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**SPECULATIVE ATTACKS AND CURRENCY CRISES**

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## **INTRODUCTION**

The gradual lifting of restrictions on the movement of capital between countries (deregulation) and the generalization of applications of technology in telecommunications, were the factors that gradually shaped the backdrop of the new global money and capital market. At the same time, the phenomenon of securitized assets from financial institutions, took on particularly large dimensions, contributing even more to the internationalization of the financial markets (Igwe et al., 2022)

The result of this internationalization has been the development of a wide range of financially derivative products, as well as the mutual funds managed by the pension funds by creating a large pool of savings, seeking ever higher returns. It is noteworthy that from 1986 until the outbreak of the global financial crisis, all existing derivatives contracts - such as options for buying or selling interest rates or currencies, or futures for shares or interest rates or currencies (futures and forwards) - increased at an average annual rate of 40%. (Scotty, 2019).

The growing interdependence of countries in recent years has led to a dramatic increase in the proportion of financial transactions that have an international dimension. Exchange rate volatility and large international imbalances have led to the development of new financial instruments and markets in which they trade. As exports and imports have increased as a percentage of GDP in all developed countries, the proportion of companies that need foreign currencies to buy intermediate or final products has skyrocketed (Zhongzhao et al., 2018).

Therefore, in this new global monetary regime, vast amounts of cash are moving quickly and on a daily basis from country to country or from placement to placement due to automation in money transfer systems and completely free, due to the lifting of restrictions on the movement of funds. Finally, the liberalization of individual financial systems and the development of new financial products have

reduced transaction costs and expanded cross-border transactions in securities and equity securities (Bundy & Pfarrer, 2018).

Although the theory of balance of payments crises (speculative attacks on foreign exchange leading to sharp devaluations of international currencies) officially began with the papers of Paul Krugman in the 1970s, interest in the area was renewed in the 1990s, beginning a new wave of models and interpretations of these crises. The period from the 1990s onwards saw a number of crises and speculative attacks, beginning with the European Exchange Rate Mechanism (ERM) crisis in 1994/95, moving to Mexico's tequila crisis in 1994/95, and reaching the Asian crisis in 1997/98, the Russian crisis in 1998, the crisis in Brazil in 1998/99 until the global economic recession of 2008 (Bundy & Pfarrer, 2018).

Again, the reason for such a large number of crises and speculative attacks since 1990, is the increased globalization and mobility of capital in the world market, the liberalization of current transactions and capital that do not adapt to the liberalization and upgrades of The emergence of many new markets, market-oriented countries in transition, and the weakening of the international monetary system due to the abandonment of international exchange rates that relied on the US dollar in the early 1970s (Igwe et al., 2022)

This dissertation examines the role of the monetary crisis in the emergence of speculative monetary attacks. In particular, its definition will be analyzed monetary crisis through the different models developed. Each generation of models was developed in order to explain and predict crises with different characteristics while the actions of states play a decisive role to maintain a fixed exchange rate system. Next, there is a historical overview of the evolution of the international monetary system, i.e. from the gold system and the importance of fixed exchange rates to freely floating exchange rates. Finally, cases of speculative attacks and how they were dealt with by states and banks will be analyzed.

# CHAPTER 1 CRISES: NATURE AND CONCEPTUAL CONTENT

## 1.1 Definitions

Kahn et al., (2013) defined the crisis as an event that "causes serious emotional and social discomfort, which can occur at any time and without any warning." Similarly, Coombs (2017:164) explained that a crisis is "an unexpected event that threatens the functioning and existence of systems and organisms."

The crisis, however, can be perceived as a critical moment for the development of organizations. As stated by Brockner and James (2008) but also by Sellnow & Seeger, (2013), if the actors and members of a system or organization, are able to manage a crisis properly, then are likely to have a better future. Therefore, a crisis should sometimes be treated more as an opportunity than as a threat.

Crisis, for an organization or system is any global, regional, or local (endogenous or exogenous) event due to natural phenomena, human actions (corporate, governmental, technological, fiscal) that pose a risk to (James et al., 2011: 476).

1. Escalating intensity,
2. Adverse effect on the financial position of the organization (or system) and / or on the value of the organization's shares (if any)
3. Causing harm to humans (inside or outside the body),

4. Destruction of property (of the organization or third parties) or of the environment,

5. Obstruction of the normal operation of the processes and procedures of the organization with a great waste of administrative time and / or financial resources,

6. Effects on the morale of executives and employees in the organization,

7. The reputation, the public image of the products / services and the executives of the organization and therefore negative effects for the future,

8. Drawing the attention of the media and the interest of state control mechanisms and services.

Summarizing, a crisis always consists of the same building blocks. The size and duration of these elements compose and determine the severity and its results and effects. Every crisis is made up of the adverse effects created by the manifestation of a phenomenon or a set of coexisting and associated phenomena with a single manifestation. If there are no adverse consequences, there is no crisis. In other words, the preconditions for creating a crisis are for a phenomenon to manifest itself and to cause adverse results (Sfakianakis, 2006).

The adverse effects of the phenomenon depend on the characteristics of the phenomenon. Therefore, the characteristics of the crisis are proportional to the characteristics of its causal phenomenon. Due to this logical relationship, the characteristics of the phenomenon and many times its name, are also attributed to the crisis, resulting in misinterpretations and confusions since the characteristics of the phenomena are measurable, while those of the crises are not.

The main characteristics of a crisis phenomenon are:

- Its nature and etiology (physical, social, economic, etc.).
- Its size (compared to a standard unit based on a scale).
- Its power (Its total energy at the time of its manifestation).
- Its duration (how long it lasts)
- Its frequency (every how long it occurs).
- The way it manifests (sudden, intense, mild, etc.).
- The way it evolves (slow and fast evolution)
- The consequences of its manifestation (unfavorable, favorable, big, small).

## **1.2 The components and phases of the crisis**

A crisis situation, therefore, consists of the following components: threats, loss of control, indirect and immediate consequences (Pearson et al., 2017: 48):

**Threat:** there is an indirect or immediate threat to the organization's resources and people as also to the systems. There may also be a threat to the wider social- financial environment.

**Loss of control:** One of the main characteristics of a crisis is the feeling of loss or ultimately the real loss of control of the situation, which worsens the situation itself, but also constantly feeds the crisis with unfavorable elements.

**Indirect and immediate consequences:** A crisis is necessarily accompanied by direct and indirect consequences for the organization or system. Of course, these consequences are not necessarily unfavorable. A crisis can have incredibly positive and beneficial consequences, but in any case it will be due to proper planning and effective management.



Each crisis is characterized by 4 different and distinct phases (Steven Fink, 1986). These phases are as follows:

- Prodromal crisis stage - the omens (Prodromal crisis stage)
- Manifestation of the crisis - Peak (Acute crisis stage)
- Chronic crisis stage
- Crisis resolution stage

Before the onset of a crisis there are some indications of the impending situation. Diagnosis of these signs is difficult and requires an excellent information system and a trained management team. This phase can also be characterized as a warning or alert phase since after the occurrence of an unusual event (most often negligible) the crisis can break out at any time with multiple consequences. Characteristic of this phase is that if the symptoms are diagnosed in time, then the management of the crisis is quite simple and the event will remain within the body and most likely will go almost unnoticed (Filolia, Papageorgiou, Stefanatos, 2005).

Initially, in order to identify symptoms and signs that could lead to a crisis and then evaluate them, there must be appropriate "indicators" (Mitroff and Gus Anargos, 2000). This is actually complicated to impossible, as most organizations do not have these indicators. The problem that arises is the diversity and complexity of the crises, which emit many and completely different signals.

The second phase of a crisis is the manifestation of the crisis - Peak (Acute crisis stage). In this stage the questions that arise now are the following:

- Who will manage the crisis?
- What are the appropriate actions?

- What and how many will be the losses?
- How can we take advantage of the crisis?

These questions can be answered through a proper and complete crisis management planning and of course with a professionally trained and equipped team, equipped with all the necessary tools. The duration of this phase is the shortest of all the others but due to the speed of events and the excessively large practice pressure (from all sides) looks like it is greater.

The next phase is the impact phase of a crisis. During this phase, the landscape begins to clear up and those involved in the crisis will record their losses. It is the period of self-evaluation of the executives and the search for the causes and possibly the culprits. In many crises, the scapegoat must finally be found who will take over (or be given the responsibilities) in order for the organization to move on to the next phase.

At this stage and after an effective management of the crisis, is included the period of congratulations to the successful team, which managed to reduce its results to a minimum, or to reverse the climate, for the benefit of the end of the organism. It has been shown, following research (Steven Fink, 1986) that a well-prepared and trained crisis management team will deal with this situation and reduce the duration of this phase by up to two and a half times, in contrast to organizations that do not have a plan and a management team.

It is the last stage of the crisis, the stage of recession - resolution is the main goal of every crisis management team. The "good" manager, from the stage of precursor symptoms, should seek out and prescribe the shortest possible arrival at the end of the difficult journey, which is not from returning to the previous state, not only with the least losses, but gaining benefits.

## **CHAPTER 2 CURRENCY MARKET AND CURRENCY CRISES**

### **2.1. Currency market**

In order to define the concept of speculative attacks and currency crises, we must analyze the concept of the foreign exchange market. The foreign exchange market is a global financial market in which all the financial centers of the world participate and in which all national currencies are traded (McKinnon & Phil, 2017). By the term foreign exchange market we mean mainly the closed interbank cycle of the largest commercial banks and investment banks in the world, and the total of "over-the-counter" (i.e. over-the-counter or semi-official money transactions, i.e. deposits in different currencies) as well as high-liquidity financial products such as short-term currency derivatives, between these banks and all other foreign exchange transactions between smaller "players" (smaller banks, institutional investors, multinationals, hedge funds, etc.). (Eichengreen et al., 2012).

In other words, foreign exchange market is the largest financial market in the world (Kumar, 2014), which consists of the retail market and the interbank market. In the retail market, individuals and companies with small needs for foreign exchange take part. Individuals need foreign exchange to travel to foreign countries, to study or to invest in foreign countries. The interbank foreign exchange market is a global market in which mainly commercial banks participate, which buy and sell currencies on their behalf or on behalf of their customers (Kumar, 2014).

Investment management companies also, participate in the foreign exchange market to invest in foreign securities. Multinational companies participate in the foreign exchange market, because they are engaged in international trade activities. Central banks participate in the foreign exchange market to influence the economic situation of their country and to determine the exchange rate developments.

In the foreign exchange market, the purchase and sale prices of currencies are determined. The exchange rate is called the exchange rate and is formed by the supply and demand of currencies. In a transaction, the currency in which the purchase is made is called the base currency, while the currency in which the sale is made is called the valuation currency or otherwise a rival currency (Agénor et al., 2013).

There are two ways of expressing the exchange rate between two currencies: the direct exchange rate and the indirect exchange rate. In direct exchange rate, the price of the domestic currency, which is the base currency, and is always equal to the unit, corresponds to a quantity of foreign currency, i.e., the valuation currency. For example, in the euro / US dollar exchange rate (EUR / USD), the base currency is the euro (EUR), and the valuation currency is the US dollar (USD) (Agénor et al., 2013).

In indirect exchange rate, the value of a foreign currency corresponds to a quantity of the domestic currency. In this case the foreign currency becomes the base currency and is equal to the unit, while the domestic currency becomes the reference currency (Gali et al., 2002).

The foreign exchange market is open 24 hours a day in various parts of the world, and this enables currency traders to minimize losses that may arise from specific foreign exchange positions. For example, if the price of the yen in Tokyo falls and the market in Tokyo is closed, a commercial bank could sell in the open Zurich market, minimizing its loss. Most currency transactions are made against the United States dollar (USD) as the dollar is the vehicle currency that facilitates the

circulation of currencies in the international foreign exchange market (Goldin, 2000).

The foreign exchange market includes the current and futures foreign exchange market. The current one serves mainly the trade of goods and services. It is a contract for immediate delivery of the currency, within a maximum of two days. The term concerns the conclusion of a contract for the purchase of foreign currency at a predetermined date and price. This avoids the risk of a subsequent change in the exchange rate for those who participate in the foreign exchange market, such as traders, investors, entrepreneurs, lenders, and so on. (Coyle, 2000). One of the activities in the current market is coin arbitrage, which is the process by which a coin is bought cheaply and sold expensively (Hall, 2017).

This activity is a kind of speculation. On the other hand, because the foreign exchange market is constantly open, it creates problems in the world economy, especially in times of crisis, because it causes panic in national markets and fluctuations in exchange rates. Exchange rate fluctuations are characterized as devaluation and revaluation. Changes in the exchange rate cause changes in the prices of foreign products expressed in domestic currency. In devaluation, the exchange rate decreases and exports are cheaper as imports for foreigners and foreign exports become more expensive as imports for residents of the country. In revaluation, the exchange rate rises, and domestic exports become more expensive as imports for foreigners and foreign exports become cheaper as imports for the country's residents (Ingram et al., 2012).

The supply and demand of money determine the balance in the money market. If one of the latter changes, then the balance will change. In practice, monetary balances fluctuate. Those who participate in the foreign exchange market in order to make deposits in different currencies, compare the expected rates of return in the countries they are considering investing. To compare the returns the first thing they need to know is the interest rate of the currency, and secondly the changes in the exchange rates (Kuznets, 2014).

Balance in the foreign exchange market requires exchange rates. The interest rate exchange rate indicates that the interest rate difference between two currencies should be offset by a change in exchange rates. When the interest rate is low, the country's currency is devalued. For example, a rise in the dollar interest rate, when all other factors are unchanged, causes the dollar to appreciate against the euro. Otherwise, a rise in the euro interest rate causes the dollar to depreciate against the euro (Leeper & Sims, 2014).

If a company based in Europe is planning to expand its production operations in the US, it is important to be aware of future fluctuations in the euro / dollar exchange rate. The question is whether investors and governments have the tools to forecast exchange rates. One tool that can predict exchange rates is purchasing power parity (PPP). Purchasing power parity (PPP) is a popular metric used by macroeconomic analysts that compares different countries' currencies through a "basket of goods" approach. Purchasing power parity (PPP) allows for economists to compare economic productivity and standards of living between countries. According to the theory of purchasing power parity, in its absolute form, the exchange rate between the currencies of two countries is equal to the ratio of their price level, in a representative basket of goods (Masulis, 2018).

## **2.2. Currency crises**

Historically, currency crises were defined in two ways. The narrow definition, associated with monetarist school has linked currency crises with banking panics. Friedman and Schwartz (1963) stressed the importance of banking panics as a major source of contraction in the money supply, which, in turn, have led to severe contraction in aggregate economic activity. Bank run panic is a

phenomenon that has historically plagued the global banking system - to a greater or lesser extent - for over a century (Leeper & Sims, 2014).

Its appearance comes down to a combination of factors: from the extensive banking crises to the depositor's primordial fear of the security of his savings. The effects of the banking panic on the stability and security of the banking and financial system in general are so crucial and detrimental to the liquidity risk of banks and the creation of a climate of fear that both precautionary and repressive measures are necessary. The former includes the introduction of a deposit guarantee system and the sealing of capital adequacy, while the repressive ones include the support from the last resort lender and the imposition of capital controls (Masulis, 2018).

Monetarists do not perceive as real financial crises events, in which, despite of a sharp decline in asset prices and a rise in business failures, there is no potential for banking panic and a resulting sharp decline in the money supply, and economic activity (Friedman & Paden, 1983).

Schwartz (1986) characterizes these situations as "pseudo-financial crises". Friedman and Schwartz (2008) point out that before the Fed was founded in 1913, banking panic was practiced by the practice of suspending the convertibility of bank deposits (Friedman & Schwartz, 2008). Although this stabilizing institutional arrangement was abolished after its inception, the central bank seemed reluctant or incapable, of dealing with the possibility of banking panic as, with its emergence, not only did it not strengthen bank liquidity but, on the contrary, it increased the discount rates of special loans to them. As evidenced by numerous studies of the crisis, to a considerable extent and at critical moments (October 1930-January 1931), the lack of liquidity had a major impact on the development of the phenomenon (Ferguson, 2006; Crafts & Fearon, 2013).

Minsky (1972) outlined the second definition of systemic fiscal crisis. Affected by the 1929 crisis and quite friendly to the money theories of John

Maynard Keynes, H. Minsky believed that banks were not merely intermediaries in the flow of capital from savings to the market, but also institutions that they were looking for profit, just through the rise of lending (Minsky, 1972).

In this sense, the banks and their pursuit of high profitability was a factor in destabilizing the market economy. And this destabilization took on enormous proportions when the American state, which since Kennedy had discovered Keynesianism in the name of a social policy, pushed the Federal Reserve from 2001 to 2005 to increase the money supply (Masulis, 2018).

As a result of this policy, the dollar fell in foreign markets, while commodity prices soared. In this context, with banks having plenty of liquidity from the Fed, interest rates plummeted and high-risk loans to doubtful solvency borrowers rose sharply. Politicians have added fuel to the fire by forcing banks to lend hundreds of billions of dollars in high-risk mortgages.

Minsky (1972) as also Kindleberger (1978) involve broad categories of crises, including sharp declines in asset prices, failures of financial and nonfinancial institutions, deflations or disinflations, disruptions in foreign exchange markets, or some combination of all of these. The root cause of financial instability is the breakdown of information flows, which hinders the efficient functioning of financial markets. A crucial impediment to the efficiency of the markets is asymmetric information that leads us to three basic problems: adverse selection, moral hazard, and free-rider problem (Masulis, 2018).

### **2.3. Currency crises theory: Fixed exchange rates and theory of excellent monetary areas**

It is clear that the most characteristic and basic role of money lies in its function as a means of transactions, since every transaction is done through the mediation of money. International transactions are made in the same way as



domestic transactions, i.e., goods are exchanged for money and money is exchanged for goods. But the difference between international and domestic transactions is that in international transactions there is another "exchange", that of one currency with another. The terms of exchanging one currency for another are called exchange rates, which are determined by the supply-demand relationship of each currency. There is a peculiarity in international trade, due to the fact that the national currencies of some countries are accepted as instruments of international trade by other countries, such as mainly the US dollar and but "strong" currencies, such as the German mark, the French franc and British pound. In the last twenty years, all countries with open economies have adopted the system of free floating exchange rates, the currencies of which are freely convertible.

However, in Bretton Woods's fixed exchange rate system exchange rates were not fluctuating freely. There are different views on the concept of monetary crisis, such as that monetary crisis is a crisis of overproduction and is identical with the stock market crisis. Also, another theoretical position links the monetary crisis with deviations from the relative exchange rate of purchasing power. Usually, however, when we refer to a monetary crisis we mean the devaluation of the exchange rate of the domestic currency.

What is certain is that the crisis is "paid" by the popular forces. As for the theory related to monetary issues and monetary crises, it attempts to answer three main theoretical approaches. The theory of best policy, developed in the 1950s, based on earlier approaches by A. Marshall and A. Lerner and supplemented in the 1960s by the model of J. M. Fleming and R. Mundell. A second theoretical approach is monetarist, which focuses on the supply and demand of money. Finally, an approach linked to the portfolio equilibrium model that focuses on the diversified portfolio of investors.

#### **2.4. The Bretton Woods fixed exchange rate system and floating exchange rates.**

Currency exchange rates directly affect a country's balance of payments and economic stability not only locally but also globally. This significant effect of exchange rates and the need for economic stability and predictability make a monetary system necessary. This monetary system ensures monetary transactions, ensures monetary stability and does not allow the arbitrary determination of monetary exchange rates. In the Bretton Woods fixed exchange rate system that collapsed in 1973, each member country had a fixed exchange rate against the US dollar and exchange rates between all other currencies were stable fixed dollar exchange rates at floating exchange rates.

EC countries, while letting their currencies fluctuate against the dollar, tried to narrow the margins within which they allowed their currencies to fluctuate against each other. As a result, many EC currencies fluctuated against the US dollar and therefore fell against the US dollar by about the same rates. Even before 1973, when the Bretton Woods fixed exchange rate system was in place, and after, EC members sought to better coordinate their monetary policies and reduce the already limited intra-European fluctuations set by the Bretton Woods system. Through these actions, the economic and political forces behind the recent failed attempt at monetary unification of Europe were revealed.

As for the floating exchange rate system, it is a different version of the monetary system and has different effects from the fixed exchange rate system. In a study covering many countries and historical periods, it seems that floating exchange rates systematically lead to larger and more frequent deviations from the relative exchange rate of purchasing power. At the same time, capital exploiting free foreign exchange markets seeks profits in the field of monetary speculation. Benefiting from the opening of stock market borders, capital begins to chase profits from fluctuations in stock prices and currencies.

Also, the phenomenon of low economic growth rates is exacerbated by the stock market monetary crises caused by the same speculation. In today's society, globalization and the development of financial markets create new problems of

stability. This situation makes it imperative to look not only for a monetary system but also for a global institutional framework that provides security and stability. However, the countries that have adopted the euro have ensured a fairly high degree of stability, which is a key condition for economic growth.

## **2.5. Theory of Excellent Monetary Areas**

According to Mundell, the question is "the definition of a monetary area as a field, within of which exchange rates are fixed" (Mundell, 1961, p. 657). But any such agreement between states with national currencies is extremely difficult, so the excellent monetary area is the one that will be able to implement a system of fixed exchange rates, in other words a common currency. "The excellent monetary area is the area (Mundell, 1961:189), which does not necessarily concern only one state or a federal state, but a wider territory of countries". Such an area can achieve high economic integration, as trade in goods, capital and labor is not affected by the risk of fluctuating exchange rates of national currencies and therefore becomes free.

When a state decides to join a common currency area the obvious initial benefit is that it enjoys exchange rate stability (monetary efficiency benefit) in its international trade. The reduction of uncertainty in relation to e.g. with the price at which he will sell his products is perhaps the most important advantage of his participation in excellent monetary areas. However, this participation also entails some costs, which is the loss of monetary policy as a tool to regulate fluctuations in economic figures.

In other words, each state no longer controls the amount of money in the economy. The conduct of monetary policy passes - de facto - to the monetary authority of the economic area of the common currency union. In practice, this means that a country is no longer able to exercise e.g. expansionary policy by increasing cash flow to reduce unemployment or a restrictive policy by reducing the

amount of money in order to curb inflation. Consequently, the development of each state's economy is closely linked to the monetary policy pursued as a whole. But what if a country experiences a drop in demand and rising unemployment or prices rise excessively?

The effectiveness of excellent monetary areas theory is documented through specific criteria-conditions, which must be met, to balance the disturbances that may occur in the different economies that participate in a common currency union. The three economists Mundell, Kenen and McKinnon, who were the three founders of the theory of excellent monetary regions, formulated a series of criteria or conditions that must exist to balance the so-called 'asymmetric shocks' in an economy.

For the inspirer of the theory of excellent monetary areas, Mundell, the key criterion of an excellent monetary area is the free mobility of labor. In his main article he gives the following example to explain why the free movement of workers is a prerequisite for the completion of an excellent monetary area.

Mundell criteria are what determine the optimal operation of the excellent monetary area. Labor mobility is recognized as a key feature of correcting external disturbances, limiting the need for exchange rate adjustment mechanisms (Dellas & Tavlas, 2009). "...If there is insufficient capital and labor mobility within a country, then the flexibility of the external currency's value is not expected to perform the stabilizing function assigned to it, and one can expect varying levels of unemployment or inflation in different regions. Similarly, if there is a mobility of rates between national borders, then a flexible trading system is unnecessary, and is likely to become extremely harmful [...] "(Mundell, 1961, p. 664). According to Mundell, therefore, the advantage of excellent monetary regions lies in the fact that the common currency allows the free movement of labor. Labor mobility (and not monetary policy) acts as a regulator of demand change.

As far as Europe is concerned, there is little evidence to suggest that its product and product markets are sufficiently integrated to make it an excellent monetary area. Trade between the European Union's partners accounts for less than a quarter of each member's GDP and labor mobility is not at levels that would allow countries to adapt to product market disruptions through labor mobility.

## **2.6. Speculative attacks on the exchange rates of the European Monetary System**

However, the outlook for European Monetary Union deteriorated towards the end of 1992, when the exchange rate of the European Monetary System was attacked speculatively. As a result, the course of the European Monetary Union has been dubious. However, the economic tensions, which caused the speculative crisis of the European Monetary System, were the direct result of the large losses of economic stability of the member countries, due to the stable exchange rates and the control of Germany in the conduct of the monetary policy of the European Monetary System. The reunification of East and West Germany in 1990 was a disturbance that the European Monetary System could not deal with. This reunification led to a significant recession the country's economy (Agenor et al., 2018).

At the same time, 14 other European economies were in decline for more than a year. The factors that explain the weakening of the European economies are clearly the situation that prevailed in Germany, the continuing slowdown in US economic activity and the real devaluation of the dollar, which shifted global demand from European products to American ones. However, Germany decided to pursue a highly restrictive monetary policy and this decision affected other partners in the European Monetary System, who, while criticizing Germany's decision,

allowed their own interest rates to rise to prevent their currencies from depreciating (Berg et al., 2019).

Unfortunately, governments did not want to be forced to change their currency rates, causing the recession to extend beyond Germany. Germany has denied any responsibility for European problems and has refused to make substantial policy changes. The result of these problems was public dissatisfaction with the Maastricht Treaty. At the same time, the French, dissatisfied with their government's economic policy, were divided between supporters and opponents of the treaty. The rejection of the Treaty by France would mean its end and would weaken the decision of the countries of the European Monetary System to maintain stable exchange rates of their currencies (Eichengreen et al., 2016).

Thus, the first speculative attacks against the Finnish mark and the Swedish krona appeared. Finland immediately retreated, allowing its currency to depreciate significantly, while Sweden temporarily supported the koruna, but speculation only stopped when its central bank let the 15-day lending rate reach 500 percent a year. The British and Italian governments struggled to keep their currencies above their fluctuation margins. Even the French franc became the target of attacks, even though French inflation was lower than the German. Strong intervention by the Bank of France and the Bundesbank, combined with the sharp rise in French interest rates, eventually kept the franc above the exchange rate fluctuation threshold against the mark (Frankel et al., 2019).

So, French voters ratified the Maastricht Treaty on 20 September, giving the European Monetary System another chance to continue its turbulent course. Ireland, depreciated as well as the Spanish peseta for the third time. Behind these events there was a continuing recession in the economies of the European Monetary System, coupled with the Bundesbank's insistence on only gradually lowering German interest rates. The dramatic events of 1992 and 1993 convinced many Europeans that the European Monetary System was in trouble. Many doubted that moving to the European Monetary Union would be progress (Furman et al., 2014).

## **CHAPTER 3 PREDICTION OF MONETARY CRISES AND SPECULATIVE ATTACKS BASED ON ECONOMIC THEORY**

### **3.1. Theoretical models of foreign exchange crises**

A look back shows that since the collapse of the Bretton Woods fixed exchange rate system in the 1970s until today, many currency crises have occurred, such as in Latin America, Asia, Europe, with serious consequences for the global economy. The crises of the 1990s that occurred in different economies provided important information on the causes of crises in the foreign exchange market. The first step in analyzing and explaining monetary crises was on the occasion of the crises and the collapse of the fixed exchange rate regime in Latin America in the 1970s, since then the first generation models were developed where they form the basis for the analysis of the phenomenon. Then, for the understanding and analysis of monetary crises, 2nd and 3rd generation models were developed, based on different assumptions, especially regarding speculative attacks, as will be presented below. There are three different models, which do not compete but explain different situations (Gerlach & Smets, 2017).

#### **3.1.1. First generation models**

This model argues that the crises are due to the conflict between a stable exchange rate and an expansionary fiscal policy (budget deficits, increased public investment). First-generation models were developed after the balance of payments crisis in Mexico in 1973-82, in Argentina in 1978-1981 and in Chile in 1983. The first crisis model was proposed by Nobel laureate in economics Paul Krugman (1979) based on the work of Salant and Henderson. Krugman argued that crises occur when we have a steady deterioration in economic growth as opposed to an attempt to set the exchange rate.

According to him, a country will face a speculative attack when its macroeconomic policy contradicts the maintenance of an exchange rate system. If the government of a country finances its budget deficits with domestic credits, then the country's foreign exchange reserves will decrease due to capital outflows and the foreign exchange balance will collapse. The economy is falling victim to speculative attacks. At the time of the speculative attack, speculators are selling the domestic currency en masse for dollars and depleting foreign exchange reserves (Kaminsky & Reinhart, 2018).

The first-generation model focuses on the money market, to explain how a currency crisis manifests itself in an open economy, which has pegged its currency to the dollar. The increase in the amount of money led to high inflation, but the pegging of the currency to the dollar did not allow them to depreciate, resulting in current account deficits. When these fell dangerously the central banks were forced to let go of the fluctuations of their currencies which depreciated very quickly (Obstfeld, 2018).

A feature of the first generation models is that the country operates continuously with a primary deficit. This forces the government to use foreign exchange reserves or to borrow. But this cannot be done indefinitely. There must be tax reforms to find money or the government to print money to increase revenue, but this is incompatible with maintaining the exchange rate. First-generation models predict the collapse of the fixed exchange rate regime, because of continuing budget



deficits and growing debt. This prediction contradicts the 1997 Asian monetary crisis. This inconsistency has led many observers to reject the fiscal explanations for this crisis (Ozkan & Sutherland, 2017).

According to the first generation model, immediately after the speculative attack, the government adopts the regime of free floating exchange rate and money supply begins to increase with the increase of domestic credits. In this case, the floating exchange rate will also increase with the same rate and from one point onwards is greater than the fixed exchange rate, no matter how high the level at which a fixed exchange rate is set. Therefore, the first generation model predicts that the fixed exchange rate regime can not survive when the monetary authorities plan to offset the effects of an attack and the speculators realize these plans. One problem that arises with first-generation models is that speculative attacks are predictable. Uncertainty, however, is an important element in explaining the recent monetary crisis. Market participants do not know exactly when a speculative attack will occur or when and how much the exchange rate will change if an attack occurs (Obstfeld, 2018).

### **3.1.2. Second generation models**

The main disadvantage of the first generation models is that they present the behavior of the government quite automated and the collapse of the system is a given. In addition, as mentioned above, the collapse of the fixed exchange rate system is due to government policies that are not in line with maintaining a stable exchange rate, financing budget deficits, while speculative attacks are the symptom that negatively affects its macroeconomic figures. Therefore, the monetary crisis is due to the functioning of financial markets. More specifically, the first generation models assume that the first action of the government is to print money to cover its

budget deficit, while the CB will aggressively sell its foreign reserves at the risk of depletion until it manages to maintain a stable exchange rate (Sachas et al., 2019).

In the second generation models this is not a given, in fact the policies that have the potential to pursue are more, governments can pursue fiscal policies to shape their balance of payments, this means that the domestic policy that will be implemented will affect the moves of funds. At the same time, in addition to intervening in the foreign exchange market, CBs have other tools to protect the exchange rate, while they can at the same time implement stricter monetary policies which, of course, involve political costs. It is worth noting that the cost of maintaining a stable exchange rate is a matter of hedging and not just intervening in the foreign exchange market and depleting foreign exchange reserves. It is important that macroeconomic figures are kept in balance, because the government's attempt to set one size will have an impact on another. Subsequently, not all speculative attacks stem from adverse macroeconomic variables, but investor expectations and government credibility play an important role in second-generation models (Flood & Garber, 2016).

Although second generation models have many features in common, they differ in critical aspects. These models assume that the crises are due to the macroeconomic costs of consistent exchange rates when the economy has a high unemployment rate. These models were developed after speculative attacks in both Europe and Mexico in the early 1990s (Flood & Marion, 2014).

The economic figures are consistent with maintaining a stable exchange rate system, a speculative attack may occur if foreign exchange market participants believe that the government will pursue an expansionary monetary policy after abandoning the fixed exchange rate. These models tried to explain the crisis of the European Monetary System 1992-1993, where it proved that supporting an exchange rate target with the use of high interest rates is economically unprofitable. This happened in Germany with the union of East and West Germany, when the central bank had raised interest rates to curb inflation. Because European currencies

were linked to the European ECU by a system of limited exchange rate fluctuations, other countries were forced to devalue their currencies against the mark or raise their own interest rates to stabilize their exchange rates. This has resulted in a slowdown in growth and an increase in unemployment (Henderson & Salant, 2018).

This situation has raised various expectations among investors. They withdrew from the market the coins that were in danger of depreciating. The governments of the countries were obliged to fight the reduction of growth and unemployment, to implement an expansionary fiscal policy which according to the first generation models increases the chances of devaluation and public debts. Some models show that an unexpected shock or sudden change in the macroeconomic environment may cause the authorities to abandon the exchange rate system (Jeanne, 2009).

On the contrary, other models show that crises can occur because of currency speculation. If speculators believe that a stable exchange rate will be maintained because it is backed by the central bank, then the speculative attack will not occur and the currency will survive. But if they think that the government can not support the exchange rate firmly, because the implementation of macroeconomic instruments has a high cost, then there will be a speculative attack and the currency will collapse. Such currency crises can also occur from the behavior of a herd of speculators, who make decisions based on limited information and rumors and function as a self-fulfilling prophecy (Obstfeld, 1986).

From the analysis of the first generation models, it is found that the collapse of the system of the fixed exchange rate is considered inevitable. This is because the economic policy pursued is not consistent with maintaining a stable exchange rate for a long time. In the models of the latter, a similar situation is not observed. Even if a fiscal policy is consistent with maintaining a stable exchange rate system, a speculative attack on the hryvnia, provided there is a change in fiscal policy, can cause a crisis in the economy (Lahiri & Végh, 2013).

### **3.1.3. Third generation models**

In the third generation models of monetary crises the main problem is liquidity. Many crises are directly related to the financial sector. According to them, distortions are often created in the balance sheets of banking institutions and companies due to exchange rate fluctuations. Businesses and financial institutions lend in foreign currency and lend in domestic, taking a very high risk. A devaluation of the currency will clearly increase the cost of loans while making further credit much more difficult. In addition, if a country has a short-term debt greater than its foreign exchange reserves then it runs a very high risk of not being able to repay its obligations to foreign creditors. Financing long-term investments with short-term borrowing will lead to a reduction in investment and productive activity, increasing the likelihood of a monetary crisis (McKinnon & Pill, 2014).

Third-generation models were developed after the 1997-1998 Asian crisis because this crisis could not be interpreted by previous models. The crisis began with the devaluation of the currency in Thailand in 1997 and spread to other neighboring countries such as Indonesia, Malaysia, South Korea, the Philippines but also Russia and Brazil (McKinnon & Pill, 2014).

The financial system plays a central role in these models. In these countries, the country's businesses borrowed at low interest rates and made profits in domestic currency. This made companies vulnerable to impending exchange rate changes and dependent on changes in investor behavior. A massive outflow of capital from a country would lead to a devaluation of its currency and would cause problems in the balance sheets of companies that borrowed foreign currency. The outflow of capital created huge deficits in the current account balance (Obstfeld, 1987).

In the case of Asia, the main cause of the crisis was the excessive expectations for the development of the countries. The investment funds that

entered the area were large, with the consequence that when the excessive expectations for growth were not met, to create panic and capital flight.

Third-generation models refer to twin crises. It is a combination of currency and financial crises, where current account deficits, government guarantees for banks and financial structures that are not possible play an important role. When there are no supervision rules, corruption, wrong monetary policy, then there is a financial crisis, which in combination with the lack of investor confidence can lead to capital flight abroad. A banking crisis is the harbinger of a currency crisis (McKinnon & Pill, 2014).

## **CHAPTER 4 CHAPTER 3: EXCHANGE CRISIS IN PRACTICE: THE CASE OF STABLE EXCHANGE RATE**

### **4.1. Bretton Woods Crisis**

#### **4.1.1. Historical Bretton Woods System Overview**

After the interwar period, consultations were held on the reform of the International Monetary System (IMF). The US delegation supported the need for exchange rate stability, while the British delegation supported the flexibility in conducting economic policy. On July 22, 1944, at the Bretton Woods Conference, 44 countries decided on a sustainable monetary system (Mason & Asher, 1973).

It was decided to establish the International Monetary Fund (IMF) for the purpose of international monetary cooperation, the development of world trade and exchange rate stability. Each country set its currency exchange rate with the dollar with a range of  $\pm 1\%$ , while the dollar was pegged to gold at \$ 35 per ounce (Barro & Gordon, 2014).

The IMF facilitated countries with financial problems and imbalances in their balance of payments. Each country gave a share depending on the size of its international trade and its economic situation. When a country had a trade deficit, it could immediately borrow 25% of its share and, in respect of the remaining amount, under the control of the fund to determine that it was taking appropriate measures to address its problems (Burnside et al., 2013).

A country could also adjust its central exchange rate in consultation with the Fund. From 1959-1967 the system had the characteristics of a fixed exchange rate

mechanism. In 1969 the first amendment of the articles of the agreement was made and A new reserve asset called the Special Drawing Right (SDR) was created (Burnside et al., 2013).

The first monetary crisis of the system erupted in 1969, when rumors of a revaluation of the mark against the dollar led to massive capital inflows into Germany and freed the mark from the fixed exchange rate regime. Another serious crisis occurred in 1971 when the US trade deficit led to the bleeding of gold reserves (Caballero & Krishnamurthy, 2017).

The UK deficit also raised expectations for the pound sterling. European countries have tried to convert dollar reserves into gold. This led President Nixon in 1971 to halt the dollar to gold conversion to protect US gold reserves and thus put an end to the system (Calvo, 2016).

The story of the collapse of the Bretton Woods system is just the same story of the failed attempt of countries to compromise on the rules of the system. For many economists, US macroeconomic policy measures were the mistake that led to the collapse of the fixed exchange rate system. The expansionary US fiscal policy of the 1970s led to the need to devalue the dollar. Rumors of a devaluation of the dollar have caused capital outflows from dollar securities and increased money supply in other countries (Chang, R. and Velasco, 2017).

International crises have gradually led to the abandonment of both the dollar and gold, as well as the stable exchange rates of the currencies of industrialized countries against the dollar. The weaknesses of the Bretton Woods system led many economists to propose the introduction of a floating exchange rate system before 1973 (Eichengreen, 2007).

#### **4.1.2. End of the Bretton Woods system**

The system was dismantled between 1968 and 1973. In August 1971, US President Richard Nixon announced a "temporary" suspension of the dollar to gold. This crisis marked the system collapse. The attempt to revive the fixed exchange rates failed. Since the collapse of the Bretton Woods system, IMF members have been free to choose whatever form of exchange they wish (other than tying their currency to gold). Many feared that the collapse of the Bretton Woods system would bring the period of rapid growth to an end. In fact, the fluctuation of exchange rates was smooth, and was certainly timely (Christiano et al., 2015).

#### **4.1.3. Conclusions from the Bretton Woods crisis**

The central conclusion drawn from the crisis and collapse of the Bretton Woods agreement is that when the exchange rate between currencies is determined on the basis of a single currency, which is the currency of the country itself and at the same time the only reserve currency, then it can not be guaranteed that the country with the central reserve currency will pursue policies that will always keep the defined gold ratio unchanged (Corsetti & Mackowiak, 2014).

In particular, the United States, after 1965, due to the Vietnam War, made a large increase in spending, which was financed by public borrowing. The government issued bonds, which were bought by the central bank (FED), so there was the phenomenon of debt monetization. With this process the bank increased the amount of money offered. The increase in money supply had two effects (Corsetti & Mackowiak, 2014):

The first result, in relation to the country itself, is the increase in inflation, based on the equation of the quantitative theory of money. Under the equation, increasing the money supply, given that the velocity of money circulation and the amount of product produced is constant, creates a corresponding increase in the



price level. Under normal circumstances, rising inflation leads to an increase in the real exchange rate, so either the country will have to devalue its currency, or other countries will have to revalue their own currency (Daniel, 2018). As the US dollar was the central reserve currency, the US did not devalue its currency, while other countries were reluctant to revalue their currencies. Through debt monetization, the US has been able to finance its current account deficit by increasing borrowing (Daniel, 2018).

The problem is that other countries have had no way of forcing the US to take action to limit the amount of money, either through monetary or fiscal policy, so they have lost confidence that the US could continue to maintain the exchange rate. dollar to gold, so they feared that the US would inevitably devalue their currency. As a result, many countries sold their holdings of US dollars to buy gold (Corsetti & Mackowiak, 2014).

In order to keep the exchange rate at the specified level, the US between December 1967 and March 1968 proceeded to sell gold worth 3 billion US dollars. On the one hand, the decline in gold reserves and, on the other hand, the continuing decline in other countries' confidence in the US dollar led to the abandonment of the Bretton Woods system (Corsetti & Mackowiak, 2014).

One of the important conclusions from the Bretton Woods collapse is that currency rates should reflect both the true size of economies and the expectations for a change in economic policy. The United States, having greater economic power than other countries and having designated the dollar as the currency of significant trade and as a reserve currency, acquired a monetary power that allowed the country to shape its own monetary and fiscal policy, with no possibility of other countries interfering in its decisions (Andrews, 2006; Cohen, 2006).

Under normal circumstances, the US government would have to take measures to limit the current account deficit and the budget deficit in order to maintain the US / gold exchange rate. However, because US governments had

decided to pursue expansionary monetary and fiscal policies to finance the Vietnam War - which, according Christiano et al., 2015, was the main cause of the Bretton Woods collapse - and the other countries did not have the power to push for policy change, eventually the system collapsed. Therefore, from the above data it can be concluded that maintaining an exchange rate at a certain level requires a strong political will to take decisions that will not jeopardize the change of that exchange rate. This conclusion will be extremely useful when examining the case of the crisis in Argentina and other countries in the following chapters.

#### **4.2. European Monetary System (EMS) Crisis**

In the Bretton Woods system each member country had a fixed exchange rate against the dollar and therefore the exchange rates of the other currencies were also fixed. Since the collapse of the system in 1973, European countries have sought to curb intra-European exchange rate fluctuations. The European Economic Community (EEC) later became the European Union and consisted of many countries. EU countries sought to coordinate their monetary policies and exchange rate stability in the late 1960s.

The incentives that led to the adoption of the euro (Christiano et al., 2015):

Exploring Europe's role in the global monetary system.

The transformation of the European Union into a truly integrated market.

The first important step on the road to European monetary integration was the European Monetary System (EMS) 1979-1998. The European Monetary System (EMS) was an agreement between the central banks of the Member States of the European Economic Community, aimed at maintaining exchange rates between Community currencies within certain limits and financially supporting interventions

in foreign exchange markets. It was established by a decision of the Bremen European Council (1978).

Reasons for the creation of European Monetary Cooperation (Christiano et al., 2015):

1) Exploring Europe's role in the global monetary system

2) The transformation of the European Union into a Unified Market

Objectives of the EMS are:

1) To create a united Europe and to remove all obstacles to the capital market in all European countries.

2) To improve the Common Agricultural Policy

The EMS has two components:

a) The creation of an artificial accounting unit called the European Monetary Unit (ECU)

b) A fixed exchange rate system, known as the Exchange Rate Mechanism (ERM). The ERM was a managed float exchange rate system where the currencies of the participating countries could fluctuate within defined zones. The EMS was a way for EU countries to address their monetary concerns.

The eight members of the European Monetary System's exchange rate mechanism (France, Germany, Italy, Belgium, Denmark, Ireland, Luxembourg and the Netherlands) decided in March 1979 to operate a formal network of fixed exchange rates. From March 1979 to September 1992 there were a total of 11 monetary redefinitions of the EMS. For a period of five and a half years after January 1987, the EMS did not face severe monetary crises. Through a political cooperation and exchange rate alignment, the fixed EMS exchange rates not only survived but also grew, with the accession of Spain in 1989, Britain in 1990 and Portugal in 1992. In September 1992, Britain and Italy withdrew. by the EMS

exchange rate mechanism. This was followed by devaluations of the Spanish peseta, the Portuguese escudo and the Irish pound (Christiano et al., 2015).

The inability of the EMS to keep exchange rates between Member States within strictly defined limits has resulted in the devaluation of some countries' currencies. In general, Italy and France, which were high-inflation countries (until 1987), had to devalue their currencies at regular intervals against the ECU in order to maintain their competitiveness with low-inflation countries, such as Germany. This has created high unemployment in these countries (Christiano et al., 2015).

The EMS was unable to keep the exchange rates of the Member States stable without simultaneous fiscal, fiscal and political consolidation. As pointed out by Fratianni and von Hagen (1992), inflation in Italy and France during the period 1979-1987 was limited by Germany's presence in the EMS and this reduced the need for higher real appreciations of the German mark. At the end of 1992 the national macroeconomic problems became more acute and so the fixed exchange rates of the system were abandoned. High German interest rates have made the German mark stronger against other currencies. The reunification of East and West Germany in 1990 caused an economic upheaval that the EMS could not deal with because it did not meet the necessary standards. Germany was able to determine the monetary policy of the EMS and this had costs for other countries. The German central bank (Bundesbank) refused to reduce the discount rate and speculators sold the currencies of other countries en masse. During the crisis, central bank intervention was unable to counter speculative attacks on foreign exchange markets. The dramatic economic events of 1992 and 1993 convinced many Europeans that the EMS was problematic (Christiano et al., 2015).

### **4.3. Crisis in Argentina**

### 4.3.1 Overview of the crisis in Argentina

One of the most dramatic crises of recent years occurred in Argentina from December 2001 to January 2002. For most of the 1990s, Argentina outperformed most other Latin American countries in terms of growth. For a decade, the Argentine peso had a stable exchange rate against the dollar at 1/1. From January 2002 the fixed exchange rate system changed to a floating exchange rate system. The peso depreciated to 0.25 against the dollar. The government declared bankruptcy, ie suspension of debt payments. Inflation has risen, as has unemployment. 50% of households fell below the poverty line (Heyman et al., 2011)

Due to inflation, the prices of Argentine products started to increase in the international markets and this led to a decrease in exports and an increase in imports. This resulted in a negative trade balance that had to be balanced through borrowing. The 1/1 exchange rate made imports cheaper and hit exports. So the debt gradually increased into dollars and domestic production was destroyed. The IMF provided loans that were disappearing due to tax evasion (Mussa, 2002). In 2001, outflows of capital peaked. Citizens began to fear that the banks would go bankrupt and began to withdraw deposits from banks. The government, in order to avoid a massive flight of funds, imposed restrictions on transactions - known as "corral" - which caused social unrest. The new government abolished the fixed peso-dollar exchange rate and the country was excluded from international markets (Kimbal, 2014).

The crisis in Argentina is one of the most extreme. Real product fell by 15% and it took many years to return to the previous level, because poverty and unemployment were high (IMF, 2003) because it could not reduce its budget deficits and proceed with other reforms. The situation in the country was very difficult due to the large deficit after the crisis in Mexico. The IMF gave a new loan and thus put an end to the possibility of a sharp stoppage of payments. The central

bank reserves in the period 2001-2003 had practically evaporated, while the exchange rate had skyrocketed (Fanelli & Heymann, 2012).

On January 1, 2002, the Argentine Congress elected Eduardo Duhalde as the new President. On January 6, 2001, the implementation of the Public Emergency Law and the reform of the exchange rate regime marked the end of the convertibility plan. First the peso depreciates from 1 peso per dollar to 1.4 pesos per dollar. Later, the exchange rate will become fully floating, which allows the peso to depreciate even more. The economic and social impact of the crisis is enormous. As shown in the following figure, the outputgap (outputgap) after 2000 was dramatically investigated, reaching even 16%, which represents the great recession that prevailed in the country. Unemployment also jumped to 18%, while prices remained virtually unchanged. As a result of the deteriorating economic situation, the proportion of Argentines living below the (national) poverty line rises sharply from the already high 25.9% in 1998 to 57.5% in 2002. Partly due to its strong devaluation peso, Argentina's economy begins to recover during 2002. When the IMF stopped providing new loans in December 2001, Argentina completely lost access to external financing. To regain access to the international financial markets the government must restructure the debt for which there was insolvency. (Fanelli & Heymann, 2012).

The historical periods of the Argentine crisis are described in the following periods:

A) 1989 - 1997: Fight against inflation

When inflation reached an extreme annual rate of 3.080% in 1989, political support for tackling high inflation once and for all increased. Carlos Menem became Argentina's new president the same year and introduced a series of economic reforms.

Initially, plans for economic stabilization and liberalization were put in place. Among other things, the reforms included the privatization of state-owned

enterprises, the deregulation of the economy, the removal of trade barriers and the state of reform. With the implementation of the reforms, Argentina has won great praise, especially from the IMF. Also on Wall Street, Argentina had become one of the most popular emerging markets. The country was able to borrow relatively cheaply in US dollars and became the largest issuer of emerging market bonds at the end of the last decade. This made the country increasingly dependent on foreign capital. (Fanelli & Heymann, 2012).

Second, a successful plan to tackle hyperinflation has been launched. The 1991 conversion plan, which set the Argentine peso one-to-one against the US dollar, laid the groundwork for the (temporary) stabilization of exchange rates. According to the monetary council, Argentina could now freely convert pesos into dollars. Since then, bank deposits and dollar loans have become widespread. Finally, expansionary fiscal policy was to stimulate the economy and help restore economic growth. Following the implementation of these reforms, the Argentine economy entered a period of economic growth between 1991 and 1997. Only the increase in production in 1995 was negative due to the so-called tequila crisis in Mexico. The rapid return of high economic growth in 1996 led Argentina's economy to be strong enough to withstand external crises. This further strengthened the confidence of the policies implemented, including the convertibility plan. (Fanelli & Heymann, 2012).

#### B) 1998 - 2001: Loss of competitiveness

The outbreak of currency crises in Asia, Russia and Brazil increases borrowing costs for emerging markets such as Argentina. In addition, a significant change in Brazil's exchange rate policy has had a major impact on Argentina's economy, with Brazil being one of the country's major trading partners. In 1998, Brazil ended its own peg to the US dollar, which led to a strong devaluation of the real thing. This helped the Brazilian economy recover, but had a major impact on the Argentine economy, as it reduced the competitiveness of many Argentine producers.

During the 1980s, Argentina's economy was characterized by hyperinflation, international debt, and recessions. In the early 1990s, the Argentine government introduced a series of economic and monetary reforms, including the introduction of the Argentine peso against the US dollar at a rate of 1 to 1. Under this monetary council regime, Argentina was only able to expand the peso portion of the supply relative to its net inflows in US dollars. The impact of inflation policy was almost immediate. In particular, while in 1992 inflation was 14%, in 1993 it decreased to 6% and in 1994 it reached 2%, while the GDP growth rate decreased, but from 1996 it started to recover again. (Fanelli & Heymann, 2012).

#### **4.3.2 Conclusions from the Argentine crisis**

The conclusions that can be drawn from the Argentine crisis are multidimensional. The first important conclusion is that the adoption of a stable exchange rate and the pegging of the regional currency of a country to the currency of a strong country - and indeed, the strongest economy in the world - requires the country to take measures so that it can always support that mooring. In the case of Argentina, while a number of structural changes were required in the country's institutional environment, these changes did not take place (Spiller & Tommasi, 2003). Governments in Argentina and the country's institutions as a whole have a short-term vision, aimed at serving their interests, without a long-term strategy. According to Spiller & Tommasi, Mariano (2003), politicians in Argentina made decisions based on their political interest and re-election, while the institutions operated with amateurism, taking decisions at the suggestion of the political system.

According to Spiller & Urbiztondo (1994), when the political leadership of a country has its political interest and re-election as its main guide, then the quality of the bureaucratic mechanism of the state (directors of ministries and agencies, etc.)



decreases, because Governments appoint members of their party apparatus to positions of responsibility and decision-making, with the result that the state apparatus does not function responsibly and with a long-term horizon in the interest of the country. While the country had decided to merge with the US dollar, however, it had not reformed its economic system, liberalized the labor market, carried out a productive transformation and did not aim to create primary surpluses that could support it. in a disorder of the economy. In contrast, governments had a high-benefit plan and did not control massive tax evasion (IMF, 2004).

The country's public debt increased every year and especially after 1997 it skyrocketed. With such a level of debt, international investors have now questioned Argentina's ability to repay the debt, leading to a sharp rise in the country's borrowing rates. At the same time, the country, due to the aforementioned policies, after 1993 began to record a general general government deficit. The continuous increase in deficits has resulted in even greater difficulty in finding funds, as the new deficit each year increases the public debt. A major blow to the country was the crisis in the Brazilian real, which significantly reduced the exports of Argentina to Brazil, which was a strong trading partner. At the same time, there was an increase in the exchange rate of the US dollar against other currencies, so the currency of Argentina also appreciated, as it was pegged to the dollar. Thus, the Argentine crisis, is a combination of bad economic size, bad decisions and bad times. Thus, the crisis in Argentina could have been avoided if different decisions had been taken to reduce such a large debt and not allow the recording of deficits (Spiller & Urbiztondo, 1994).

#### **4.4. Conclusions from fixed currency exchange rate crises**

The analysis of exchange rate crises in fixed exchange rates showed a number of common elements. First, the fixing of the fixed exchange rate is based on

the macroeconomic variables of the economies. Therefore, when there is a change in these figures, while at a floating exchange rate there would be a change in the exchange rate, in the case of fixed exchange rates, measures should be taken to bring macroeconomic figures back to the previous level. For example, if a government decides to pursue an expansionary fiscal policy, this will lead to an increase in the current account deficit, if that expansionary policy is financed by external borrowing, or by a reduction in savings in the event that financing comes from domestic borrowing. In any case, this decision will lead to an increase in domestic prices, which, in turn, will create a loss of competitiveness of the country. With this given, the real exchange rate will change and will not correspond to the specified nominal exchange rate. In order to support the exchange rate, the country will be forced to sell some of its foreign exchange reserves, which, however, are limited. Thus, the participants in the foreign exchange market, seeing that the country will not be able to support the exchange rate, proceed to sales of its currency, resulting in the creation of an exchange rate crisis (Huang & Lynch, 2013).

A second case of exchange rate crises in currencies with fixed exchange rates is the change in economic figures in other countries. As mentioned in the case of Argentina, the country could have a capital inflow from its exports to Brazil, which was its largest trading partner. However, the crisis in Brazil has reduced these exports to Argentina, depriving it of the opportunity to improve its trade balance and consequently its current account balance. Also, the strengthening of the US dollar automatically led to a strengthening of the Argentine peso, so the country lost part of its international competitiveness. Another parameter of exchange rate crises in a country's fixed exchange rate is whether it is possible for other governments to control the country's macroeconomic decisions. As analyzed in the case of Bretton Woods, European countries did not have substantial ability to intervene in US decisions to extend their lending to finance the Vietnam War, so they stopped trusting the US ability to support its exchange rate. dollar with gold (Harrison & Geng, 2018).

Thus, exchange rate fluctuations in fixed exchange rates are distinguished by the fact that countries can not support the level of the fixed exchange rate, either due to decisions of governments on macroeconomic variables or due to international economic conditions. There are two main parameters that can be identified as common in this type of exchange crises. The first parameter concerns the country itself and mainly the government decisions. If any government decisions are not taken on the basis of a fixed exchange rate and provided that it is observed, then an imbalance between the nominal and real exchange rates is recorded. The second parameter concerns the international environment and the money market. If money market participants believe that governments will not take steps to bring the economy back to equilibrium with the fixed exchange rate, then they are selling the currency, anticipating the abandonment of the fixed exchange rate. (Huang & Lynch, 2013).

# **CHAPTER 5 EXCHANGE CRISIS IN PRACTICE: THE CASE OF VARIOUS EXCHANGE RATE**

## **5.1. The 1987 US Dollar Crisis**

### **5.1.1. Overview of the 1987 US Dollar Crisis**

After the end of World War II, European economies experienced an economic boom that lasted until the early 1970s. created positive expectations for investors. This climate has led to an increase in investment and employment. Developed countries used expansionary monetary policies to provide employment, but this increased global inflation. Currency instability has been around since the mid-1970s, as the floating exchange rate system has experienced financial crises. Due to the two oil crises of 1973 and 1979, the value of the dollar increased significantly against other currencies, because oil transactions were made in dollars. It is rather unlikely that industrialized countries would be able to keep exchange rates stable with the inflation caused by the oil crises. From 1981 to 1985, the US trade balance was in deficit, while the dollar continued to rise against other currencies due to speculation. The results of the US fiscal expansion after 1981 show the stabilizing properties of floating exchange rates. Industrial economies would not easily overcome the two oil crises if they were forced to maintain stable exchange rates. The absence of controls on the movement of funds would lead to speculative attacks (Roll, 1988).

With fluctuating exchange rates, many countries have been able to reduce controls on capital movements that have been imposed in the past. In September 1985, the finance ministers of the five richest countries, the United States, Japan, Germany, France, and the United Kingdom, met and decided to reduce the value of the US currency, pursuing an interventionist policy in the foreign exchange markets.

In February 1987, the seven richest industrialized nations met in Paris and decided to stop the dollar from slipping further by stabilizing the dollar within a  $\pm 5\%$  range. The dollar remained stable until October 1987, when the global financial crisis, known as "Black Monday", broke out. A chain reaction of market anxiety caused a sharp drop in world stock markets within a few hours. In the United States, the New York Stock Exchange (Dow Jones Industrial Average) fell 22.6%, which remains the largest daily decline in stock market history. Such a big drop was accompanied by a huge increase in volatility, over 5%, something unprecedented (Paulus, 1988).

The events of Black Monday are helpful in highlighting the concept of globalization, which was new at the time, proving that financial markets around the world had become interconnected and technologically interconnected. Many countries have pursued expansionary monetary policies to prevent the global economy from being affected by the impending economic downturn. However, rising inflation in the 1990s forced them to pursue restrictive monetary policies. Exchange rate stability was abandoned as a policy goal of the 1990s and 2000s. Governments sought to create the conditions conducive to economic growth.

After 2000, international external imbalances widened dramatically. The following figure shows the evolution of the euro / dollar exchange rate and the difference between the quarterly interest rates. Until last year, the two variables seemed to be strongly correlated. This should not come as a complete surprise. In a globalized world, interest rate differences greatly affect foreign exchange markets, and we can assume that the euro and dollar futures record average levels of the respective portion of the two yield curves. Since 2005, changes in expected monetary policies appear to have been the driving force behind recent exchange rate fluctuations - at least until last year.

Then the correlation is reversed. But this is not entirely surprising. Ultimately, interest rates are supposed to affect exchange rates. Currency traders borrow at a low interest rate currency and lend at a higher interest rate. In this way,

they push the value of the former down against the latter. But this requires that borrowing be relatively easy and that foreign exchange risk (or risk aversion) be low. What happens if these situations are destroyed? The impact of return disputes will suddenly diminish.

The question is whether it was the cessation of risk-taking behavior that the country took during the financial crisis that affected the foreign exchange markets. If the effect of differences in expected exchange rate returns is a function of reduced risk aversion, a sharp increase in risk aversion will exacerbate higher interest rates versus lower interest rates. Figure 8 shows what happened last fall for about twenty coins. It gives the level of the one-year interest rate at the beginning of September 2008 and the change of their nominal real exchange rate over the next two months. The relationship is clear the higher the interest rate before the shock, the greater the subsequent fall in the exchange rate. The sharp appreciation of the low dollar and yen yields, especially after the bankruptcy of Lehman Brothers, seems to have been the direct consequence of the sharp increase in aversion to risk.

### **5.1.2. Conclusions from the 1987 US dollar crisis**

The crisis in the US dollar in 1987 has different characteristics from the crisis in Argentina mentioned above, mainly because the US was the largest economy in the world, while Argentina is a peripheral country. However, in both cases some common features can be identified. What happened in both countries was a capital outflow, which resulted in a change in foreign exchange reserves. However, in the case of Argentina the outflow of capital brought about a significant crisis in the overall banking system of the country, while in the case of the USA the central bank was able to ensure that the banking system was stable, since it would operate as a bank of last resort. The function of the central bank as the final financier of banks, in case they have capital difficulties, or there is a large

withdrawal of deposits, acts as a mechanism to reassure depositors and prevent the spread and transmission of the crisis/ Therefore, the stability of the banking system allows a country to achieve economic growth even if an unexpected crisis occurs. Thus, the intervention of the Fed allowed the US to regain growth, while in Argentina, on the other hand, the banks collapsed, resulting in the overall collapse of the economy (Paulus, 1988).

Another conclusion from the US dollar crisis is that capital inflows can allow an economy to overcome the crisis. While in the case of Argentina - as in the case of the Asian countries that will be examined in the next chapter - the funds that left the country did not return to it and there was a sharp cessation of the inflow of new capital in the opposite case After a relatively short period of time, investors returned after the US dollar stopped depreciating in 1988 and by the summer of 1989 the stock market had fully recovered from pre-crisis levels (Mundell, 1992). Therefore, it is concluded that even in the event of a crisis, if the economy has productive forces then its exchange rate will strengthen (Cottarelli & Giannini, 2002).

## **5.2. Asian crisis**

### **5.2.1. Overview of the Asian crisis**

The countries of East Asia are of great importance to the world economy. They are considered a paradise for foreign investors, offering many employment opportunities. From 1980 onwards, Asia, the largest continent, grew faster than the

others. Countries such as Singapore, Taiwan, South Korea and Hong Kong surprised with their rapid economic growth, which is why these countries were named Asian Tigers. For three decades before the financial crisis in Asia, Indonesia, Korea Malaysia and Thailand, there was an impressive record of performance of rapid economic growth, low inflation, macroeconomic stability and strong fiscal ratio, high savings rates. The growth of the economies of East Asia has proved that it is possible for a country to grow rapidly. Characteristic of the success was the high rate of savings and education, to which they had placed great emphasis. Since 1987, the central bank of Thailand has set the exchange rate at 25 baht per dollar. Stable exchange rates and high interest rates attracted short-term capital, with the result that in 1996 external borrowing, which reflected the current account deficit, was 8% of GDP (Khan et al., 2005).

The East Asian monetary crisis started in Thailand at the end of June 1997 and stabilized in the last quarter of 1998. During 1996, too many skyscrapers were built for offices. First the real estate market and then the stock market began to fall. Some economists have argued that expected future deficits were a key factor in the Asian monetary crisis. In early 1997 speculators, expecting a possible devaluation of the baht, led to a loss of foreign exchange reserves. The banking sector was on the verge of bankruptcy due to bad loans to individuals within the banking sector. Asian economies are facing a severe financial crisis. The weaknesses of the economies were enough to lead to the crisis (Khan et al., 2005).

The Thai baht crisis can be analyzed in the context of a third generation model. The cause of the crisis was the current account imbalance. The balance sheets of commercial banks and companies showed a state of imbalance, as commercial banks borrowed in the short term in foreign currency and lent in the long term in domestic currency, while corporations borrowed in foreign currency and made profits in domestic currency. This made it difficult to finance the current account deficit.



The cause of the crisis was also the dependence on foreign capital investments, the insufficiency of foreign exchange reserves, but also the great interconnection between the political system and the financial sector. As Corsetti, Pesenti & Roubini (1999) point out, the governments, wanting to strengthen their position, on the one hand left the inflow of international funds unchecked and on the other hand guaranteed the loans granted, resulting in generous credit, a fact which led to a bubble in values, without, however, an increase in gross capital formation. The simultaneous recession in East Asian economies exacerbated the problems and led to a sharp decline in real GDP. The slowdown in growth, the large current account deficit, the problems of the financial system, raised expectations for the devaluation of the currency, and the baht came into the sights of speculators. All attempts to keep the exchange rate stable against the dollar had failed. Many currencies, especially in Southeast Asia, have lost more than 60% of their value against the dollar/ Hong Kong has suffered several trials since the crisis. The state of economic growth was followed by the crisis, with the displacement of investments and the reduction of consumption. These attacks led to a sharp rise in interest rates and a deep recession. (Khan et al., 2005).

The monetary crisis came as a surprise to many observers, as countries had positive economic growth and were quickly plunged into economic chaos. Current models are insufficient to explain the crisis in Asia. Following the Asian crisis, international investors closed their foreign exchange positions in emerging markets. This crisis has caused a wider crisis internationally and in distant countries such as Russia and Brazil. The emerging markets crisis, which began with the devaluation of the Thai currency, has provoked much criticism. Some Westerners blamed Asian politics where politicians had close ties and contacts with businessmen.

Some Asian leaders attributed the crisis to the machinations of Western financial institutions, and almost all criticized the IMF. The crisis in Asia has convinced almost everyone that there is a need to reconsider international monetary relations. One reason is that the problems of Asian countries seem to have arisen

from their interconnections with international markets. The second reason for reviewing the international financial system was the contagiousness of the crises through the international financial markets.

To reduce the economic damage caused by the crisis, the affected countries have taken remedial measures. In late 1997 and early 1998, the IMF provided \$ 36 billion to support reform programs in the three worst-hit countries - Indonesia, Korea and Thailand. The IMF provided this financial support as part of international assistance packages totaling nearly \$ 100 billion (APECSC, 2000). In these three countries, unfortunately, the initial reluctance of the authorities to introduce reforms and take other confidence-building measures led to a worsening of the crisis, causing exchange rates and stock markets to fall, which was more than a reasonable estimate of economic fundamentals. data. This oversupply in the financial markets exacerbated the panic and added to the difficulties in both the corporate and financial sectors. In particular, the price of foreign debt in national currency has risen sharply. While uncertainties persist in Indonesia, commitments to adjust adjustments have been strengthened. (Khan et al., 2005).

### **5.2.2. Conclusions from the Asian crisis**

One of the main conclusions of the Asian crisis is that the exchange rate should not be taken as a parameter determined by the decisions of central banks and the adoption of the respective monetary policy, but is determined so much by the overall decisions concerning the economy of a country. as well as from the international economic environment. The main axis of determining the exchange rate, as it became clear in the Asian crisis, are the capital flows to and from the countries.

When investors realize that a country that is accumulating a current account deficit will either have to take drastic fiscal policy measures and freeze wages to

reduce the deficit, or will have to abandon the exchange rate (Krugman, 1979). If speculators and investors expect the government not to take restrictive measures but instead to take expansionary monetary and fiscal policy measures, then they are selling the country's currency, expecting lower interest rates, resulting in a lower exchange rate. The government is forced to sell foreign currency using its foreign exchange reserves, however these are not infinite, resulting in the devaluation of the currency (Obstfeld, 1994).

However, there are additional reasons, in addition to the current account balance, that can lead to a change in capital inflows and outflows to and from a country. International investors are investing in a country in anticipation of a currency appreciation. This revaluation can come either from the productive strengthening of the country, with an increase in the surplus in its trade balance, or precisely because of the inflow of capital itself. If the country fails to convert increased capital inflows into productive activity, then the country will have increased its current account deficit, leading to a devaluation of the currency. So, international investors are leaving the country and now there is a crisis in the banking system. Similarly, as Miller (1996) points out, if there is an exchange rate crisis then domestic depositors will convert their funds into foreign currency to protect themselves from devaluation, so the devaluation will occur as a self-fulfilling prophecy.

According to Khan et al., 2005 the Asian crisis is a result of the inability of countries to convert foreign capital inflows into productive capacity. Asian governments have allowed the uncontrolled inflow of foreign capital, which has led to rising prices of domestic assets and values (real estate and stocks), without taking any measures to curb inflationary pressures and allowed prices to be speculated at home. without increasing the real productive base of the economy. The authors also note that the corruption in the political system and the poor quality of governance, which did not take measures to control the banking system and the functioning of the markets, contributed to the Asian crisis.

### **5.3. Crisis in Mexico**

#### **5.3.1 Overview of the crisis in Mexico**

In recent years, many countries, mainly with weak economic structures, have not been able to respond to the internationalization of economic actors and have experienced a sharp decline in the living standards of their citizens. One of these countries was Mexico. As of November 1991, Mexico had adopted a fluctuation exchange rate regime. The central exchange rate of the dollar per peso was set at 3.24 pesos per dollar, with margins of + -6%. In 1994 it was a model country, whose policy attracted foreign investment. It had signed a free trade agreement (NAFTA) with the United States and Canada, which reduced trade tariffs with those countries. The result of the agreement was a large investment flow (Santiso, 1999).

The uprising in the Chiapa rural area, as well as the assassination of presidential candidate Colosio in March 1994, changed the economic climate and increased investment risk, leading to a 10% devaluation of the peso. ». The central bank increased credit expansion to curb rising interest rates. The increase in imports caused a worsening of the current account deficit and a decrease in foreign exchange reserves. The current account deficit reached 7% of GDP. Rumors of a new devaluation of the currency caused a new decline in stocks. The massive outflow of funds forced the government to release the peso, which was followed by free circulation.

The Mexican currency lost its value and the public debt in pesos soared, plunging the country into recession. The crisis was greater in the financial sector. Many banks went bankrupt and thousands of Mexicans went bankrupt. The situation was helped by the Free Trade Agreement (NAFTA), which entered into force in

January 1994. The then US President Bill Clinton believed that Mexico should be helped because of its importance to US investment and employment. They gave a loan of 40 billion. Dollars and thanks to that the economy started to recover. The wounds of the crisis, however, remained and are fresh. Wages were reduced by 20%. Today the economy is on its feet, but at a slow pace of growth. The peso crisis can be analyzed in the context of the first generation model. From 1954 to 1976 Mexico had maintained a stable peso exchange rate of \$ 12.50 / \$. Even after the collapse of the Bretton Woods fixed exchange rate system in 1971-1973, Mexico was able to maintain this fixed interest rate. During the 1970s, the Mexican economy grew rapidly, leading to high inflation and rising external debt. (Santiso, 1999).

### **5.3.2. Conclusions from the crisis in Mexico**

A number of conclusions can be drawn from the crisis in Mexico. According to some authors, the crisis is due to the lack of a well-established institutional framework in the country and the lack of rules, transparency and control. For example, (Santiso, 1999) reports that governments in Mexico, while under pressure to liberalize markets, eventually decided to privatize banks, but the privatization was done in terms of opacity, corruption and fraud, resulting in privatized banks to operate uncontrollably and without experience, giving generously loans, which could not be collected.

Also, the over-excitement of the markets for Mexico, regarding the prospects for the country's participation in NAFTA, was often driven by the entanglement between the speculators and the government, which wanted to have increased capital inflows without, however, proceeds to no substantial institutional intervention, but to an uncontrolled liberalization of markets (Musacchio, 2012).

According to other authors (Flood & Marion, 1989), the Mexican crisis can be described as a self-fulfilling prophecy, as international investors have fled the

country due to growing political uncertainty and the risk has increased. of the country, resulting in an increase in the risk premium (risk premium). In order for the central bank to maintain its exchange rate with the dollar, it proceeded to sell dollars to buy a peso and to support the exchange rate. However, the central bank gradually ran out of foreign exchange reserves, which was helped by the issuance of short-term government debt securities in US dollar clauses that gave very high yields, so domestic depositors placed their savings in these securities, so in dollars. . The Mexican government raised interest rates in a bid to curb capital outflows and attract foreign investors, but confidence was lost as everyone expected the currency to depreciate, which eventually happened. In this regard, Musacchio (2012) states that the privatization of banks brought euphoria to investors, which euphoria was based on their expectations. However, as the investors themselves did not notice the fulfillment of their expectations, they immediately withdrew their funds from the country, leading the exchange rate to collapse. The main conclusion from the Mexican crisis is that capital inflows should not be considered, in and of themselves, as a positive parameter, unless there is a conversion of them into productive capacity. It is also concluded that maintaining the exchange rate should not be the main goal of a government, but the exchange rate should be seen as a component of government policy.

#### **5.4. Conclusions from exchange rate crises on floating exchange rate currencies**

The analysis of exchange rate crises in floating exchange rate coins showed some common elements and characteristics. The first point concerns the evolution of the state of the economies, which is becoming more dynamic and intense than in the fixed exchange rate regime. International inflows and outflows of capital play a key role in shaping economies. An inflow of foreign capital into an economy simultaneously increases the current account deficit and at the same time increases

the amount of money within the economy. Given the equation of quantitative theory of money, increasing the amount of money leads to an increase in prices. As a result, an increase in the exchange rate is recorded, as the foreign currency is sold and the domestic currency, which enters the country, is bought. This inflow of money is mostly placed in securities such as bonds and shares and in the real estate market. The increase in the share price pushes for a further inflow of money from foreign investors, while funds are also placed in the real estate market, resulting in a price spike and the creation of "bubble" conditions.

As the country begins to accumulate current account deficits, there are two reactions from international investors. The first reaction is the withdrawal of funds from the country, for fear that the government will take measures to cut spending and raise interest rates in order to limit imports and curb rising prices. This withdrawal of funds limits the liquidity available in the market, while at the same time, due to the increase in interest rates, investments are limited. The second reaction, which is a consequence of the first reaction, is the withdrawal of deposits by domestic depositors, who are afraid that the banks' funds are not enough to cover their needs, so they may close (Bernanke & Gertler, 2015).

Another condition for creating a crisis in a floating exchange rate regime is the economic situation of other countries and their monetary policy. If the other economies are in trouble, then there are two possibilities: either the capital in these countries is limited, so the inflow of capital to the country stops, or the returns in these countries decrease, so the capital flows to the country, resulting in the launch of the real exchange rate. In both cases, the country is facing a crisis in its exchange rate, as its competitiveness decreases, either due to lack of capital (first case), or due to rising prices and a jump in the current account deficit (second case). (Bernanke & Gertler, 2015).

## **CHAPTER 6 EXAMPLES OF SPECULATIVE ATTACKS IN THE INTERNATIONAL FOREIGN EXCHANGE MARKET**

The European Exchange Rate crisis in 1992 was a possible trigger for speculative attacks on the Italian pound, the British pound, and the French franc (the weakest currencies in the system at the time). The Exchange Rate Mechanism was established in 1979 in an effort to keep the value of European currencies stable. In particular, the European Exchange Rate Mechanism was a system introduced by the European Economic Community on 13 March 1979, as part of the European Monetary System to reduce exchange rate volatility and achieve monetary stability in Europe, in preparation for Economic and Monetary and the introduction of the single currency, the Euro, which took place on 1 January 1999 (Bernanke & Gertler, 2015).

The old Exchange Rate Mechanism (ERM) was designed to address the difficulties caused by the speculative flow of capital generated by differences in growth and inflation between the Greater Europe and France, in particular Italy and Germany. The flows were usually in the same direction: in the German car, causing real appreciation, monetary turmoil, difficulty in managing domestic monetary policy by the Bundesbank, and restrictive policies in France and Italy. The final structure of the ERM was a compromise between two objectives. France, in particular, sought to mitigate the restrictive effects of low inflation in Germany and the devaluation of the German mark on the country's domestic economic activity and other DM-related economies. Germany, on the other hand, has sought to use the Mechanism to encourage convergence with German monetary and fiscal policy and German preferences for low inflation in the face of high growth and employment rates (Bernanke & Gertler, 2015).



But concerns that European citizens might reject the Maastricht Treaty caused a stir: currency speculators began to pounce against the weakest European currencies. In September 1992, Britain and some other European countries were forced to devalue their currencies. Only the French franc managed to cope with the times.

### **6.1. The case of the Italian pound**

By January 1992, Italy had begun to gradually lose foreign exchange reserves. However, the currency crisis first manifested itself only in June of the same year as the prices of Italian bonds began to decline, first in the futures markets and later in the sight markets. Investors' pessimism about the course of Italian bonds was clearly fueled by developments related to events such as the failure to meet the convergence criteria, the referendum in Denmark, the delay in forming a government, the imposition of a new tax on deposits, and Moody's regarding Italy's debt. Foreign investors began selling Italian bonds in June and July, pushing interest rates in the interbank market up by at least 300 points. In August and September, there was a shift in portfolios from domestic government bonds to foreign ones. Italian banks have worsened the situation by selling Italian pounds in an attempt to cover their open positions arising from lending to low-cost currencies such as the German mark (Rose et al., 2014).

Some market participants took the first devaluation on 13 September 1992 as a sign of a further devaluation of the Italian pound, as it was now clear that the central bank was unwilling to maintain the exchange rate regardless of cost. At the same time, investors began to differentiate themselves from the Italian pound. The fund managers sold Italian securities, bought foreign exchange in the current market and also bought German securities.

At the same time, the futures market was characterized by a liquidation problem, which prevented the closing of open positions in the Italian pound. The

depositors of the banks exchanged an extremely large amount of deposits in Italian pounds with deposits in German marks, in the same banking institution. It is noted that this exchange of deposits from one currency to another took place without a time delay as these were current accounts. In addition to financing Italian sellers' domestic sellers, banks also provided credit to foreign sellers, lending to foreign banks through credit lines and overdraft facilities (Rose et al., 2014).

The Bank of Italy responded to these outflows with extensive interventions financed either by the bank's foreign exchange reserves or by short-term borrowing from the Bundesbank. At the end of August 1992, the value of Italy's gross foreign exchange reserves amounted to 20.5 billion US dollars, while in January of the same year it amounted to 42 billion US dollars. On September 17, 1992, the Italian government withdrew the Italian pound, and on September 30, the value of the stock rose to \$ 25 billion. The Bank of Italy, throughout the attack on its currency, used the policy of raising interest rates as a defense mechanism, gradually increasing the discount rate from 12% to 15% between July 5 and September 4. . The rates of repurchase agreements (Repos) which are mainly used to control overnight interest rates (overnight interest rates) increased from 14.75% to 16.5% on September 4 (Edwards & Savastano, 2014).

As a result, interbank interest rates were higher than those of repurchase agreement rates. On September 16, the interbank interest rate overnight rose to 36% and quarterly interest rates rose to 20%. Finally, the Bank of Italy reduced the amount of financing of the repurchase agreements it offered to the commercial banks. The problem faced by the Italian monetary authorities, supporting the Italian pound, was that due to the composition of government securities (government paper) increases in market interest rates, affected the financial situation of the state. Specifically, 29% of its debt was in government bonds, 48% in floating rate bonds and the rest in medium-long-term bonds. Also as interest rates rose and government bond prices fell, the government had to deal with a significant increase in costs from

issuing and making new bonds available to the public during the crisis (Enders, 2013).

The Bank of Italy through its intervention in the secondary bond market (open market operations) tried to reduce the outflow of foreign reserves by increasing by 14.2 trillion pounds, the number of government bonds held (September 1992). In the fortnightly auctions of government bonds, the Bank of Italy bought 1 trillion Italian pounds with an interest rate of 17.9%. Finally, the government in September self-financed from the reserves of the Bank of Italy, through the current account it maintained in it, with 17.5 trillion Italian pounds (Enders, 2013).

## **6.2. The case of British pound**

In 1992 the recession in Europe became more and more intense due to the reunification of Germany which cost about 150 billion marks per year (Vaslin, 2012). To address this problem, Germany has strengthened its currency by raising interest rates, forcing other EMS countries to follow suit. Britain as a member of the EMS will face a critical dilemma, on the one hand the increase in interest rates would lead to a further recession while on the other hand the devaluation would lead to the abandonment of the EMS and a shift in floating exchange rates. This situation was exploited by big speculators where they actually bet on the indecision of the British government and made huge profits (Smith, 2011).

In 1992, a crisis broke out in Europe after the devaluation of the Italian currency by speculative actions, and a few days later followed the collapse of the British pound with the main culprit being the Hedge Fund "Quantum" by George Soros. As mentioned before, the EMS functioned as a defense mechanism for inflation as well as for stabilizing exchange rate fluctuations in order to create a favorable environment for investment. This mechanism worked effectively for a

long time, the currencies could move against others within certain limits, while the country had the opportunity to negotiate the devaluation of the currency with the other members. At that time the Berlin Wall falls and the unification of Germany follows, many residents of East Germany move west with expectations for work and social benefits creating inflationary pressures, this led the German CB Bundesbank to increase the . This made the mark attractive while the British pound and the Italian pound were found to be trading at the lowest levels allowed by the EMS. Europe is now in a dilemma, Germany had to cut interest rates to attract less capital while Britain and Italy did the opposite. CBs also had to intervene in the foreign exchange market by selling brands and buying pounds and pounds. If this measure did not work then they should be devalued (Smith, 2011).

In 1992 hedge fund manager and close associate George Soros placed a strong emphasis on Britain. She had noticed how volatile her housing industry was and decided to invest. At the same time, interest rates were found to be quite volatile and when the Bank of England raised them, they became immediately apparent to households. If the Bank of England raised interest rates to protect its currency within the EMS then there would be negative consequences for debtors as there would be a reduction in consumption which would make the recession even more severe. There was a possibility that the British authorities would stop raising interest rates and let their currency depreciate. The EMS was not a system of perfectly stable exchange rates and therefore governments had much room for monetary policy due mainly to 46 capital controls. "Quantum" understood that the leader of the system was the mark due to its stability and also German monetary policy was strongly influenced by other countries (Smith, 2011).

This happened for two reasons: 1. Germany was a strong economy in the EMS and with the lowest inflation. 2. The Bundesbank was an institution independent of the political leadership and its main objective was to maintain low inflation. (Giddy, 1996) In view of the above, it was reasonable for Germany not to reduce interest rates as long as the costs of reunification with East Germany created

budget deficits, a fact that put more pressure on sterling. Britain was forced to keep interest rates at the same level as Germany due to the EMS. One hope for a change in this situation was the signing of the Maastricht Treaty to create a common currency, the euro, which Germany viewed positively. The Bundesbank's stance, however, was unchanged, with a 25-year-old British finance minister pushing for a more relaxed German monetary policy by sharply asking the German central bank governor why they were not cutting interest rates. The governor of the Bundesbank had a firm view and considered that the independence of the bank was very important and therefore their view would not affect it, this meant that interest rates would not change course.

A little later in another meeting of the central bankers, the German governor of the Bundesbank Schlesinger stated that he could not guarantee the course of interest rates in the future, while apart from the change in Germany's monetary policy for the benefit of all members, he stressed that he did not particularly believe in stable relationship of currencies. The big investor George Soros was also in the audience where he listened very carefully, after a personal conversation between the two men, Soros was now convinced that Germany was in favor of a monetary union, of course due to Germany's tradition of low inflation the other countries they would have to pursue 47 restrictive policies and endure austerity otherwise they would have to choose to devalue their currency. Soros now had the information he needed to act on sterling, and he and his close partner Stanley Druckenmiller would play a leading role in the drama that followed. Following the devaluation of the Italian pound by speculative actions, it was time for sterling to strike, which led to the decision of the British Minister of Finance Norman Lamont for an aggressive purchase of sterling. The next day the governor of the Bundesbank in an interview told the media that there will be redefinitions of European currencies. This statement was tantamount to calling for the sterling to be devalued, embarrassing the British leadership.

The two Quantum powers understood that they had to act immediately as it was now clear that the Bundesbank would not cut interest rates to support the pound sterling within the mechanism, so the devaluation was a given. They had already bet \$ 1.5 billion against sterling since August, but after these statements by the German commander it was clear that they had to act more aggressively. From the next day they started selling sterling to any interested buyer like central banks of other countries. On the other hand, the Bank of England, although able to sell sterling during the trading day, the bank remained closed for trading, while on the other hand the Soros hedge fund was selling at a steady pace. Just the next day, Soros orders sales to double, with the opening of markets in London, the Bank of England is trying to boost sterling by buying \$ 300m while raising interest rates from 10% to 12% to make it more attractive. , without much effect against the course of Quantum that reached \$ 1 billion. Investors also knew that a policy of raising interest rates to protect the currency in the midst of a recession was not rational (Smith, 2011).

It is obvious that the logic was simple, the hedge fund borrowed the revalued sterling by buying cheaper coins with it, then as soon as the sterling depreciated then it buys sterling again to repay the loan. This action is called short selling, which means borrowing a 48 bond and selling it immediately to repurchase it at a lower price, this margin is the profit from these transactions. The Bank of England continued to buy sterling as it was required by the EMS, in effect transferring taxpayers' money to international financial institutions and hedge funds (Dhar, 2016).

It is a fact that the intervention had failed, then the Governor British Prime Minister John Mayor that interest rates should be raised as a pound's defense measure. At the same time, the British Prime Minister had reservations about this action because the political cost for him would be very high, so he suggested that they wait as he believed that the markets would begin to decline. Then the government would be faced with another dilemma, it would have to choose between

recession or devaluation and it would probably tend towards the second option. The balance of power had now changed as with the free movement of capital private equity had a strong influence on the markets. Until then, it was impossible for anyone to realize that a hedge fund with less than 50 employees could compete with a government for power. By September of that year, the Bank of England had spent more than \$ 700 million to support the pound, causing a slight appreciation (Dhar, 2016).

Shortly afterwards, interest rates were announced to rise by 2% to strengthen the British currency, but to no avail. It is worth noting that at that time it was estimated that Britain was losing hundreds of millions of pounds while at the same time the political leadership was embarrassed as the exit from the mechanism was now inevitable and responsibilities had to be shared. The Prime Minister then orders a further increase in interest rates by 3%, but to no avail. However, the British Minister of Finance supported the exit from the EMS, something they viewed with great horror. On Wednesday, September 16, 1992, George Soros's hedge fund sold 7 7bn, putting even more pressure on the other side. of the UK by the EMS simultaneously with a devaluation of sterling 15% (Mallaby, 2011).

### **6.3. The case of French franc**

Following the withdrawal of sterling from the Exchange Rate Mechanism on 16 September 1992, the French franc suffered a severe attack which was initially met with extensive intervention by the Bank of France. The exchange rate was kept slightly higher than the floor value, which prevented the Bondesbank from borrowing. On Monday, September 21, 1992, a day after the referendum and the marginal acceptance of the Maastricht Treaty by the French, a speculative attack on the French franc took place at the opening of the New York currency market. The critical date was September 23, when the Bank of France raised the repurchase rate

by 250 basis points to 13%. The joint statement of the finance ministers and central banks of France and Germany on the stability of the FFR / DM exchange rate contributed to this (Dhar, 2016).

In defense of this central exchange rate, both the Bundesbank and the Bank of France intervened extensively in the foreign exchange market. For the Bundesbank, it was the first time it was called upon to intervene in the foreign exchange market by exceeding its mandatory intervention threshold in order to defend an exchange rate. The market stabilized late Wednesday afternoon, September 23, when there was a reduction in pressure from the New York market and an immediate intra-zone intervention by the Bundesbank. The purchase of French francs by individuals recovered on Monday, September 28, 1992, while at the same time recovering several of the foreign exchange reserves that had been lost during the crisis. As the speculators' positions lasted a month, most of the lost foreign exchange reserves returned to France after a month. By the end of October 1992, gross foreign exchange reserves stood at \$ 30.9 billion.

While initially the Bank of France relied solely on its own foreign exchange intervention, as a method of defense during the speculative attack, later, on September 23, 1992, it began to use its policy of raising interest rates. The Bank of France provides liquidity in the money markets through on the one hand a low priced auction facility with an interest rate of 9.70% per month in September and on the other hand a more expensive operation, the repurchase from 5 to 10 days. Banks, in order to isolate the effect of an interest rate squeeze on speculators, would be able to obtain low-cost financing if the demand for funds came from routine trading requirements. These funds would then be given to the commercial customers of the banks at a key interest rate that would remain unchanged regardless of the fact that market interest rates would have risen considerably. During the crisis, overnight money market overnight rates rose to 25% to 30% over several weeks, as the Bank of France's bonds were not provide the required increased refinancing rates with the required liquidity. With this interest rate system, the Bank of France



was able to increase the cost of funds for speculators without giving them the ability to repurchase or access certain government bonds, while keeping key interest rates low, avoiding the prevalence of a generation of high interest rates in the markets (Dhar, 2016).

## CONCLUSIONS

From the analysis of the issue of monetary crises and the consequent speculative attacks, it is found that the modern globalized macroeconomy is characterized by integrated markets of products, services, capital. There are economic links between different countries, in terms of trade, their currencies, their capital flows and so on. For this reason, various economic phenomena occurred, such as exchange rate fluctuations, exchange rate crises, economic policy problems. The exchange practices of different countries vary. Some are in fixed exchange rate regimes and others in floating exchange rate regimes.

Currency stability has preoccupied governments, as well as many scholars. It is an important factor that affects the whole spectrum of the economy. There are many factors that affect the exchange rate. Everyone affects the exchange rate differently, depending on the country, the currency and the conditions prevailing in the given time period. A strong currency reacts differently and a weak one reacts differently. In any crisis, the policy pursued by each government plays an important role, as well as the behavior of the markets. From this brief analysis it seems that the future of the financial structure is uncertain. Developed economies can be served by the floating exchange rate system and international capital mobility, developing countries do not seem to have a satisfactory alternative and are trying individually to take different approaches.

The choice of exchange rate regime is a key policy issue. If the choice of exchange rate regime is wrong, then the costs for the economy will be high, in terms of international trade, growth, speculative attacks, investment, and unemployment.

The choice of exchange rate must be based on certain criteria among others, efficiency, monetary policy credibility, freedom to pursue monetary policy and economy shielding. However, based on the relevant literature, future exchange

rate crises can be predicted, at least to a significant degree. Of course, there is no doubt that in some cases, there are unforeseen factors, which refer mainly to international developments and are difficult to predict. For example, the sudden onset of an economic crisis in one country can have a negative effect on another country's exchange rate. However, in general, identifying the common parameters of currency crises helps to predict them, since when a country has some of these characteristics, then there is a statistically high probability of having a currency crisis. The main parameter of the forecast concerns the political decisions that the country makes for its fiscal and monetary policy. Whether under a fixed or floating exchange rate regime, governments should take steps to reduce the potential for a currency crisis. The widening of the current account deficit and the budget deficit are important causes of the collapse of the exchange rate. So, if governments take decisions to reduce these deficits, then the exchange rate is temporarily falling, but the markets have confidence in the country and the exchange rate does not collapse. Conversely, if governments pursue policies that widen deficits, with an expansionary fiscal and monetary policy, then there is a lack of confidence and the exchange rate collapses.

Thus, one of the criteria for predicting a currency crisis is the will of the government and its ability to impose difficult measures, which reduce the current standard of living, but are effective in the medium to long term. A second important element in predicting whether there will be a currency crisis is the direction of international capital to a country. If the inflow of funds is not directed to productive investments, but is aimed at short-term profit, then the statistical probability of the country facing a significant foreign exchange crisis increases significantly. Conversely, if international capital is focused on productive investment (foreign direct investment), then there are the conditions for strengthening GDP and strengthening the exchange rate.

In conclusion, currency crises can prove to be extremely detrimental to countries' economies and citizens' living standards. Governments should take steps

to keep their fiscal and macroeconomic ratios in order and should exercise strong oversight and control over the condition of financial institutions to eliminate the possibility of a banking panic. The role of the International Monetary Fund is also crucial, in order to strengthen the countries that are facing unforeseen negative situations, provided that they themselves will take measures that will allow the countries to have stability and long-term development.

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