIS

[32] Hau, H., Killeen, W., Moore, M., Honohan, P., Franks, J., & Portes, R. (2002). How has the euro changed the foreign exchange market? Economic Policy, 17(34), 149-191. doi:10.1093/epolic/17.34.149

In the table, we can see 5 of the main currency pairs in the world with the change that they had in the volume transaction. Overall, we observe that all the currencies including the euro experienced a decrease in volume.

The impact of the Euro on currency pairs

In the FOREX market one of the most important aspects is the transaction cost, a FOREX dealer charges a much higher spread to customers than other dealers. To determine the prices of sell and buy the dealers must check Reuters which indicates the price of the currency. The transaction price depends on numerous factors, the quote, the dealer and how big the transaction is. Generally, customers with larger transaction can negotiate a better price, with the introduction of the euro, it was easier for the investor to do larger transactions. Moreover, thanks to the introduction of the euro, the cost of exchanging currencies has changed which is known as spread. As a result, it became more expensive to do the exchange for the currency pairs including the euros because the increase in price difference between the buying and selling prices of a currency. On the other hand, for the currency pairs not including the euro the spread decreased.

Euro and parallel markets

Parallel markets refer to when an investor has various similar markets where to invest, meaning that they are close substitutes, for example, Germany and France that before 1999 were parallel markets because they both had a strong economy, geographic proximity, and other similar characteristics. In such cases before the euro, the investor needed to conduct two separate transactions one in German Mark and another in Franc or chose one of the two in the moment to do the transaction, as both were very similar. After the implementation of the euro the parallel markets were eliminated in Europe, allowing to reduce the market complexity, and consolidating external liquidity in one single external euro rate. This lead, to the elimination of the parallel markets and consequently an improvement in transparency. However, the impact of this transparency can be either positive or negative depending on the kind of actors that the market is facing. An investor that has an imbalanced portfolio of currencies would be beneficiary to have an opaque market, in that way the investor will be able to adjust his portfolio without having high losses. For example, if a dealer S has an excess of dollars and needs to buy some euros to pay a debt, he will change little amounts of dollars till the moment to reach the necessary amount to pay. This technique will reduce inventory risk. If the market is

transparent the other market participants would know the strategy of dealer S and would implement a front-running position.
Furthermore, in the case of a balanced portfolio would be different because by having the same amount of all the necessary currencies the investor can "play" with the market, for example, if dealer F knows about a future excess of dollars in the market meaning that the value of the dollar will decrease because of the surplus of supply. Dealer F will purchase more euros to not inquire losses in the moment of the dollar depreciation. Alternatively, dealer F could sell the euros at a higher price to a dealer that needs euros in the future, earning trading profit. We can observe that a highly transparent market promotes investment strategy encouraging front running.

The impact of transparency on FOREX market

The FOREX market unlike the stock market is one of the markets most affected by transparency since trade in the foreign exchange market has low transaction costs, it is easy for the dealers to enter a front-run position, so any minimal change in the transparency would be crucial for a FOREX dealer.

The euro creation has raised concerns about the change of the FOREX market structure because of the transparency improvement. Taking into consideration that before the investor had the opportunity to invest in different European countries with different currencies. This means that had a wide number of currency types that made it easier for the investor to reach their desired positions, consolidating liquidity in a single market was harmful to traders because it becomes more expensive to acquire large FOREX positions due to the fact of fast price discovery. This factor can explain the spread increase and the increase in transaction cost.
Additionally, by putting a single currency in Europe it took away the option to have a diversified portfolio in terms of European currencies but simultaneously the introduction of the euro encourages to investors that only invested in the home market to invest in the foreign market. Since having the same currency eliminates a big part of transaction costs and mostly it gives confidence to the investors.
On the other hand, the euro does not only change the structure of the financial market but also changed the behavior of the investors. In the moment that the market becomes more transparent, the investor becomes more risk-averse because now that they can see all the movements that are happening in the market, they reduce their exposure to inquire big losses. We can take the example of the US-dollar/DEM-EUR that experienced a significant decrease from the year 1998 to 1999. The average

daily trade size for the US dollar fell by 7.6 percent and the German Mark-Euro decrease by 3.7 percent[33]. This shows how the investors react to the market structure change and become more cautious when they perceive more risk.

Order Flow:

Inventory risk plays a key role in the FOREX market, especially during times when there are temporary imbalances in supply and demand. This imbalance can be very harmful to the FOREX dealers because they need to have a certain amount of currency to answer to the demand of the market, if the dealer does not have that quantity, it will be forced to buy in the open market that would be much more expensive. Moreover, if the FOREX dealer has too much of a specific currency that can be either positive or negative, because if that currency appreciate is good for the FOREX dealer because the value of his portfolio will increase but if the currency depreciated it would face high losses.

There is a tool called Order Flows in the FOREX market that helps to understand the direction and volume of trading activity in the foreign exchange market. By measuring whether in the market there is more buying or selling pressure in a specific period length. If the Order Flow is negative, it means that there is higher selling pressure. For example, if a FOREX dealer receives the order to sell $5 million of a particular currency, it will be registered as a total volume transaction of $5 million, and in terms of Order Flow it will be considered as minus $5 million because the seller is the initiating side wished to sell.

Consequently, with the increase in transparency brought by the euro also the inventory risk rises. As the investors can make a more informed transaction the FOREX dealer needs to hold a larger amount of currencies to be able to respond to the demand of the market, but at the same time dealers needs to be incredibly careful because if the market moves against the inventory position will lose a large amount of money. These two factors make major changes in the demand and supply of a currency so by default the exchange rate will be affected also.
Overall, we can see that transparency affects a wide number of aspects of the FOREX market making a change in the structure, the values, and the behavior of the investors.

[33] Hau, H., Killeen, W., Moore, M., Honohan, P., Franks, J., & Portes, R. (2002). How has the euro changed the foreign exchange market? Economic Policy, 17(34), 149-191. doi:10.1093/epolic/17.34.149

Buy Shocks

In this part, we will be focusing on the two variables where the FOREX market conditions are summarized: the Order Flow which would be the daily difference of buy and sell orders, and the daily exchange rate change. We will compare the before and the after of the exchange rate response to a buy shock, through the following graphic:

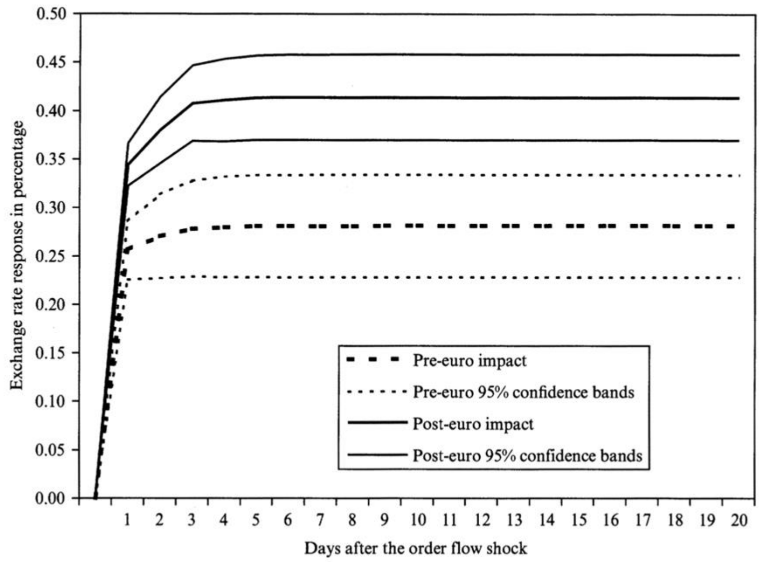

Figure 6: Pre and post-euro exchange rate impact of a billion $1 billion order flow shock
Sources: BIS
Year: 2001

In this graphic, we can see the impact of a buy order of $ 1 billion and observe how the exchange rate answered in percentage after and before the introduction of the euro currency. We can see that the euro makes the exchange more sensitive to large buy and sell orders in the market, the exchange rate would move by 28 basis points after the buy of $1 billion before the euro and rather that after the euro, it increases exponentially to 46 points. This highlights how the euro has made the market more sensitive to buy and sell shocks.

Chapter 3: History of Latin American

Exploring Monetary Regimes in Latin America

Latin America is known around the world for his diversity in fauna and flora, for their beautiful landscape and their unique cultural heritage in each country. However, the region has not been known for its economics strength or finance stability and this can be due to different reasons. One of the main reasons is that the Latin American countries have not find yet the correct exchange rate and monetary regime to implement in these countries. Along the years they have tried to implement different solution with intermediate regimes as:

- Soft pegs: a type of exchange rate regime that is used to stabilize a currency value in regard to a reserve currency or a basket of currencies. The soft peg is between the hard peg and the floating exchange rate and have a limited control over the monetary policy. The range of the peg can be modified over the time depending in the inflation.
- Crawling pegs: a type of soft peg that have as main goal to stabilize the exchange rate and manage the inflation, always depending in the economic circumstances of the country and the external shock. The crawling peg is periodically change in small amounts at a fixed rate or based in a specific quantitative indicator, like expected inflation.
- Crawling bands: is a type of exchange rate regime that include some upper and lower bands to limit the fluctuation of the currency. This bands are fixed by the central bank and when the currency touch one of the bands the central banks intervene to regulate the market, while the currency is still peg to one basket or a main currency.

All this monetary regime were based in their trade partners and in the market that the home country relies on the most. For instance, the Colombian government that used the crawling band of +7% in 1991 they were anchor to the US-dollar as is with the country that do more transaction[34]. In contrast, Chile had a more diversify transaction portfolio it was anchor to a basket of currency rather than only to one currency with a wider band of +15% that were kind of high[35].

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[34] Williamson, J. (1993). Crawling bands or monitoring bands: How to manage exchange rates in a world of capital mobility. Peterson Institute for International Economics Policy Brief, PB93-8. Retrieved from https://www.piie.com/publications/policy-briefs/crawling-bands-or-monitoring-bands-how-manage-exchange-rates-world

[35] Williamson, J. (1993). Crawling bands or monitoring bands: How to manage exchange rates in a world of capital mobility. Peterson Institute for International Economics Policy Brief, PB93-8. Retrieved from

Along the years the emerging market have found that the intermediates regimes are more susceptible to financial crises, cause of that reason the Latin American countries start to change their monetary regime. The Ecuador and El Salvador pass from an intermediate regime to a adopt the US-dollar as the legal currency. Moreover, Chile and Colombia pass to a float exchange rate. These changes were often made during critical situations, such as when countries were facing or nearing a crisis. For example, Brazil, Mexico, and Venezuela changed the monetary regime when they were under intensive speculative attacks to their currencies because of currency speculation, capital flight, external shocks and market manipulation. In the case of Brazil and Mexico was that speculators sold a large amount of the home currency that create a deficit in the market leading to an imbalance, that makes not possible to stay with the fixed exchange rate and makes those countries move to a floating exchange rate which allow their currencies to fluctuate freely depending in the market forces.
In the following graph we will be able to see how the different monetary regime are distributed around the world in percentage:

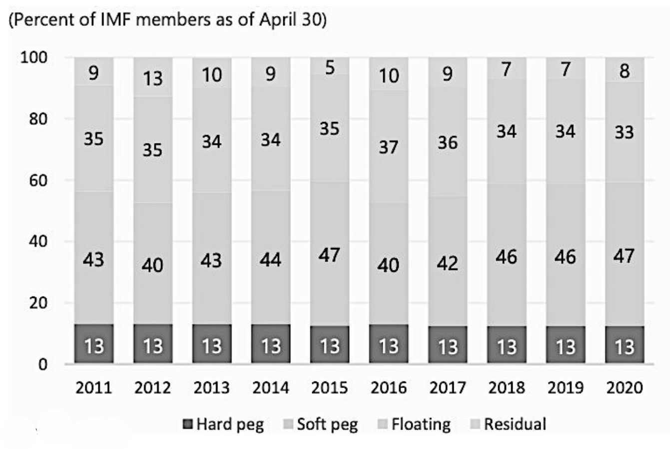


Figure 7: Exchange rate arrangement, 2011- 2020
Sources: IMF
Year: 2020

Overall, we can highlight that each Latin America country have a very different backgrounds having different monetary regimes and that each country face different economic and political problems.

https://www.piie.com/publications/policy-briefs/crawling-bands-or-monitoring-bands-how-manage-exchange-rates-world

Dynamics of Floating Exchange Rates

The floating exchange rate as his name implies is an exchange rate that change constantly over the time depending in the market demand and supply. The central bank is the monetary authority of the country that intervene in specific cases, to manage the short-term fluctuation in the exchange rate. This intervention would avoid the rapid and excessive variation of the exchange rate. This change occurs within a short period of time that could cause lack in competitiveness of import or export and disrupt trade. The role of the central bank would be to buy and sell of foreign currency in exchange for local currency to stabilize the exchange rate. For example, if there is an increase in value of the home currency the central bank will sell local currency and buy foreign currency, to increase the supply of the home currency and in this way cause a depreciation of the currency. Contrary, if the home currency is having a depreciation, the central bank will buy local currency and sell foreign currency to diminish the supply of the home currency and make increase the value of the local currency.

The main advantage of the floating exchange rate is that the country is independent in his monetary policy, meaning that if the country is facing bad economic conditions the central bank will be able to respond and bring a solution. However, in order to maintain a solid monetary system is needed to have a deep and liquid foreign exchange and other financial markets that can absorb shocks and not have large change in the exchange rate. For investors looking to invest in countries that have a floating exchange rate it is important that have available a range of financial instruments for hedge their investment against potential losses arising from changes in exchange rates.

Almost all the big economies have the floating exchange rate regime and also a long the years the emerging countries as Brazil have adopt it.

The 1999 Brazilian Financial crisis:

Brazil in 1994 adopted the crawling band, that were a fixed exchange regime knows as the “Real Plan” where the real was pegged to the US dollar. The main goal of the “Real Plan” was to stabilize hyperinflation in Brazil and boost to an economic growth. The stabilization of the currency of very high inflation had been successfully achieved thanks to the nominal exchange rate anchor. As a result, between 1994 and 1997 Brazil face a slowly economic growth attributed to the exchange rate policy implemented under the “Real Plan”. But in 1997 the nominal exchange rate rigidity become excessive, showing an overvaluation of the real that make and create external imbalances. This, in turn, resulted in high levels of public debts through continuous private banking and state government rescue activities. And this public debt further exploded due to high interest rates, which became systematically higher than both the growth in public revenues and the returns on reserves. Brazil starts to face serious fiscals' problems, making the government to increase the interest rates that make stop the economic growth and at the same time increase unemployment. Furthermore, in 1998 Russia faced a financial crisis that makes the investor to be more risk-averse in the moment to do investment resulting in the withdrawal of investments in emerging countries. The Russia crisis provoke a contagion effect in Brazil because of the similar characteristic that these two countries share as: the highly dependance in foreign capital inflows to finance their economic growth and also to support the value of their currencies.

Overall, Brazil faced a financial crisis that create drastic consequence for the monetarist policies mainly the fact that the real lost about 50 percent of its value against the US-dollar in matter of months. This encourages the Brazil government to adopt a floating exchange rate to manage the financial crisis.

Dynamics of full dollarization:

The full dollarization is a very strict monetary system, is when a country adopts a foreign currency in this case the US-dollar and eliminate the use of their own currency. This system gives a wide of advantage for the country as:

- Replacing the home currency by the US-dollar the country will achieve an economy stability and would not suffer sudden devaluations. So, that would make a more attractive economy for the foreign investors and make the economy growth.
- The moral hazard will be reduced as by putting a full dollarization the country will not have a lender of last resort as the European central bank for the European Union and the Federal Reserve for the United States. So, the country will need to be much more careful with their financial movements to better manage liquidity and solvency risks by banks and regulatory institutions.
- The country will also become more responsible with the fiscal policies, because as they don't have any control of their monetary system would not be able to finance the public sector deficit.

We can see that the full dollarization brings a large number of benefits to the country that implement it. However, it also brings a main negative aspect, the country loss completely his monetary system independence, as it will depend solely in the monetary system to which the country is pegged. Currently, only 7 countries around the world implement the full dollarization system: Ecuador, El Salvador, Marshall Island, Panama, Palau and Timor-Leste.
In the following graphic we will examine two Latin American countries that use the US-dollar as their main currency (Ecuador and El Salvador) and one country that use the euro: Kosovo.

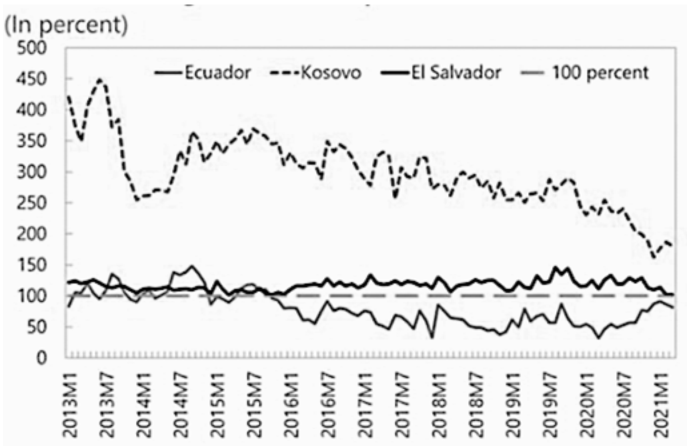


Figure 8: Reserve coverage of banks deposits at the Central Bank
Sources: National Authorities and IMF staff calculation
Year: 2021

The graph illustrates that each currency has a different amount of reserve, that is due to different factors such as demographic, geographic, financing resource, and economic structure. And based in those factors the governments decide how to manage the reserve in the central bank. In this case we observe that El Salvador hold a constant amount of reserve that are around the 100 percent of reserve coverage and Kosovo hold more of the 200 percent of reserve coverage in the last decade, meaning that El Salvador and Kosovo have full coverage of their liabilities. On the other hand, we have Ecuador that before 2015 had 100 percent of its liabilities covered but after 2015 the coverage reserve arrives at only 30 percent.

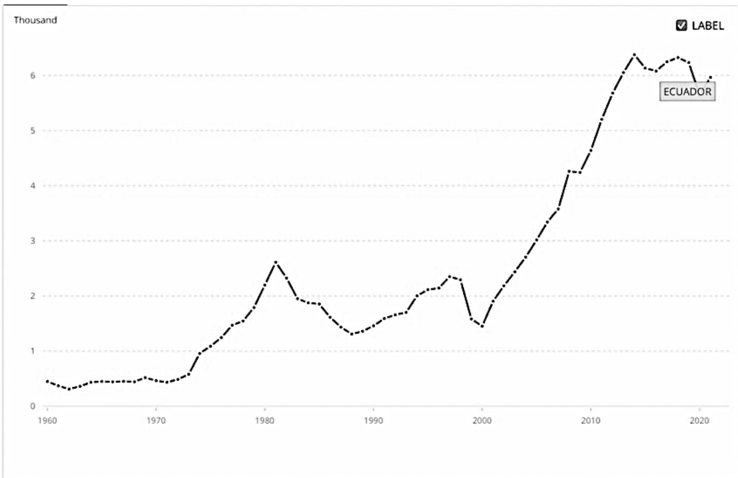
Ecuador's Transition to Full Dollarization

Towards the end of 1990s the Ecuador faced a confluence of economic challenge, including a large structural fiscal deficit and balance of payments deficit.

The oil price reached a historically low price, which dropped the price per barrel further making worse the economic situation[36]. On the other hand, one of the main pillars of the Ecuadorian economy was the agriculture sector and during that period of time, the climate situation was confusing with an excess of temperature called “El Niño” phenomenon, creating losses in agriculture[37]. The combination of these factors makes the output collapsed, inflation rise rapidly, and the exchange rate decreased drastically, provoking the Ecuadorian population a loss of confidence in their currency. After a decade of suffering a rise in inflation and a plumb in the exchange rate, President Jamil Mahuad announced the adoption of the dollar in January 2000, to make this transition possible the government needed to instore an exchange rate of 25,000 sucres per dollar[38] to ensure that the central bank had enough reserves to cover the swap of currencies.

The decision made by Jamil Mahuad has been very criticized amount the Ecuadorian citizens and also by the Central Bank of Ecuador which result in the resignation of President Mahuad. Nonetheless, the successor of Jamil Mahuad, Gustavo Noboa confirmed the process of full dollarization for the country. Over the years a wide amount of oil stabilization fund was created to protect and enforce the governments' savings. Thanks to all those actions the inflation rate starts to decrease, and the GDP start to increase after 2000.

In the following, we can see a constant decrease in the Ecuadorian GDP since 1997 and that after the full dollarization in 2000 started to increase exponentially the GDP.



[36]Bulíř, A., Leigh, D., & Čihák, M. (2019). A Monetary and Fiscal History of Latin America, 1960–2017. University of Chicago Press.

[37] Bulíř, A., Leigh, D., & Čihák, M. (2019). A Monetary and Fiscal History of Latin America, 1960–2017. University of Chicago Press.

[38] International Monetary Fund (IMF). (n.d.). Exchange rates archives by country: Ecuador. IMF Data Query. Retrieved from https://dsbb.imf.org/sdds/dqaf-base/country/ECU/category/EXR00

Figure 9: GDP per Capita (current US$) – Ecuador
Sources: World Bank National accounts data and OECD National accounts data file
Year: 2021

Diverse Economic and Political Backgrounds in Latin America

We can see from the previous paragraph that the Latin America countries have a wide number of differences in their economic and political background each country have a different history and financial events that achieve to go through without relying on support from neighboring nations.
Additionally, each country had different outcomes in their politics and their monetary regime we can see that after their crisis, Ecuador chose to put a full dollarization regime instead Brazil chose to implement a floating exchange rate regime.

Single currency in South America:

Prospects and Challenges of Implementing a Supranational Currency in Latin America

The South American countries have considered the option of create an independent currency union as was done in Europe in 1999. This project incurs a large number of action that each country and the continent together must carry out together to achieve his final goal.
The implementation of a supranational currency has the potential to bring welfare to the Latin American countries in different sectors. Countries with significant volume of transactions between them would take away a high number of barriers, such as reduction in transaction cost and a decreased in uncertainty associated with currency exchange. This single currency would foster greater integration among Latin American countries and also will create a sense of trust, which is currently lacking due to the high volatility of their currencies against the US-dollar and euro.
The lack of trust makes investors much more risk averse in the moment to do an investment in their home country or in their neighbors' countries, that they prefer to move their investment in a much more stable economy as United States or Europe that have become a strong along the years in the debt security market and also in the FOREX market.
On the other hand, Latin America is known to have a relatively closed economies to international trade because of the protectionist trade policies and high tariffs. Despite this, they have a diversify number of trade partners maintaining as key partner the United States. This is due to the different trade agreement that the US have with other countries as The North American Free Trade Agreement

(NAFTA)[39] that eliminate more than one half of the tariff to Mexico's exports to the United States and more than one-third of the United States exports to Mexico, which has helped maintain a strong trade relationship between the two countries.

Now taking in consideration the intra-region trades, that are done inside the Latin America are much lower than the ones done in the European Union (EU) due the fact that the EMU have the euro and the European Central Bank that allows to have free trade between the EU-members rather that Latin America have for each country different regulations.

One crucial aspect in implementing a unique currency in South America is that would be necessary to develop a common institution as the European Central Bank (ECB) to support the adjustment of the political and financial regulations. Europe had a big advantage over Latin America in that before the euro creation, European countries had invested time and resources in create a common system among the members called the European Monetary System (EMS). This system has as main actor the European Currency Unit (ECU) that was a weighted average of all the European currency, that help to control the volatility of the EU currencies, consequently making them have a similar economic background. This made easier to set up a union without doing massive pressures for massive fiscal transfers.

Contrasting factors between Latin America and Europe

In contrast to Europe, Latin America has countries with very different sizes of economies, where countries as Brazil and Mexico have a large number of transactions with many trading partners, that creates a strong economy. While others like Paraguay and Bolivia have smaller economies.

Another key difference between the European countries and the Latin American countries are that the European currencies before the euro they were fighting to have the strongest currency in the world competing alongside with the yen and the dollar. Indeed, Latin American currencies face challenge of depreciation and economic stability compared to the big world economies. In this perspective, the proposal of Brazil and Argentina would not achieve the same outcomes as the euro due to historical and economics factors that differ from the Europe.

[39] U.S. Department of Commerce. (n.d.). North American Free Trade Agreement (NAFTA). International Trade Administration. Retrieved April 27, 2023, from https://www.trade.gov/north-american-free-trade-agreement-nafta

Contrasting landscapes of the debt securities markets

When the euro was created a main factor was that their predecessor were, the German mark and the French franc two strong currency that create confidence to investors. Trust in a currency is crucial for investors as any fluctuations would cause loss of money. With the arrival of the euro, the US-companies had another currency who trust because of its large liquidity and a high value. As a result, they started to issue more security debt in the EU currency. Contrary, Latin American countries do not have a strong background that allows to the investor gains confidence, rather they are going to encounter a weak background in terms of debt security, due to the different policies, regulations and taxes that have each country that doesn't allow to foreign investor to interact easily with the South American market. Additionally, there is a lack in proper infrastructure for develop the private sector debt securities, as the lack of:

- Long-term government benchmarks used in the pricing of corporate liabilities.
- Insufficient protection of property rights
- Lax accounting standards
- Poor corporate governance

Over the year the situation has been change thanks to the improvement of policies and the performance of the country in terms of portfolio diversification, refers in how well are spread the investment across different types of assets.

In fact, the past decade the issuance of domestic securities has being growing rapidly, the securities issue by the central governments and non-financial corporation in Argentina, Brazil, Colombia, Venezuela, Peru, Mexico and Chile increased by 337 percent between 1995 and 2005, reaching $895 billion, that correspond to the 40 percent of these countries combined GDP[40]. This reflects a positive trend towards the development of the debt securities market in the region. However, despite the improvements there are still challenges to overcome, such as the drastic size of the domestic debt market among the South American countries.

[40] Jeanneau, S., & Tovar, C. E. (2008). Latin America's local currency bond markets: An overview. Journal of Banking & Finance, 32(4), 572-582. doi:10.1016/j.jbankfin.2007.03.005

Challenges and opportunities in the South America FOREX market: the role of the Mexican Pesos as a proxy hedge

Latin American market is less open to international and intra-regional transaction due to their barriers. When we are talking about the South America foreign exchange market, we are encountering the problem that Latin American countries don't act as a unique block but rather as small individual countries, so they make less impact in the market and creates a less attractive environment to the investors. Nonetheless, despite these challenges, the South America FOREX market have a profitable market for FOREX trading with a large potential client base.

Taking in consideration that Latin America have 20 different currencies, each with a distinct monetary regime and level volatility. This makes difficult to the FOREX dealers to invest in a wide number of South American currencies because of the risk associated with their fluctuation.

Because of that the investor study the general financial situation of Latin America looking at the Mexican Peso that is the currency more traded among LATAM currencies, and against the US-dollar have a considerable good value.

As the Mexican Pesos is the most powerful currency in Latin American continent it is use as a proxy hedge for the whole region.

This means that foreign investor uses the MXN as a way to gain exposure in a new market, in this case in the South America foreign exchange market. The Mexican Pesos is seen as a key indicator of the economic situation in neighboring countries and is consider the more stable currencies compared to the other currencies from Latin America. By using the MXN as a proxy hedge, the investor is avoiding major risk instead of investing in small and volatile Latin America currency.

Based in the analysis done by Bloomberg[41], we have a clear example of how the fluctuation of the Brazilian Real can affect drastically the Mexican Pesos in the FOREX market because the strong links between Mexico and the rest of the South American countries. The most evident fluctuation for MXN is when the European market is close as there are only two primary markets trading, the American and the Asian.

This result in lower liquidity in the foreign exchange market, making it more sensitive to negative external shock shocks, especially during large transactions. This fluctuation affects the sell-side and the buy-side.

[41] Rabobank. (2016, October). Latin America FX: Risk, carry, and central banks. RaboResearch - Economic Research. https://economics.rabobank.com/publications/2016/october/latin-america-fx-risk-carry-and-central-banks/

On the other hand, we can see an asymmetric exchange rate with the USD/BRL and USD/MXN currencies pairs. When the Real suffer a financial shock the value of the Brazilian currency against the dollar change much less than the value of the Mexican Peso against the dollar meaning that any negative external event that occurs in Brazil would have a greater impact on the Mexican Peso, given the varying levels of market liquidity, exposure to external shocks, and the relative size of the two economies.

Possible scenarios for the FOREX market in Latin America with a common currency

The overall Latin America FOREX market is only the 4 percent of the total amount of money that is traded in the global FOREX market turnover. In April 2019 the Latin American countries had $155 billions daily, where Mexico traded $109 billion, Brazil $49 billion and among Chile, Peru and Colombia with a total of $38 billion[42]. This shows that there is a clear dominant player in the Latin American FOREX market, much like Germany dominates the FOREX market in Europe before the euro. If South America were to adopt a single currency, two different scenarios could occur.

Firstly, the amount of FOREX transaction increase exponentially going up of the Mexican transaction and of the total value of all FOREX transaction in Latin America, making a significant boost.
Secondly, a situation similar to what happen in Europe right after the implementation of the euro could occur, where there was an increase of transaction compared to the Germany mark but a decrease in transaction compared to the whole European Union. We must take in consideration that the Latin American countries have many barriers that discourage the foreign investor, so is very prone that the FOREX transaction increase because it will be a more attractive market for the other countries. This could also reduce the dependence in the US dollar, as the single currency will become the second largest currency block in the world, placing it in a much higher position than it is today.

Parallel markets and improving transparency through a common currency in Latin America

Adopting a single currency could eliminate the multiple parallel markets that are present in the Latin American market, that exist due to the legal restrictions on buying and selling a particular currency. Currently, the FOREX market in Latin America has a high number of legal barriers that hinder the

[42] Bank for International Settlements. (2020). BIS Triennial Central Bank Survey: Foreign exchange turnover in April 2019. Retrieved from https://www.bis.org/statistics/rpfx19_fx.htm

trading of certain currencies, leading to a lack in transparency and the emergence of parallel market, that facilitates illicit activities.

In the Latin American FOREX market, only a limited number of intermediaries are allowed to conduct transaction with other countries and only for few specific purposes, this results in a lack of access to traders who incur to illegal channels to be able to trade. However, engaging in illegal activities traders can be caught and face severe punishment. This transaction in parallel markets is done in cash and checks and are common in countries where the default risk is low, and the surveillance of international transaction are weak. This phenomenon is particularly prevalent in Latin American and Asia where the US-dollar is used as the foreign transaction trading. Despite the presence of these parallel markets the trade between the countries continues to occur[43].

The parallel market brings a large number of negative aspects to the governments that taking it away will solve a high number of problem and would improve the welfare of the country. One of the main negative aspects are:

- Loss of income from taxes and tariff.
- Encourage corruption.
- Reduce flow of foreign exchange to the national central bank.
- That make easier to people to switch from domestic currency to foreign currencies.

So, by implementing the single currency the efficiency of foreign transaction can be improved, and transparency can be increases by removing corrupt practices. Leading to a greater welfare and economic growth to the South American countries.

Potential benefits of a common currency in Latin America for investors

At the time of the euro's implementation, there was many debates among the investor, arguing that before could create a more diversify portfolio with the different European currencies. In contrast to the situation in Europe, the creation of a unique currency in Latin America would not affect the diversification of the investor portfolio. This is because the only country that have a big participation in the South American FOREX market is Mexico and investor typically only invest in the Mexican Pesos as it is their proxy hedge. The adoption of a single currency in Latin America will encourage

[43] Autor, D. (2005). Outsourcing at will: The contribution of unjust dismissal doctrine to the growth of employment outsourcing. Princeton University Industrial Relations Section Working Paper, 188. Retrieved from https://ies.princeton.edu/pdf/E188.pdf

investors to diversify their portfolios beyond Mexico. With a common currency in place for all the LATAM countries the investors will trust much more in the stability of the currency, increasing the willingness to invest in other Latin American FOREX market as Colombia, Peru, Chile, and others.

A common currency would also promote the increase in transparency and consequently in market information. Allowing the investors to do much more inform decision and be more risk-averse when investing. This transparency would decrease the uncertainty that investors had in the Latin American market and make increase the investor confidence, encouraging investors to enter to new markets that previously were consider too risky.

With the increase in transparency, investors would have a better understanding of the risk associated with investing in emerging markets.

Although the Latin American countries are known because of their volatility, with a common currency would provide more stability and would reduce legal barriers, making it more attractive and accessible to foreign and domestic (Latin American citizens) investors. While increased in transparency in the European market had some negative aspects, in the case of Latin America, it is expected to bring mostly positive benefits, mainly improve confidence because the increase of disposable information of the market and the stability that a single currency would create. Overall, a common currency in Latin America is likely to have a positive impact among the emerging countries by promoting the economic growth and development.

Conclusion

In conclusion, this thesis provides to the readers an understanding of the main characteristics of the foreign exchange market, with a particular focus in the impact of the euro's introduction and how a single currency for Latin America would affects the FX market.

We show that the FOREX market is a critical component of the global financial market since facilitates movement of large sums of money for companies, governments, banks and individual engaged in international trade. The FOREX market growth exponentially thanks to the technological improvement which made more accessible to smaller investors with lower entry costs and reduced the leverage of traditional financial institution like banks and governments. Now, the Electronical Brokers opened up opportunities for individuals to trade in the FOREX market and access a range of tools including futures, options, FX swaps, spot contracts and forward contracts, to hedge their investments.

This thesis makes an analysis of two main players in the financial market, that are strongly correlated. It shows how currencies have a crucial role not only in the foreign exchange rate but also shaping investor behavior. Investors base their investment decision on wide number of different factors as the reputation, value, fluctuation, and stability of the currency, that allow to understand the currency dynamics for successful financial decision.

By the introduction of the euro into the FOREX market provided traders with an additional currency to invest, beyond the US-dollar, having stability and low fluctuation. The entry of the euro created a new competitor for the US-dollar, replacing the German Mark as the primary currency for all European countries. As a result, these countries had an increase in their participation in the global transactions. However, prior the implementation of the euro, members of the European Union had already taken a significant step toward integration, creating the European Monetary System in 1979[44], The establishment of the EMS prepared the European countries to the major changes that came with the introduction of the euro. However, the adoption of a common currency for Europe had some disadvantage in the short run, such as a decrease in the number of transactions among all the European

[44] Investopedia. (n.d.). European Monetary System (EMS). Retrieved April 27, 2023, from https://www.investopedia.com/terms/e/ems.asp#:~:text=Key%20Takeaways-,The%20European%20Monetary%20System%20(EMS)%20was%20an%20adjustable%20exchange%20rate,the%20European%20Community%20(EC)

countries, but in the long run it brought significant advantage for governments and for citizens in terms of political policies and economic situation. Although the US-dollar remains the global currency, the euro is gaining value and market share in the foreign exchange market it may become a stronger competitor to the US-dollar in the future.
Finally, Latin America have a large number of countries with a wide range of opportunities, but foreign investor avoids to invest in those countries due to their volatile currency values and monetary system. As a result, the foreign investors use the Mexican Pesos as a proxy hedge to invest in Latin America. Mexico is perceived as the most powerful country among the South American countries, consequently an external shock affecting any of his neighbors would drastically affect the economic situation of the country. If the Latin America achieve to create a unique currency it would bring a large number of benefits to the countries since they would benefit from a greater stability and a valuable currency, this single currency will open new doors to the developing countries allowing them to have a large participation in the FOREX market. A currency block would be more attractive to the investor, given them a higher confidence and also because makes the Latin American markets more transparent.

Overall, a creation of a unique currency would imply significant change for the Latin American countries as it was for Europe. It would give the opportunity to the developing countries to enter new markets, such as the foreign exchange, and reduce the dependence in the US-dollar, creating an economic growth to the South American countries.

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