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Abbreviations

ACFE = Association of Certified Fraud Examiners

DJI = Dow-Jones Industrial Index

ICE = Intercontinental Exchange under NY Stock Exchange

IMF = International Monetary Fund

IPO = Initial Public Offering PwC = PricewaterhouseCoopers

FATF = Financial Action Task Force on money laundering

FED = U.S. Federal Reserve System

FINRA = Financial Industry Regulatory Authority

FOREX = Foreign Exchange Market

MIBTel = Milan Stock Exchange Market Index

OECD = Organisation for Economic Co-Operation and Development

SEC = U.S. Securities and Exchange Commission

TOPIX = The Tokyo Price Index

UNCTAD = The United Nations Conference on Trade and Development

USDIX = U.S. Dollar Index

Introduction

My goal for this thesis is not just to describe the stories that anyone can easily read in books and articles but to figure out what can we learn from financial fraud, resulting bankruptcies and their influence on the domestic and global markets. Beside there always rise the question - why actually such scandals raise so much attention? It seems to be that if a company falls it isn't something out of ordinary. And for that matter - it should be the concern of their shareholders to deal with misuse, theft, errors, ignorance, inefficiency in the company. But in reality, when a fraud is committed in big volumes, it automatically influences not only management and employees of the company itself but day by day all the branches and spheres of domestic economy. If it will also affect the foreign markets is the aim of this thesis to observe and analyze.

Besides how different global financial markets react on corporate scandals? The legal system, the complexity and development of the economy and the time frame influence how the fraud impacts the flow of the market activity. It should be considered how many international counterparties are involved in illegal transactions and machinations, the duration and the state of investment climate, and many other factors that will be discussed further in this thesis.

For economists, corporate bankruptcies and financial frauds are a very important source of information. Any company per definition should be very sensitive to the loss of information and because of that for the researcher it is always difficult to find out what's really going on inside the company. How much money is given to those or other employees of the company or partners? How deep involved are counterparties based on behavior before and after the events? On what principles are based rules between different types of markets and countries? All this is very difficult to quantify because the data in general are one of the key assets of the companies and the markets operate on the basis of free flow, where it is hard to predict the reaction even on same events.

1.1. Importance and structure

Why it is important to explore in detail features of financial frauds and their impact? Knowing the logic of its development and possible impact on company performance can help to minimize its negative influence. Also, it can help to keep company running its business when the fraud is detected efficiently early and, therefore, the ways of resolving negative consequences can be expeditiously worked out.

The type and the size of each particular fraud is crucial in matter of handling it in the best way. Beside it is important for dealing with any bunko to detect correct reason of it in order to eliminate any further possibility of happening of fraud again.

The main aim of my master thesis is to show how significant is the influence of different types of frauds not only on the corporate return, but also observe how it further effects the share price, the stock exchange market and eventually the US Dollar Index with the foreign currency exchange market. Every country has own behavior pattern as well as its currency rates.

It would be also interesting to investigate some particular cases as, for instance, the fall of Enron, Parmalat and Barings Bank. The past experience of fraudulent behavior can help in detecting or even preventing from happening other firms in similar branches or with similar schemes of company activity. As well as such previous experiences influence investors behavior when they what they are dealing with. Fear or excitement of market participants tend to influence exchanges even stronger than expected.

The following subsection presents the objectives of this thesis. Further on, in chapter two the reader is familiarized with background information on the financial frauds, their types and why it is important to distinguish them in terms of economic analysis. Also, will be discussed the currency market and the factors which can influence it, hence it is important to know which of them we should consider in our analysis and how they will impact the results. Chapter three provides detailed background of several frauds, their causes and consequences for the companies and markets. The frauds will be reviewed based on variety of papers, articles in newspaper and information given on the websites of all relevant to this topic organizations and government commissions. Chapter three also provides the reader with analysis of exchange rates between main world currencies and how they are influences by the important market information. In addition, for consideration will be taken different types of illegal financial activities, in different industry sectors, countries and outcome. In Chapter 4 lastly will be discussed conclusions and implications.

1.2. Objectives and Added Value

The aim of this work is to draw a conclusion about (1) the influence power of financial frauds on the stock market and possible shift in the indices, (2), if the scams can make an impact beyond domestic economy, namely on the currency rate of other countries, and, if so, (3) what type of influence and how significant it is dependent on (4) company volume, country and importance of event.

The first objective of this paper is to differentiate financial frauds, discuss their origin and significance. Then sort out which of them are important for further consideration and analysis.

The second objective of this thesis is to answer the question of: How can financial frauds influence the stock market and the exchange rates? Which factors are important for the analysis and what will cause a white noise in observation of events? Which cases should be taken due to their sizes and potential impact?

While some cases are interesting because of management behavior and intentions which leads to changes in expectation of the whole investment segment, other show significance of specific regulations and need of new technologies or rules. Each case will be unique in circumstance of happening, relations to other countries and influence on the global markets. It will be easy to compare and see the difference or similarities. This study aims to add value to research about impact of financial frauds as it covers primary data from markets for a comparison and analysis between domestic, global, stock exchange and currency exchange markets.

2. DIFFERENT FINANCIAL SCAMS OF XX-XXI CENTURY AND THEIR POTENTIAL CONSEQUENCES FOR THE CURRENCY EXCHANGE MARKET

2.1. The concept and different types of financial fraud

In the broad sense, a financial fraud, or scam, is a deliberate, planned distortion of information, which leads to material losses on the account of the object of fraud. In general, financial fraud can be divided into internal (fraud is carried out by employees of the firm and brings losses to the firm itself) and external (schemes are carried out on the part of external firms or individuals who are not employees of the victim company, or the scams are carried out by the firm in relation to its clients). It is a billion-dollar business which is unfortunately only increasing each year. This increase can be surveyed comparing PwC global economic crime studies from 2016 and 2018.¹ The percentage of the companies experienced economic fraud of some kind changed from more than a third to a roughly half within two years. According to a similar study conducted by Ernst & Young, more than 70% of financial fraud that results in losses are planned and carried out by the company's employees or management².

One kind of internal fraud is "occupational fraud" - the use of a position for self-enrichment by abusing or disposing of the stock or assets of the company in which the person is employed.

¹Lavion, Didier; et al. "PwC's Global Economic Crime and Fraud Survey 2018"

Most of these fraudsters use complex financial schemes, often involving white-collar criminals, who are professional employees in the financial sector with special knowledge and skills and are guided by criminal intent. The Certified Fraud Advisers Association (ACFE) inspectors distinguish four main features that are essential in activities that should be considered as occupational fraud³. This activity:

- Illegal and carried out hidden;
- Contrary to the basic responsibilities that a victim company puts on its fraudsters;
- Is carried out in order to obtain a direct or indirect personal profit;
- Brings losses to the firm-victim in the form of assets, profits or stocks losses;

Major varieties of occupational scams are following:

1. Corruption, that is, fraudulent abuse by its position and influence in order to profit, contrary to its obligations to the company or violation of the rights of others (examples of corruption are conflict of interest, criminal schemes of purchase and sale, invoice kickbacks, bid rigging and extortion).

2. Abuse of corporation's assets divided in two different categories such as cash abuse and abuse of inventory and other assets. Among abuses in cash are:

- Cash theft after the funds were accounted in the registries ("cash larceny");
- Cash theft before it was added to the registers and books ("skimming"). This type of fraud can be done by not introducing or introducing lower sales income, "write off schemes", and "lapping schemes" schemes that involve stealing customer funds and covering deficiencies at the expense of subsequent earnings.
- Fake costs ("fraudulent disbursement"). The scammer forces the company to allocate funds for artificially created needs. Basic schemes of fictitious expenses:
 - Cheating with checks: the swindler persuades the company to pay bills for non-existent supplies of goods, indicates overpriced supply prices, etc.;
 - Disputes with payment information: under the pressure of the swindler, the company allocates funds for compensation for artificial losses;
 - Compensation for fictitious expenditures: The scammer demands reimbursement of falsified or over-charged expenditures which he allegedly encountered while performing his professional duties;
 - Falsification of checks: A fraudster is forging or changing checks of his company and withdraws money from its bank account;

³ Occupational Fraud. – Available from: <http://www.acfa.com>

- Fake costs in the registry. The scammer introduces fictitious transactions to the cash register to conceal the illegal withdrawal of funds.

Among the abuses of inventory and other assets, are stealing assets by falsifying acts of sale and transportation and other types of criminal operations, including uncovered theft.

3. Submission of false information about the company (fraudulent statement). This includes falsifying financial and non-financial information. Misleading financial information is mainly provided in the form of financial statements, the figures of which do not correspond to reality. This includes overvaluation of profits or incorrect valuation of assets, including in the report non-existing profits, concealment of liabilities and losses. Falsification of a non-financial nature includes the falsification of recommendations or a diploma of education, falsification of internal and external documents of the company. It should be noted that internal machinations, and especially the falsification of financial reporting, were the main reason for the bankruptcy of companies considered in this master thesis.

Among the external financial fraud, one can distinguish fraud in the investment area, as a form of fraud that can directly affect the stock market, and, consequently, indirectly the currency market, because the foreign exchange and stock markets are interdependent. Other external criminal schemes are aiming at misleading consumers, in particular, financial pyramids, which, on a large scale, could lead to a loss of a significant part of the population's confidence in financial institutions, an increase in cash circulation and, consequently, even cause inflation.

The following main types of fraud among the investment institutions are distinguished⁴:

1. Occupational abuse or conflict of interest that arises when an investment bank analyzes the prices of its own customer or its potential clients. The employee of the bank responsible for the stock valuation and analysis may have motives for assessing shares of current or potential clients higher than they actually are, in order to maintain positive business contacts. This is a clear example of abuse of office power because shares analysis should be objective. Although due to such actions by an investment bank or brokerage firm, customers can profit (at least in the short term), meanwhile the investors suffer significant losses. The SEC in 2002 fined the investment company Goldman Sachs for "laddering" (SEC v. Goldman Sachs & CO, 2005). The investment bank faced a \$40 million penalty for violating the Rule 101 of Regulation M under the Securities Exchange Act of 1934 by illegally attempting to induce their customers to purchase shares in the aftermarket of certain IPOs. In other words, the company allowed a certain limited number of investors to buy a predetermined number of first-issued shares once they entered the market. This was creating a visibility of high demand for these stocks, respectively, their stock prices increased.

⁴ Investment Fraud Abuses. Available from: <http://www.stockfraudusa.org>

After that, the shares (at artificially inflated prices) were sold to inexperienced investors, generating for the investment bank significant profits.

2. Contracts with "variable annuity". "Floating rate" in the broad sense is a contract that offers the client future payouts on his investment. The size of these payments varies depending on the growth or fall of the price of the securities portfolio in which it was invested. Possibilities of fraud with the use of these contracts include the active conduct of operations at the expense of the client in order to increase their churning and false disclosure, for example, concealing information about possible risks or lowering profits.

3. Providing of false or incorrect information. The broker can hide from the client important facts about the shares of a particular company or publicly support the stock, knowing that these shares are really worthless. As a result of misrepresentation, clients invest heavily in the company, which can be very unreliable and financially unstable (for example, companies with high debts). Thus, UBS Warburg and Solomon Smith Barney among others gave positive ratings to the energy company Enron during 2001 and even a few days before the Enron bankruptcy (this case is discussed in more detail in Chapter 3), encouraging investors with "strong buy" and knowing that they will soon fall significantly in price (Richter, 2008).

4. Unauthorized trading. Legally the broker has the right to buy or sell securities on behalf of the client only if the client signs the relevant documents that authorize the broker to pursue one or another type of activity (2010. Standards of Commercial Honor and Principles of Trade). However, there are cases when brokers open or close positions at the expense of the client without his permission or knowledge: when the client calls the broker to find out the state of affairs in the market, the broker tries to persuade the client to continue to hold shares, on the grounds that the shares have just grown in price or such growth is forecasted in the near future. A certain exception could be, for instance, when the value of margin account at the brokerage firm falls below its requirements, only then the broker may sell without consulting the client in advance (SEC, 2012).

5. Excessive customer trading, or "churning". A broker can perform many transactions in a short period of time in order to increase the amount of commission, mainly by selling stocks that are increasing in price (in order to present the client profit as an indicator of their efficiency) and to hold cheaper stocks. By abusing the client's trust, the broker prefers operations that require a quick decision and attract significant funds, sometimes ignoring the risks associated with such transactions.

6. Disclosure of insider information. In most countries it is unlawful activity by brokers, financial analysts or employees of the company with access to key information, providing certain "advices" to privileged clients, containing important information about the shares (such as the

probable rapid growth or a drop in stock prices in the near future), before anyone else can get acquainted with this information. In the paper of Julan Du and Shang-Jin Wei, researchers have found that insider trading has a negative impact on stock market volatility, and this impact is more significant compared with other fundamental macroeconomic indicators, even after accounting for market liquidity and maturity indicators (The Economic Journal, 2004).

7. The execution of securities transactions contrary to the interests of the client ("bucketing") occurs when the broker confirms the client execution of the order, without actually implementing the specified operation. If the current execution price is higher than the bid price, then the customer simply pays for the higher price. If the price is lower than the price at the time of placing the order, then the client still pays for the higher price, but in this case the broker receives additionally a profit in the form of a difference between the price of the execution and the order (which is the price at which the investor pays the payment).

8. "Front running" - a broker is trading based on information that the client does not already own. A broker or an analyst can, for example, buy up shares of a company just before recommending this company as an extremely reliable and promising to the client (FINRA, 2013).

2.2. Forms of frauds that can influence on economy and stock market

Among the fraud-related investment activities, it is worth highlighting various schemes for illegal manipulation of stock prices and their impact on stock market.

1. "Pump and dump" – one of the most common stock scams - artificially created stock inflation, caused by the dissemination of false information. Fraudsters buy shares of a particularly small or almost unknown company (penny stocks), mainly at low prices, and accumulate a large amount of securities, using unscrupulous brokers to advertise these securities to their clients. Often, the company is presented as having revolutionary new products that will provide future commercial success, or just signed a big deal. As this fake information is circulated, share prices are rising due to customer interest and growing demand. Preferably, such a company does not engage in the specified activities, and the information is brought to the public in order to raise the price of shares. To create the visibility of market demand, fraudsters can divide operations between several brokers and conduct transactions across many countries (FATF, 2002-2003). When stocks reach their highest possible value, they are sold for a big profit, leaving the company in a free fall and the stocks worthless (FINRA, 2016).

2. "Short and distort". This scheme is the opposite to the previous: traders manipulate stock prices, buying them in shorthand and using various techniques to reduce their prices. The main

task of the fraudsters in this case is to stimulate investors' fears: to convince them that the companies whose shares they hold will soon go bankrupt or that the Securities Commission is interested in the companies (as a hint that the company carries out illegal activities). After an artificial panic is created on the market, investors are willing/forced to sell shares and, thus, lower demand - lower prices for these stocks (Glasner, 2002). It should be noted that this scheme became much easier to implement after disclosure of information about the machinations of Enron, WorldCom and other financial scandals, which led to increased caution and distrust of investors. According to some analysts, on the US stock market dominates "Enronium" - increased suspicion of any claims for unreliability of financial statements of a company – the negative rumors are spread much faster and are more “important” than positive information. The fear of bankruptcy of any other large company after Enron could cause movements on the stock market, even when rumors were just “true enough” (The New Yorker, 2002).

3. "Bear raid". The purpose of this tactic, same as in the case of "short and distort", is the game of reducing prices in order to buy stocks in short and redeem them at lower prices. Shares are sold in large quantities, so that fraudsters create the appearance of reducing the attractiveness of these stocks and reducing the demand for them, resulting in lower prices for these shares. Usually for this strategy traders are spreading negative rumors about the companies they want to manipulate.

4. Activities aimed at "cornering the market". The essence of this speculation is the purchase of securities or goods in volumes that allow you to gain control over prices in the market. This kind of speculation (as well as the "bear raid") is illegal, since such speculation is based on manipulating market prices by temporarily obtaining an artificially created control over one or a group of market participants (FINRA, 2016).

5. "Circular trading" occurs when orders for sale are placed by a broker who knows that the corresponding purchase orders, with the same number of shares, price and execution time or just have been placed, or will be placed in the near future. This scheme is considered to be a fraudulent because of the broker's abuse of asymmetric information [SEC, 2010].

Among other types of financial scams, it is also worthwhile to allocate financial pyramids or "Ponzi schemes", which have received their name on behalf of Charles (Carlo) Ponzi - a well-known scammer, who created the financial pyramid in Boston in 1920. In general, the financial pyramid is a scheme which profits from borrowed funds are not paid out by their investment in profitable assets, but by attracting new investors. The organizers of the pyramid maintain a higher market yield in order to make it as attractive as possible and provide a permanent expansion of the financial base of the pyramid and, accordingly, the circle of people who want to invest in it money.

With unscrupulous advertising, a financial pyramid is presented as a highly profitable and reliable investment project, socially useful, with solid guarantees. Pyramids, as a rule, are created on the basis of securities issued as the most convenient and liquid instrument for mass distribution. Due to the fact that it is impossible in a long term to provide a steady flow of new depositors, the money resources at the disposal of the organizers of the pyramid will eventually begin to decrease, limiting the ability of depositors to receive high incomes. Financial liabilities begin to accumulate, "bumping" one another at the narrowing of the cash basis (hence the term "pyramid"). In this case, the organizers of the pyramid allocate a significant part of the money. Over time, when the ability to pay promised revenues is becoming increasingly limited, and financial obligations increase geometrically, investors are exposed to risk expectations, the financial pyramid becomes increasingly unstable, sensitive to any rumors (especially to any negative manifestation of attention from the state authorities to the founders of the pyramid). As a result, at the time of the publication of disgruntled news among investors there is a panic, mass sales (actually "dumping") of securities or other financial instruments on which the financial pyramid was founded, their market rates, respectively, are falling sharply with the fact that the organizers of the pyramid are not able to support their market value and liquidity, that is, investors at the moment of the fall of the pyramid hold impaired financial instruments and bear significant losses. Depending on the situation in which the pyramid originates, financial pyramids can be divided into two groups: the organization of the first group immediately emerges as pyramids, and the organization of the second group become pyramids due to certain circumstances that arise at one of the stages of their development. For example, a company that is experiencing a period of exhaustion of cash resources, that is, a structure that pays dividends, carries out the issue of securities to improve its financial position - entering the pyramid period, that is, turning into a financial organization with signs of a pyramid. By the end of the pyramid period, the financial situation of the company worsens, before it raises the question of paying dividends on sold securities. This period ends with the collapse of the pyramid, the liquidation of the financial structure and the announcement of its bankrupt (SEC, 2018).

So on US stock market small till middle fraud or even fear of such can cause temporal stock market movement, leaving the economy out of it. But in the developing countries, frauds can cause more damage – one even to the rating of the country altogether. Recent development in India shows how after the bank scams of Punjab National Bank this 2\$ billion fraud has caused the decrease in economic growth and weakening the national currency (Goldman Sachs, 2018).

If the country has already a bad reputation in terms of fraudulent loans, the amount of money that should be recovered from the borrowers is more likely to be smaller, because a huge

part of the loans need to be written off. Therefore, the banks will need a fresh governmental “injection” of taxpayers’ money just not to go bankrupt, which means there will be less possibilities to invest money. To compensate this lack, the bank could increase the costs of borrowing, among others ban certain lending instruments. Any ban is likely to cause damage not only to importers but weaken the whole foreign trade. A weak account deficit may weaken the national currency and the economic climate altogether (Quartz India, 2018). The bigger the scam and closer it is to the government – it is more possible the fraud will have stronger influence not only on the stock exchange or currency market but deteriorate the whole economy. Not helpful are in such situation negative ratings from international agencies and investment banks, as far as they not only influence global investment interest but also internal expectation at fiscal growth and long-term resolving of problems.

2.3. Foreign exchange market and factors that can influence it.

The foreign exchange market consists of the entire set of operations in foreign currencies, carried out between all possible financial institutions at current market or determined prices/rates.

Currency transactions include contracts of participants in the foreign exchange market for the purchase, sale, and settlement of loans in foreign currency on specific terms (amount, exchange rate, interest rate, period) with execution on a certain date. Typical foreign currency exchange operations support international trade and investment activity simply by enabling currency conversion – allowing a party to obtain any quantity of one currency while paying for it with according quantity in another currency (Copeland, 2008). The important difference between two main types conversion operations is that the one is not defined by a length in time, while other operations have a length of time and different urgency.

The following types of participants in the foreign exchange market are distinguished:

1. Commercial banks carry out the main volume of currency transactions. At the banks are kept accounts by all other market and they function for a wide range of trading. We can say that banks accumulate (through operations with customers) aggregate market needs in foreign exchange conversions, as well as in attracting/allocating funds and using them across other banks. In addition to executing customer orders, banks can perform transactions on their own account. In general, the foreign exchange market is an interbank market, and the interbank exchange market should be considered when talking about exchange rates and interest rates (IMF, 2017).

2. Companies engaged in foreign trade operations create a constant demand for foreign currency (as importers) and offer foreign currency (exporters), as well as spread and attract free currency balances on short-term deposits. At the same time, these organizations, as a rule, do not have direct access to the currency market and carry out exchange and deposit operations with the help of commercial banks.

3. Foreign investment companies like Investment Funds, Money Market Funds, International Corporations. Named companies presented by various international investment funds, implement the policy of diversified asset portfolio management by distributing funds in securities of governments and corporations from different countries. One of the most well-known funds of this type is George Soros's "Quantum" fund, which conducts very lucrative currency speculation. To this type of companies are also related large international corporations engaged in foreign productive investments like the creation of branches, joint ventures, etc., such as, for example, Xerox, Nestle, General Motors and others.

4. Central banks, whose functions include the management of foreign exchange reserves, the implementation of currency interventions affecting the exchange rate, as well as regulation of the level of interest rates on contributions in the national currency. The largest influence on the world's foreign exchange markets has the US central bank - the Federal Reserve (US Federal Reserve, or FED).

5. Private individuals who carry out a wide range of non-trade operations in the field of foreign tourism, transfers of wages, pensions, fees, purchase and sale of cash currency (IMF, 2018).

6. Currency exchanges, which in some countries with a transition economy carry out the function of currency exchange for legal entities and the formation of a market exchange rate. The state mainly actively regulates the exchange rate using the stock market.

7. Foreign exchange brokerage firms, whose functions include the mediation between the buyer and seller of foreign currency during transactions. Brokers receive for their services a brokerage commission as a percentage of the operation amount. A brokerage firm that has information about requests on the rates is the place where the real exchange rate and real interest rate for previously executed agreements are formed. Commercial banks receive information on the current level of exchange rates from brokerage firms (FINRA, 2010).

There are common major markets: European, North American and Far Eastern. These include major international monetary and financial centers: in Europe - London, Zurich, Frankfurt am Main, Paris and others, in North America - New York, in Asia - Tokyo, Singapore, Hong Kong. One can also talk about the existence of national currency markets with a wide range of foreign

exchange operations (IMF, 2017). As for the international currency market - FOREX (Foreign Exchange Market), it has several peculiarities:

- the international currency market does not have a specific address for transactions - they are carried out around the world;
- there is no specific time of work - trades are around the clock;
- the absence of an external regulator authority - prices are determined solely by demand and supply;
- the largest number of participants and the largest volume of transactions;
- the fastest and the most liquid market - operations are carried out in seconds (Copeland, 2008).

The foreign exchange market, which affects the state of the economy of the whole country, is connected in one way or another with all other financial and commodity markets. Therefore, analyzing the exchange rate should be considered the value of securities, commodity prices and the dynamics of stock indices movements. Since the disclosure of the financial frauds in large companies leads to a sharp fall in the prices of their shares and can cause panic in the stock market, in this thesis we are most interested in the actual impact of stock indices on the currency market, since the fall of stock indices leads to a drop in the national currency. In general, factors influencing the exchange rate can be divided into conjunctural and structural. Among the conjunctural factors of influence on the exchange rate are the following:

1. The state of the economy: rate of inflation, level of interest rates, the balance of payments, the unemployment rate, the monetary policy, the degree of use of the national currency in international settlements, acceleration or delay in international settlements;
2. Political situation in the country (political factor)
3. Level of confidence in the national currency on the national and world markets (psychological factor).

The conjunctural factors are associated with fluctuations in business activity, political and military-political situation, with gossips (sometimes excitement or fear), valuations and predictions. The exchange rate depends on how optimistic or pessimistic the society is about government policy.

The higher the rate of inflation in the country compared to other states, the lower the exchange rate of its currency in the absence of counteraction from other factors. Inflationary depreciation of money in the country causes a decline in their purchasing power and the tendency to decrease of their exchange rate (Gandolfo, 2002).

The exchange rate is influenced by the degree of currency use in world markets. In particular, the prevalent use of the US dollar in international settlements and in the international capital market causes a steady demand for it and maintains this course, even if its purchasing power or US balance of payments surpluses fall (IMF, 2018). In addition, the growth of the US stock market, especially in the 80's and 90's, which attracted tremendous capital from foreign and domestic investors, was an additional source of dollar strength. However, the beginning of the twenty-first century was marked by high-profile financial scandals in the United States, connected among other with the financial machinations of several large companies, which led to a decline in investor confidence, including foreign investors. The purpose of this thesis is to investigate how these scandals have influenced and if, in particular, on the dollar against other major world currencies.

The unemployment rate is the ratio of unemployed to the number of the whole labor force. Growth of unemployment characterizes the recession of the economy, and therefore affects the exchange rate in the direction of decline. On the contrary, for the development of the country's economy, growth and expansion of production reduce unemployment, which increases the exchange rate. In the long run, raising employment rates leads to higher incomes, which stimulates inflation growth rates (OECD, 2018).

Increase of deposit interest rates and yield of securities in a certain currency will lead to an increase in demand for this currency and will lead to its rise in price. Relatively higher interest rates and yield of securities in a given country (assuming absence of restrictions on the capital movement) will lead, firstly, to inflow of foreign capital into this country and, accordingly, to the increase of the supply of foreign currency, its cheapening, and the appreciation of the national currency. Secondly, deposits and securities with higher returns will enable the attraction of national currency funds from the foreign exchange market, reduction of demand for foreign currency, reduction of foreign exchange rate and increasing value of national currency.

With the positive balance of the country's balance of payments, the demand for its currency increases on the side of foreign counterparties, which also contributes to the growth of the national currency.

On the behavior of the market significant impact is made by events that cannot be predicted in advance: the resignation of state leaders, military conflicts, political crises, unexpected results of election campaigns, natural disasters, etc.

Beside conjunctural factors whose impact on the supply and demand of currency is hard to predict, there are also long-term trends that determine the position of a national currency in the currency hierarchy (structural factors). Structural factors include:

1. Competitiveness of goods/commodities in world markets and their changes, which are conditioned mainly by technological determinants. Forced exports stimulate the inflow of foreign currency, that is, the growth of its supply, and ultimately a rise in price of the national currency.

2. An increase in national income triggers an increase demand for foreign products, while commodity import may increase demand for foreign currency.

3. A consistent increase in domestic prices compared with prices in partner markets is aggravated by the desire to buy cheaper foreign goods, while incentives for foreign consumers to buy more and more expensive goods and services are weakened. As a result, the supply of foreign currency is reduced and there is a depreciation of the national currency.

4. In other equal conditions, higher interest rate is a factor in attracting foreign capital and, accordingly, foreign currency, and can lead to a rise in price of the national one. But the increase in interest rates has also the opposite side: it leads to a rise in the cost of credit and suppress investment activity within the country.

5. Level of development of the securities market. The stock market can attract foreign currency directly, but it can also attract national money that would otherwise have been used to buy foreign currency.

To forecast currency rates, it is necessary to know also the main specific events in a country that can be predicted:

- The end of the financial year when companies have to report on their financial activities. For example, in Japan, there are two terms for such reporting - the end of March and September. Before submitting these reports, most corporations are forced to convert their capital into yen, which raises demand for it.

- Pre-election campaigns in developed countries with a stable political system are a phenomenon that can be easily predicted in time, as opposed to the frequent change of governments in politically unstable ones. Regarding the elections, it is believed that in the United States, for example, there is a cyclical economic development related to the election, especially when the current president has the opportunity to put forward his candidacy for a second term: he needs to show the prosperity of the economy to win the election. In addition, the active election campaign of candidates with different views on the further development of the economy brings a certain uncertainty in anticipation of future election results and can have a significant impact on the market.

- National holidays - Christmas, New Year, etc. During these holidays, financial markets in some regions are closed, and there are generally no significant changes in the market.

- Periods of greatest business activity and holidays also affect the financial markets activity.

- G8 or G-10 Summits. During these meetings, significant decisions can be made, which may eventually affect FOREX (IMF, 2016).

As mentioned above, the market also responds to periodic rumors. It is even more difficult to determine their value than to analyze one or another macroeconomic indicator. Rumors appear unexpectedly and arise on any occasion, in which you need to evaluate not only the content of rumors, but also to evaluate the people who distribute them. There is a reaction rule for the market in this kind of situation: “buy the rumor, sell the fact”⁵, where the object of sale is, basically, the US dollar. Since the dollar is the main world reserve currency, in the case of unfavorable rumors, most market participants buy dollars by selling other currencies. In the case of financial maladministration by American companies Enron and WorldCom, discussed in Chapter 3, rumors about possible financial fraud made by large companies’ management should lower confidence in the US dollar and, accordingly, decrease its rate against other major world currencies. The ratio between US dollar and other currencies is defined as the dollar index, the weighted average geometric value of the change in the rates of six world currencies (Japanese yen, Euro, British pound, Canadian dollar, Swiss franc and Swedish krona) against the US dollar. In Chapter 3 the influence of disclosure of information about the fraud on the US currency market is considered based on the change of bespoken index.

3. INFLUENCE OF FINANCIAL FRAUDS ON THE COURSE OF MAIN WORLD CURRENCIES

3.1. Impact of American companies’ machinations on the US dollar.

To investigate the impact of financial fraud in the US on the national currency, two cases of financial scandals were considered: machinations at Enron and WorldCom. The following criteria were considered to select these companies:

1. The amount of damages resulting from fraud amounted to at least \$1 billion;
2. The disclosure of fraud has led to a sharp drop in the stock prices of these companies and has caused panic in the US stock market.

⁵ Webster's New World Finance and Investment Dictionary

To analyze the change in the US dollar under the influence of financial fraud, the dollar index (USD_X) is used in this thesis, which is calculated as the weighted average geometric change in the rates of six world currencies (Japanese yen, Euro, British pound, Canadian dollar, Swiss franc and Swedish krona) against the dollar, as well as separate dollar quotes relative to the euro, Japanese yen and pound sterling (FXStreet, 2018). Just as stock indices reflect the general stock market position, the dollar index gives a general assessment of the US dollar and is determined as follows:

$$USDX_t = 50,14348112 \times (EUR_t)^{-0,567} \times (JPY_t)^{0,136} \times (GBP_t)^{-0,019} \times (CAD_t)^{0,091} \times (SEK_t)^{0,042} \times (CHF_t)^{0,036}$$

The calculation of the dollar index for a basket of six currencies is not random - it is the currency of those countries that account for the bulk of US foreign trade turnover, namely: in the Eurozone 57.6 %, Japan - 13.6%, the United Kingdom - 11.9%, Canada - 9.1%, Sweden - 4.2% and Switzerland - 3.6%. The choice of currencies and their ratios used in the USD_X calculation matches the data used by the Federal Reserve System of the United States in calculating the trade-weighted dollar index (FED, 2018). From a mathematical point of view, USD_X is calculated as the weighted geometric mean change in the rates of six currencies against the US dollar in March 1973 (the date of the introduction of the floating rate system). The dollar index measures the value of the dollar, down to 100.00, namely to the price recorded in March 1973. Considering the change of the exchange rate as a consequence of fraud that results in a decrease in confidence in the national stock market and outflow of capital from the country, I consider the dynamics of rates over two separate time intervals:

(a) the interval preceding the disclosure of information about the fraud, since during this time market could spread rumors and cause relevant actions by investors.

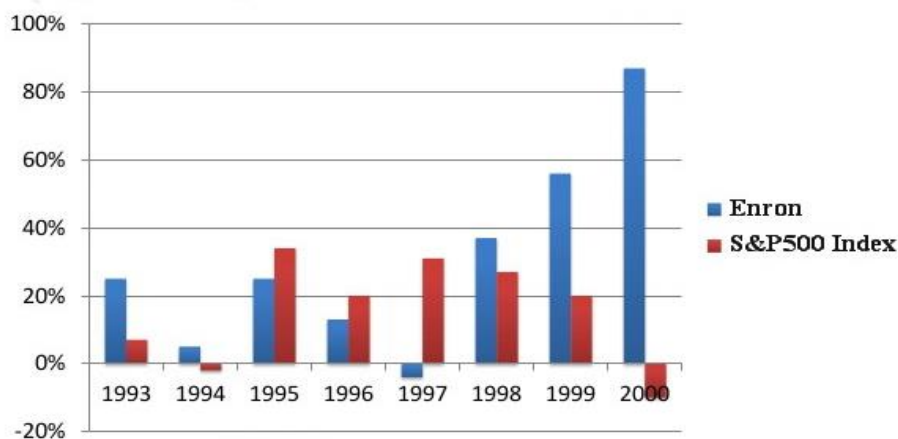
(b) some amount of time after the release of the information, as investors could have needed time to react.

Financial scandals related to the machinations of Enron and WorldCom have shaken the US stock market and have reflected on the reliability of the auditing companies, since in both cases fraud took place through submission of inaccurate reporting (in the form of overestimating profits or concealing losses), and the external auditor of both companies, the fifth largest audit company in the United States - Arthur Andersen, for years "did not notice" and gave these companies a positive rating (Healy and Palepu, 2003). Let's first look on the machinations of Enron Company.

Enron Corporation originated in 1985 because of the merger of two gas companies from Texas and Nebraska and became the first company to own an all-American network of gas

pipelines. During the 1990s, the company reoriented to trade, initially specializing only in gas, and eventually trading with electricity. In addition, the corporation has entered the market of energy futures and other derivatives, which provided it in the future a wide field for fraud. Soon, the company became one of the leaders among traders in the electricity market, and in 2001 took the seventh place in the Fortune 500 ranking [SEC, 2002]. Enron's prices clearly reflect the company's progress: from 1985 to 1990 - from \$5 to \$9 per share, during the next seven years - \$20-30 per share, and in 2000 the stock price reached its maximum value of \$90 per share. Red bars in the graph below are the yield percent per annum of the Standard & Poor's 500, blue - annual percentage yield of Enron. As we can see in the late 90's Enron greatly surpassed the index. Those who bought shares in 1997 and sold it in 2000 could earn a small fortune.

Figure 3.1. Profitability of Enron stocks in comparison to S&P500 Index, 1993-2000



Source: Bloomberg.com

In 2001, due to a general decline in stock market performance, Enron's price fell to 30-40\$ per share, but this drop was insignificant compared to the swift collapse that took place in October-December 2001, when the price dropped below 1\$. As the result of such a fall the NYSE excluded Enron from trades, and since that date they were nominally quoted in so-called "pink sheets", that is in the decentralized OTC markets of low-yielding securities (Calandra/MarketWatch, 2002). Fig. 3.2. displays the dynamics of changes in the share price of Enron.

Figure 3.2. The dynamics of the Enron share price during 1993-2002.



Source: Enron Historical Quotations. Available from: <http://www.bigcharts.com>

The start of the rapid collapse was the publication of a quarterly report on October 16, 2001, according to which the company suffered losses of more than \$1 billion, and it was aggravated after the bankruptcy announcement of the company on December 3, 2001 (Eichenwald/The NY Times, 2002). To determine the nature of the huge losses of the company and their unexpected disclosure, we should analyze the background and the schemes of fraud, carried out by the company's management.

In the mid-1990s, a decision was made to purchase a large amount of energy raw materials to conclude long-term contracts with consumers - utilities - to ensure efficient distribution Enron's gas pipelines. However, the funds for such purchases were not sufficient at that time, and the management did not dare to take credit, fearing a decrease in the company's credit rating in case of overlapping of the balance sheet with debt obligations. Since the bespoke management of the company maintained a large package of options for the shares of Enron, it was mainly interested in the high investment rating of the corporation, as well as in its best financial indicators, which would have contributed to the growth of the share price - in fact this logic explains the motives of the fraudsters when they were distorting data in the financial statement.

Do not wanting to take a loan and thus face the danger of lowering the investment rating of shares, the company decided to resort to securitization, that is, financing for any accounts receivables (Chesney, 2004), as was to take place as follows:

1. The company accumulates assets that will continue to provide cash into one large portfolio and sells it to a third party.

2. From now on, the so-called target company or the special purpose entity, which is created for a specific project, acts as the main actor of the asset portfolio holder. To raise funds for the purchase of assets, the target company issues its own securities (mainly debt obligations of various types of bonds and promissory notes), which are secured by in future generated cash from purchased assets (Narayanan, 2004).

3. The next stage of securitization is crucial for the success of the whole scheme - this is assigning a credit rating to new securities, because in the absence of a high rating, investors will not buy the issued securities, respectively, the target company will not be able to raise funds.

4. If a credit rating has been assigned, the debt obligations of the target company enter the market, where mostly private investors buy them. These obligations are divided into transit and payment certificates. In the first case, the repayment of the obligation is directly related to the proceeds from the assets, that is, the target company serves as the coordinator of the flows. In the case of payment certificates, the target company will reinvest the proceeds from the assets into another project or securities and pay the investors with the income from new deposits (UNCTAD, 2003).

5. At this stage, the target company transfers the proceeds from the sale of its securities to the founder, compensating in this way for the sold assets.

This securitization scheme was developed by Andrew Fastow, Chief Financial Officer of Enron, but he failed to implement it: securitization assets at that time belonged not to Enron but to various gas producers, which greatly complicated the analysis of the portfolio of assets and led to the fact that the target companies were not able to obtain a rating. Then a new scheme was proposed, according to which the securities of the target companies, provided with a portfolio of gas reserves, were offered not to the open market, but to a special group of investors and banks. The scheme was as follows:

1. The first target company was created which issued two types of debt obligations: a class A with a fixed interest and a class B with a floating rate.

2. Also was created a second target company of transit type, which received a loan from a association of banks and bought the bonds of the first target company for these funds. At the expense of interest on bonds, interest on the loan was repaid.

3. Class B bonds were sold directly to the financial department of General Electric Company - General Electric Credit (Narayanan, 2004).

4. The first target company used the proceeds from the sale of its securities to purchase reserves from gas producers.

5. Enron bought gas from the first target company and sold it to consumers (utilities) under long-term fixed-price contracts (Wayman, 2002).

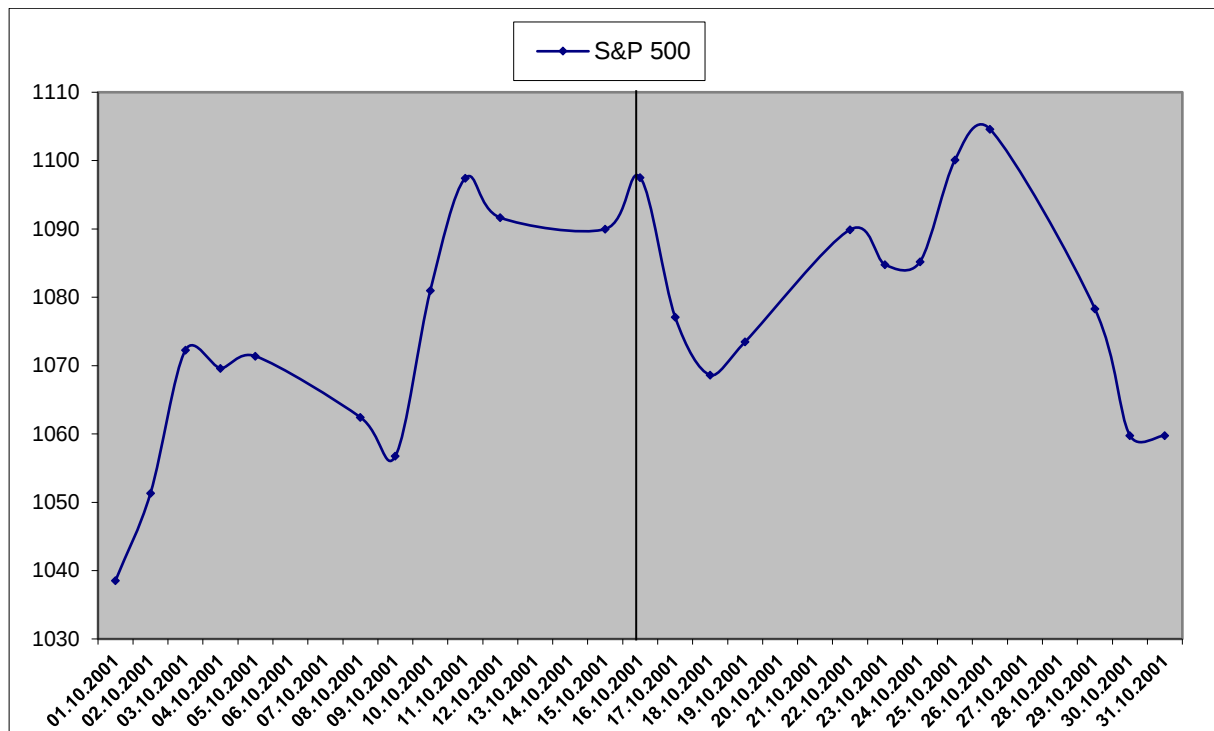
6. The first target company used the money from the sale of gas to repay its obligations to the second target company and General Electric Credit.

The main scheme of the debt-liability withdrawal from the company's balance sheet was developed in above described operations, which, it should be noted, was kept under scrutiny and supervision of Arthur Andersen, senior external auditor of Enron, and was approved by it (UNCTAD, 2003). The fact that high figures were fictitious and existed only on paper, that is, in the accounting report, did not substantially change anything: rating agencies are primarily looking at reporting, therefore, the Enron rating increased, as did the demand for company shares.

As mentioned above, in the disposal of Enron were raw natural resources for which the company had concluded long-term contracts with utility companies. When considering how to account for the profits from these contracts, the company's management succeeded in a new tactic - mark-to-market - according to which long-term gains were made to the balance sheet in the current year, before the real funds were actually received. The purpose of using this method was to show additional profit for improving the credit rating. Since all future income was reported as received, in order to maintain a given growth rate it was necessary to constantly generate new lucrative deals, and what important - in the immediate near future. Always trying to win investors support, Enron eventually lost it completely after the report was released on October 16, 2001, and the bankruptcy was announced on December 3, 2001 (Healy and Palepu, 2003).

Let's now consider the impact of this fraud on the US stock market using as an example S&P500 index and analyzing the two-week period before and after the date of disclosure of the information about the fraud on October 16, 2001.

Figure 3.3. Dynamics of the S&P500 index

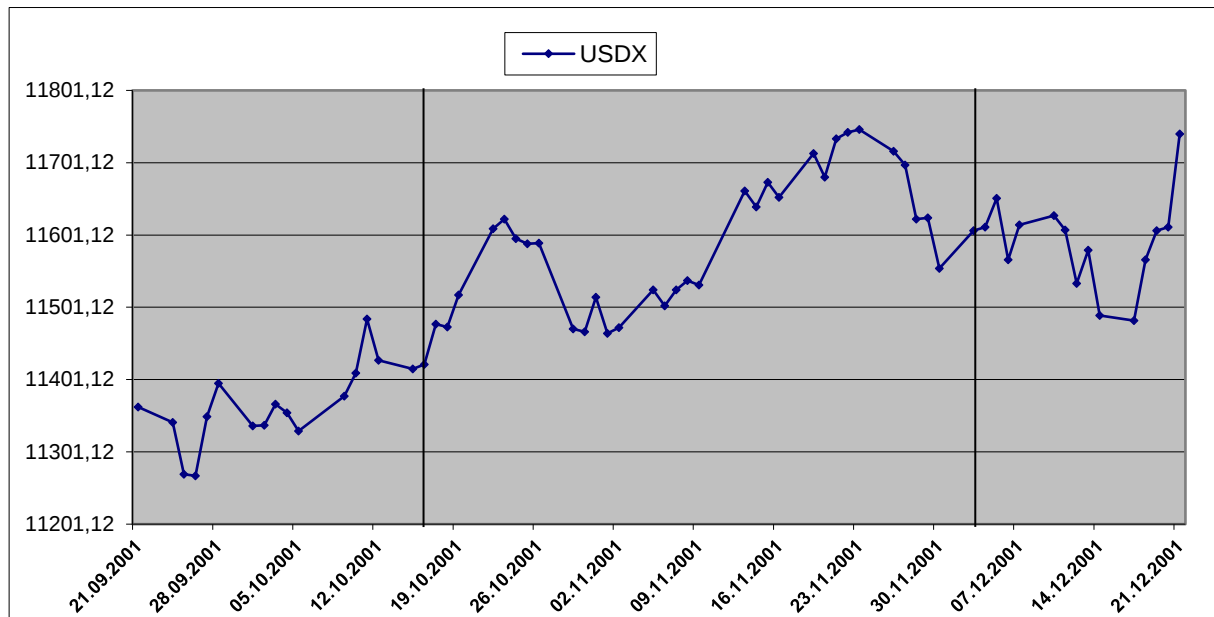


Source: Author's own using charts data from MacroTrends

The vertical line in the Figure indicates the date of the publication of the Enron quarter report. The chart shows that the index fell sharply (by 2.6%) after disclosure of information on the fraud on October 16, 2001, indicating in favor of our assumption of the negative impact of large financial fraud on the stock market. In addition, with the rapid change of the S&P500 as soon as the information is released, it can be concluded that the market reacts instantly to similar facts.

To examine the change in the dollar rate under the influence of disclosure of information we analyze the dynamics of the course during the two-week period before the publication of the quarter report and the three-week period after December 3, 2001 (the announcement of bankruptcy).

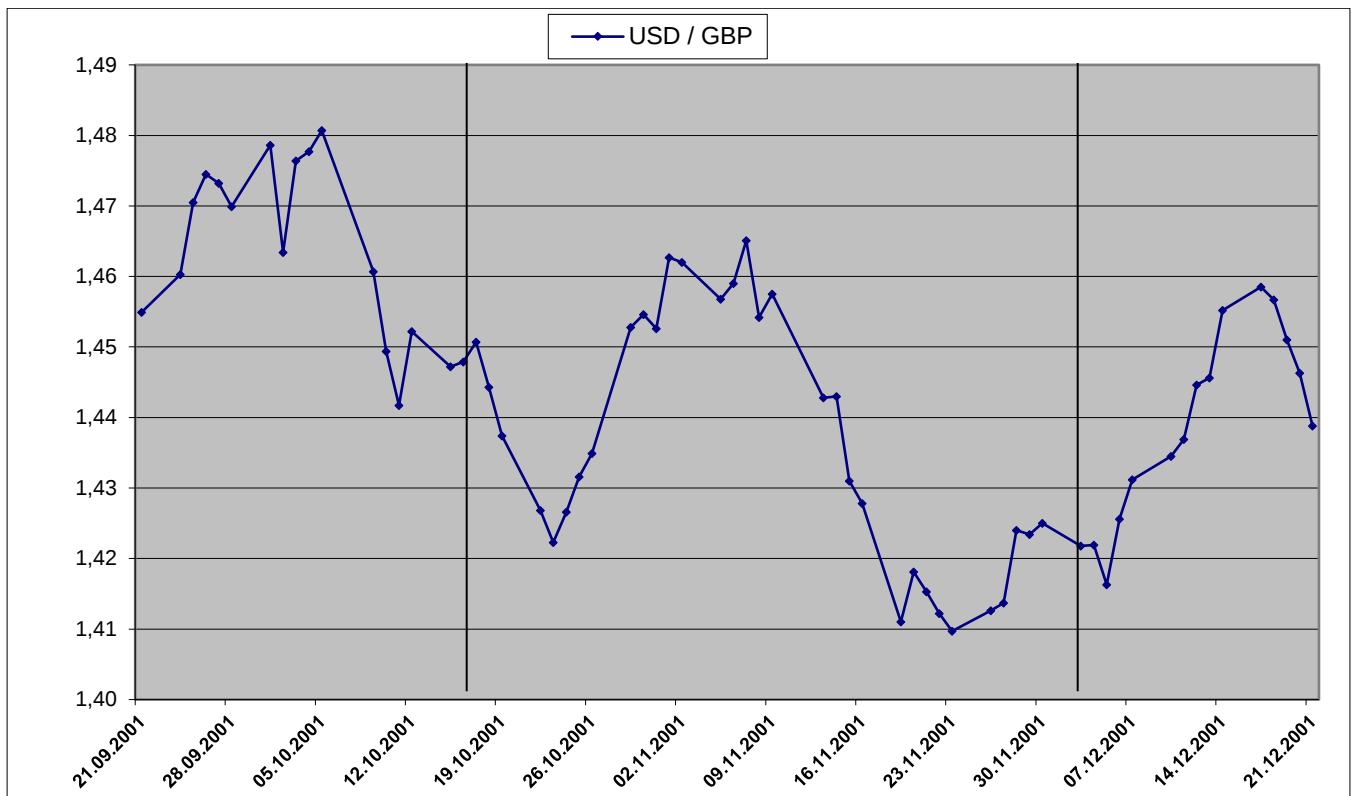
Figure 3.4. Dynamics of the dollar index under the influence of the disclosure of information about Enron fraud and bankruptcy



Source: Intercontinental Exchange, Inc., www.theice.com

Vertical lines on the graph are marking October 16 and December 3, 2001, the dates of disclosure of the crucial information, the impact of which we consider. The graph in Figure 3. 4. shows that the information on fraud did not have a negative effect on the dollar index, on the contrary, it grew. However, since October 23, we are seeing a drop in the index, from which it can be assumed that, since the dollar index involves a weighted dollar exchange rate relative to six currencies, then the information on Enron's scheme, apparently, could not immediately affect this indicator, but only a week later caused some shifts in the currency market. Although, as noted in Chapter 2, many factors influence the exchange rate, and in this thesis, we consider only a simplified hypothetical model with the assumption that the other conditions are unchanged, which is unlikely in the real world. Considering the impact of Enron's bankruptcy information, we can conclude that it had a more meaningful value for the index, because since December 3, to be accurate - December 5 to December 16, it fell by 1.45% (ICE Data for 2001). It can be assumed that the information on bankruptcy as a result of fraud had more influence on the trust in the US currency than information about the fraud itself. To test this assumption, let's consider separately the impact of fraudulent information and bankruptcy on the US dollar against the pound sterling, the euro and the Japanese yen, since the index reflects the weighted average dollar against the six major world currencies and does not show the dynamics of the rate relative to a specific monetary unit.

Figure 3.5. Dynamics of the dollar against the pound

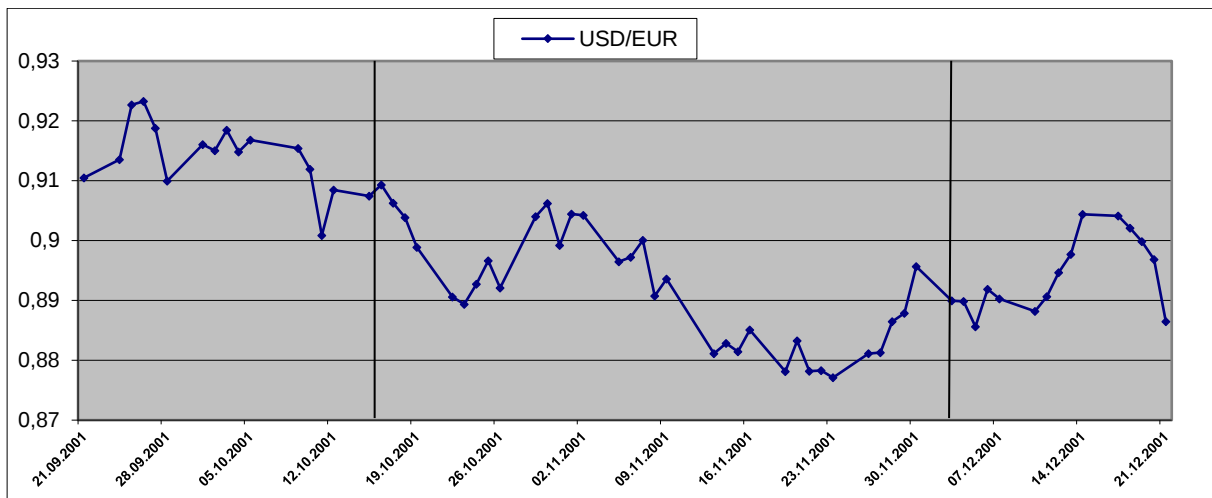


Source: Pacific Exchange Rate Service

Considering the graph in Figure 3.5. it should be noticed that, since I use the direct quotation, the upward movement of the curve corresponds to a decrease in the value of the dollar, and the downward movement - the increase of its rate. We observe the behavior of the exchange rate, similar to the behavior of the dollar index: the lack of an instant reaction of the market to information about the scam, but the fall of the rate in a week after October 23, and the decline of the rate after the disclosure of bankruptcy information (from December 5 to December 17, 2001, the rate dropped by 2.9%)⁶. On the other hand, considering this graph, it is difficult not to notice a certain cycle of fluctuations for it, which can lead to the conclusion of a simple coincidence in time of disclosure of information about the fraud with the appropriate phases of the course of the exchange rate.

⁶ Pacific Exchange Rate Service, <http://fx.sauder.ubc.ca>

Figure 3.6. The dynamics of the dollar currents relative to the euro.

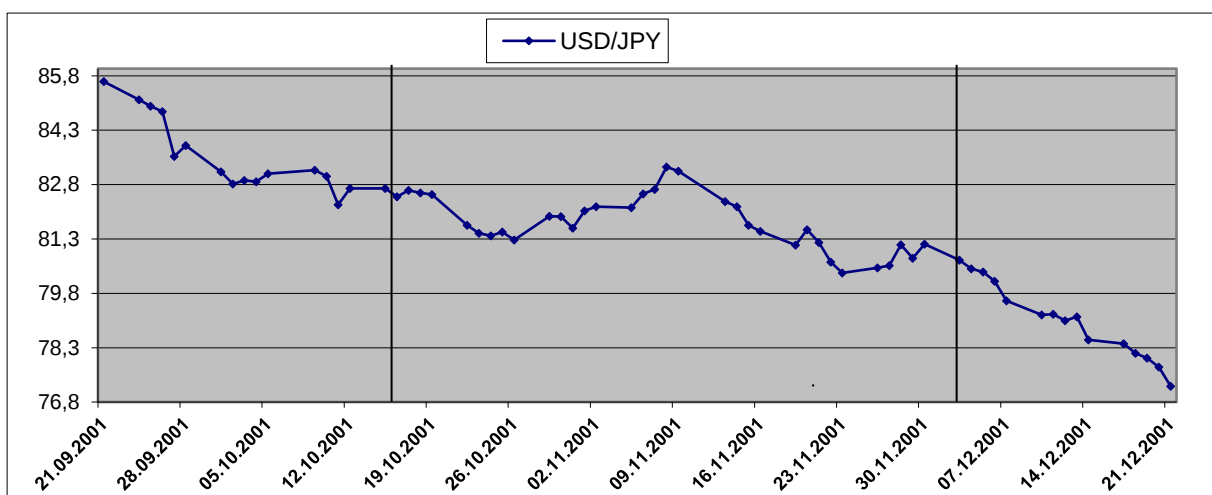


Source: Pacific Exchange Rate Service

Looking at the graph on Figure 3.6., we can conclude that the dollar to the euro rate behaved similarly to the dollar/pound rate and the dollar index.

After the declaration of information on the fraud the rate even increased, but since October 23, it declined. The announcement of the bankruptcy of Enron also probably led to a fall only in the week of December 10, 2001, which means that the dollar to the euro rate slowly reacted to the collapse of one of the largest American companies than the pound rate and the weighted average index.

Figure 3.7. The dynamics of the dollar against the Japanese yen



Source: Pacific Exchange Rate Service

By analyzing the graph on Figure 3.7., it can be assumed that the information on the Enron scams had a negative effect on the dollar against yen only after October 26, 2001, that is, 19 days

after the publication of the company's quarter report. The reaction of the yen occurred later than the reaction of the rates of other world currencies, and perhaps the reaction was not there at all and a slight decrease in the rate during October 26 - November 8, 2001 was caused by other factors. Because, unlike the other currency rates, after the announcement of the bankruptcy generally is seen a complete opposite reaction than expected - the rise of the dollar against the yen, which contradicts our hypothesis about the negative influence of frauds on the currency market.

Enron's bankruptcy significantly affected not only the US energy market, but also corporate governance in general: increased attention was paid to the activities of many corporations by the US Securities Commission, a devastating blow was struck on Arthur Andersen and confidence in audit firms altogether decreased. In terms of losses, Enron's bankruptcy was viewed as the loudest financial scandal in US history (Ruder, 2002). However, the Enron record was beaten already in 2002 by the second largest operator of long distance communication in the US - the company WorldCom. Released June 25, 2002 information about company reporting abuse (resulting in 3.8 billion dollars not reflected in balance sheet lines where they were supposed to be) caused a real shock in business circles, and the price per share fell from 74 dollars in 1999 to \$0.32 in the summer of 2002 (Tran/The Guardian, 2002).

During 2001 and the first quarter of 2002, the company recorded \$3.85 billion in "capital investments" that were actually used to pay current expenditures (Enofe, 2010). The difference lies in the fact that, in terms of accounting, contributions to capital assets are the funds spent on acquiring assets with a long term of use. The cost of acquiring such assets is spread over several years and is repaid by amortization. However, having spent the entire amount for other needs, WorldCom was forced to reflect all those expenses in the same period as they were spent.

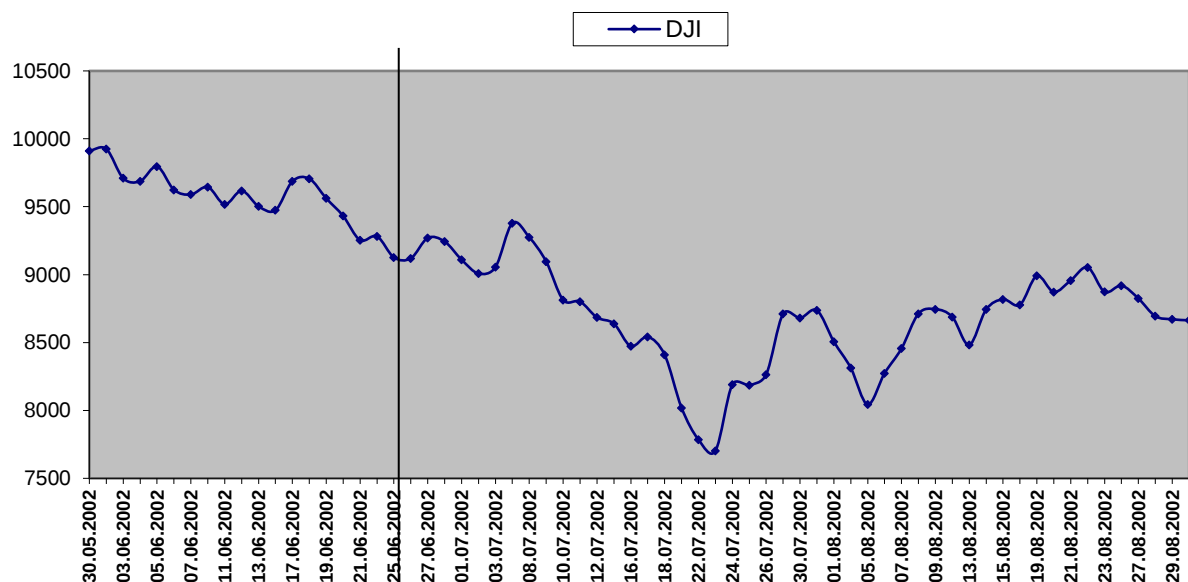
The current expenditure expense as a contribution to capital assets leads to an increase in net profit of the company, since the costs that should have been taken into account during one quarter of a year, were written off through several years. Thus, in 2000 the company suffered losses in the amount of several billion dollars, while in the reporting was shown a profit of 4.6 billion dollars (Tran, 2002). In 2001, the company falsified income data again - it was, according to the profit and loss account, 2.1 billion dollars instead of a real loss of \$15.6 billion, accounting mistakes at takeovers amounted to \$5.8 billion (Schilit, 2010). In order not to damage its financial indicators, WorldCom in 2000-2001 did not re-evaluate the previously acquired assets, although it was obvious that their value had fallen due to the collapse of the technology and telecommunications sector (Tran, 2002).

WorldCom's machinations affected the company's revenue, an indicator that was of tremendous importance in terms of the attractiveness of financial reporting. However, fraud had

no impact on the movement of payments as a whole: after the financial performance of the company was revised and its expenses increased during the reporting period, the same amount its expenditures on investment activities decreased, including the acquisition of long-term assets. However, the fraud impacted the dynamics of another indicator describing the cash flow of the company - EBITDA, which reflects the amount of income without taxes, debt repayments, amortization, and impairment of assets (Surowiecki, 2002). According to investors, this indicator better illustrates the financial position of the company than its revenue. It was EBITDA that was the most affected by the machinations: if in the beginning of 2001 this figure was estimated at 10.5 billion dollars, then in the summer of 2002 its value was only 6.3 billion dollars (Sturgeon, 2002).

It is worth noting that WorldCom's third-party auditor was notorious after Enron's bankruptcy Arthur Andersen, whose representatives claim that their work fully met all standards, while WorldCom hid important information from them (Schilit, 2010). But despite any assertions, the reputation of the auditor suffered a devastating blow, and investors began to increasingly lose confidence in corporate activity and its accountability. Let's observe the US stock market response to WorldCom's machinations using DJI (Dow-Jones Industrial) index to compare.

Figure 3.8. Dynamic of the Dow-Jones Industrial Index



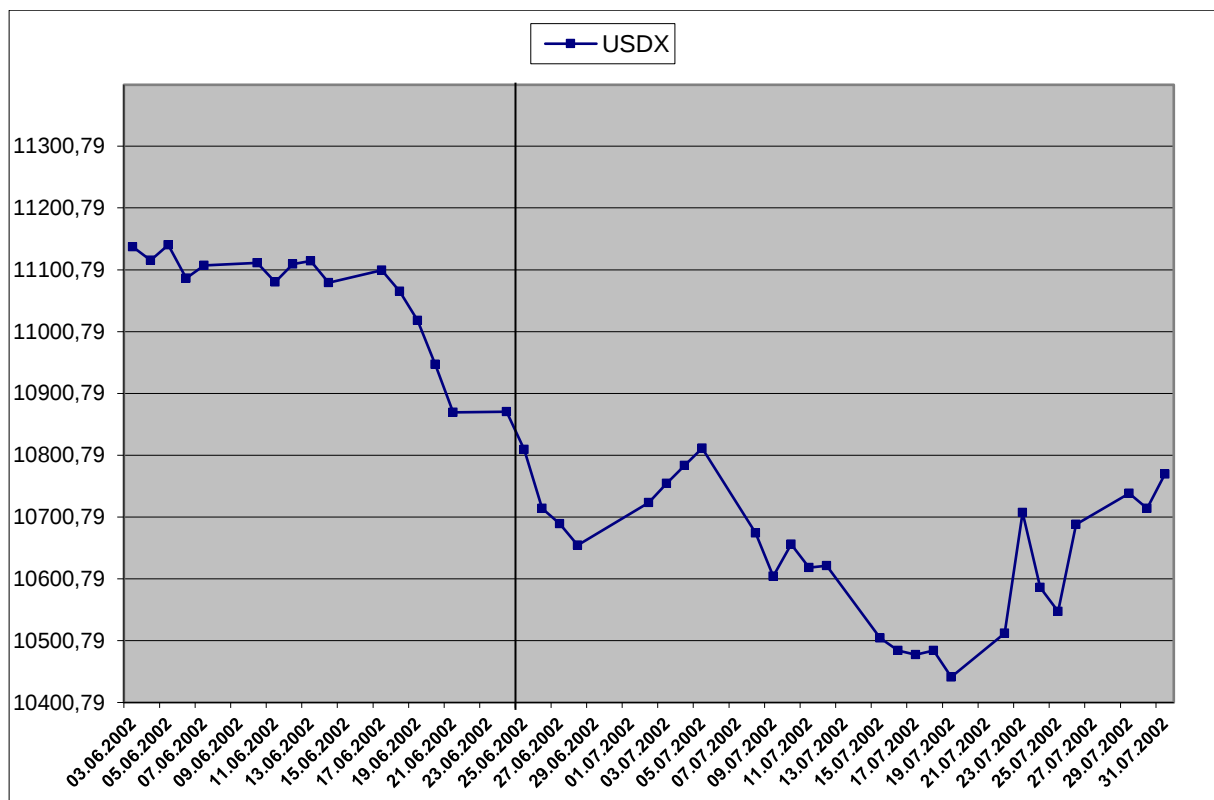
Source: Historic Data on DJI from finance.yahoo.com

The vertical line in Figure 3.8. indicates the date for the disclosure of fraudulent information - June 25, 2002. After this date, the index value declined during the month, which may show that, as in the example of Enron, the reaction of investors was not instantaneous, many needed time to believe and realize that the machinations of such a scale could really take place,

with the second time in less than two years. The trend towards lowering the index was observed even before the disclosure of fraudulent information, which may indicate that the WorldCom's alleged fiasco has spread to the market. The more rapid fall in July can be attributed to the fact that WorldCom on its own declared itself bankrupt in July (The Guardian, 2002).

To consider the dynamics of the index and the dollar rates, we will take two separate time intervals: two weeks before June 25 (the disclosure of information about the fraud) and period from 25 June to July 31, during which a bankruptcy announcement took place.

Figure 3. 9. Dynamic of the dollar index before the disclosure of information about WorldCom fraud and after the bankruptcy of the company.



Source: Intercontinental Exchange, www.theice.com

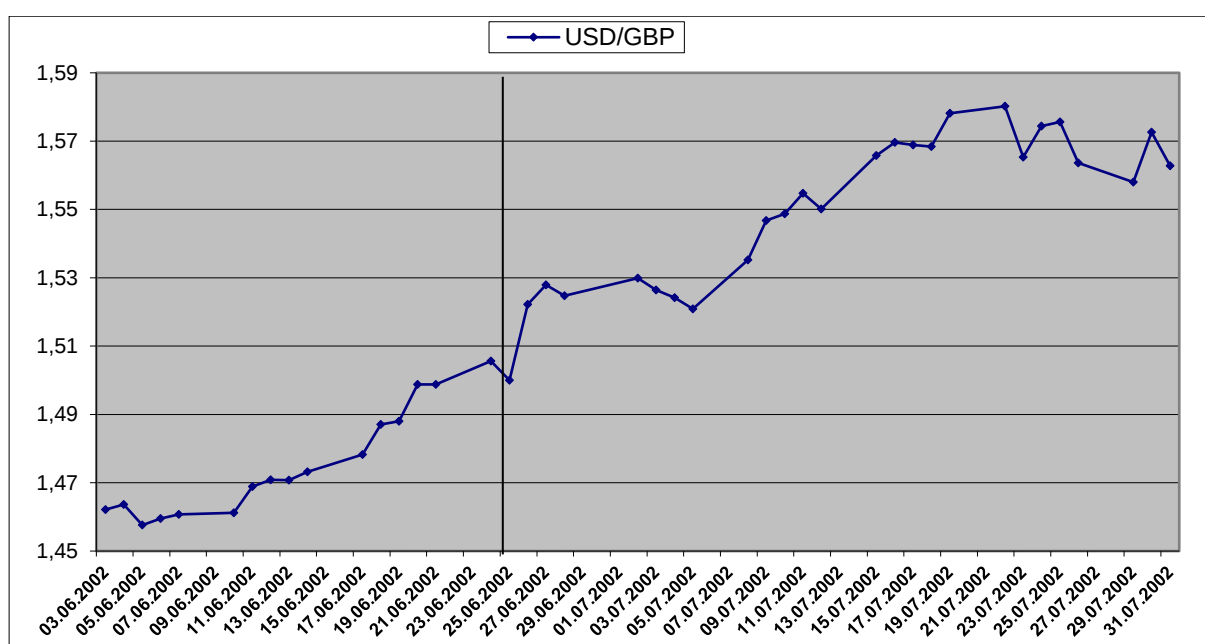
Vertical line on Figure 3.9. marks June 25, 2002, which is the date of disclosure of information about the company's fraud. Analyzing the chart, we can conclude that the USDX began to decline further on June 17, 2002, a week before information about WorldCom's fictitious reporting was released. There may be two logical explanations for this:

1. Information about fraud and alleged bankruptcy of the company has spread in the form of rumors and, because of the decline in confidence in American companies and currency after the Enron case, immediately reflected in a certain outflow of capital from the US stock market and a decline in the dollar against the major world currencies.

2. The market at that moment was influenced by other factors, which caused the index to fall. The influence of these factors could include the partial impact of the information on the fraud, but it was not decisive.

Therefore, we cannot categorically assert the negative impact of the fraud on the dollar index, however, given the decline of USDX, we do not reject the hypothesis that that WorldCom's scam still partially caused it to fall. In addition, if we look at the two-week period from July 5 to July 19, 2002 (during which bankruptcy information could be tentatively circulated), the value of the index fell by 3.4% (SEC, 2002).

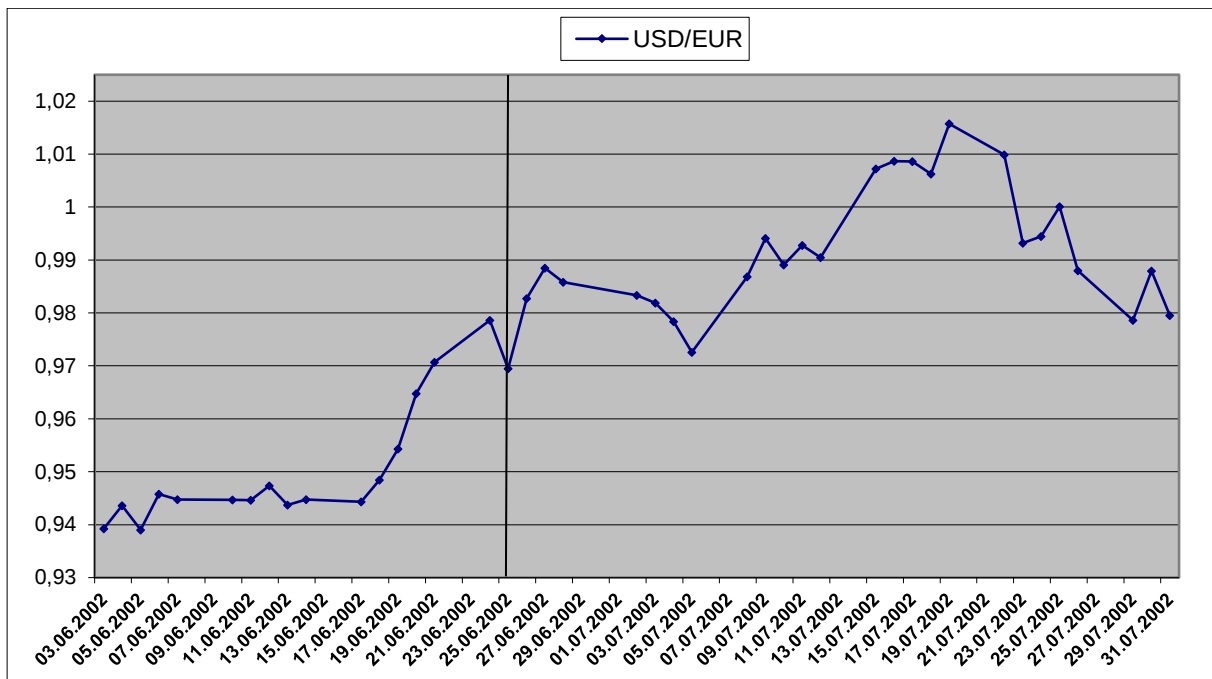
Figure 3. 10. US dollar exchange rate dynamic against the pound sterling.



Source: Pacific Exchange Rate Service

The dollar-to-pound sterling perception on Figure 3. 10. reminds the movement of the dollar index from Figure 3.9.: the decline in the rate began two weeks before the information came out. That is, if we consider that our hypothesis about the influence of rumors is correct, we can conclude that in the UK rumors spread more quickly than in foreign exchange markets of other countries. Beginning from June 25, the fall was somewhat faster: in just one day, from June 25 to June 26, the rate fell by 1.5%, and from July 5 to July 19, 2002, the rate fell by 3.8% (Pacific Exchange Rate Service, 2002). That is, if we consider that the bankruptcy announcement took place exactly at this time interval, then we can conclude that the information on bankruptcy as a result of manipulations really influenced the dollar to the pound sterling rate.

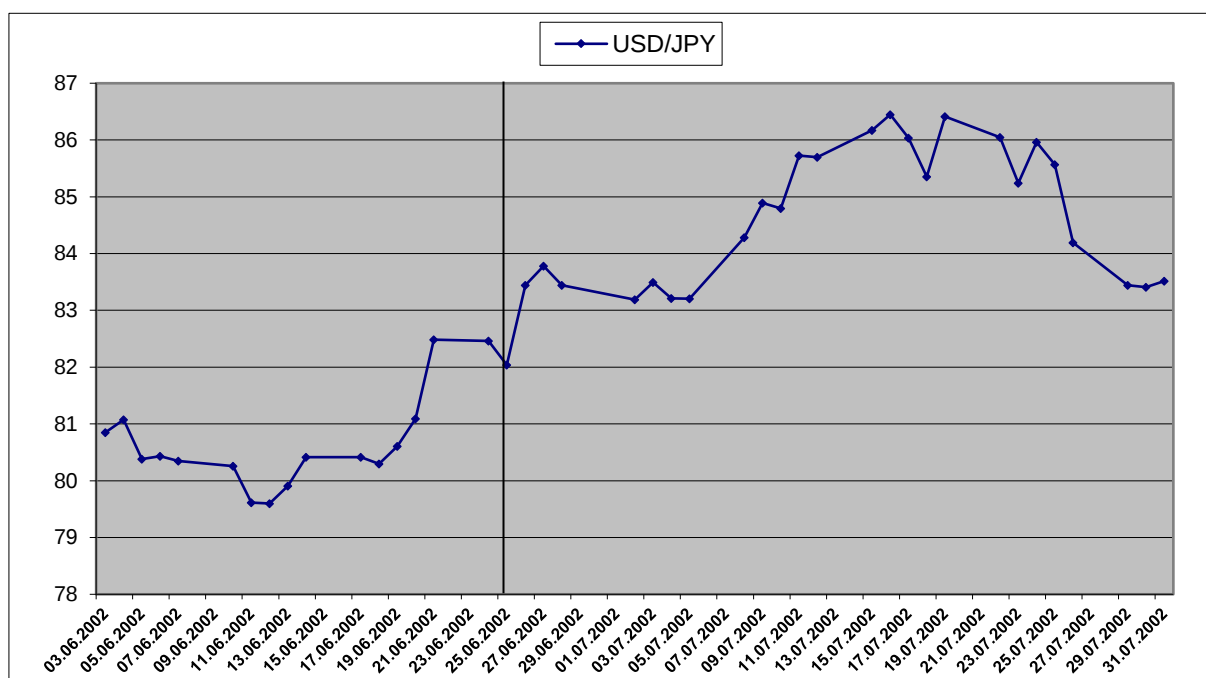
Figure 3. 11. Dynamic of the dollar against the euro.



Source: Pacific Exchange Rate Service

On the Figure 3. 11. one can see that the dollar to the euro kept the same trend as the pound and the dollar index. In this case, the decline begins on June 17, 2002, that is, a week before the disclosure of information about the fraud (as in the case of a change in the dollar index). We can assume that the disclosure of information about the fraud still had some influence, and the reaction was instantaneous: in one day (from 25 to 26 June) the rate fell by 1,36%. Again, there is a two-week period between July 5 and 19, 2002, during which the dollar to the euro fell by 4.4% (Pacific Exchange Rate Service, 2002). Observing a certain tendency in the behavior of the rates to the pound and euro, one can assume that either the fraud has indeed affected (indirectly, through information about bankruptcy as a result of fraud) on the exchange rate (and equally in both countries), or the synchronous exchange rate was triggered by other factors, which may have happened in the EU economy at that time.

Figure 3.12. The dynamics of the dollar against the Japanese yen.



Source: Pacific Exchange Rate Service

Fig. 2.11 It is clear that in the case of the dollar to the yen, the decline began before the information, namely June 18, 2002. However, disclosure of the facts of the scam on June 26 instantly affected the currency market with a sharp fall in the rate by 1.7%, and from 5 to July 16, 2002 (that is, during the period during which, as we forecast, the information about bankruptcy spread), the rate fell by 3.9% (Pacific Exchange Rate Service, 2002). From this, we can conclude that, as in the previously observed cases, the financial fraud had no direct impact on the foreign exchange market, but its consequences, namely bankruptcy, negatively affected the dollar rates relative to major world currencies.

From the consequences of the envelope of Enron and WorldCom we considered it can be concluded that the market reacted more acutely to the information on WorldCom, perhaps because investors had certain doubts after the bankruptcy of Enron, but at that time it could be perceived as a unique case, but after the WorldCom's false reports it seemed that the machinations among giant American companies are becoming a trend. The confidence of investors, which is, in fact, the basis of the American economic system, was undermined not only by these two scandals, but also by a sharp decline in accounting standards. According to many experts, the history of bankruptcy Enron and WorldCom once again confirmed the hypothesis that options as a form of material encouraging is "corrupting" managers (Chesney, 2004; Enofe, 2010). The options are considered one of the reasons for the permissiveness of corporate statistics and financial reporting

that prevailed in the US in the second half of the 1990's. The purpose and motivation of managers was one - at all costs, a steady increase in stock quotes (Fich and Shivdasani, 2005).

The options issued by the company represent its obligation to the owners of these securities to pay them the difference between the strike price and the price at the time of the option. However, the existing accounting rules do not “foresee” the inclusion of these liabilities in the company's balance sheet. By the end of 2000, Enron's management and employees had options for \$47 million companies shares. The average strike price was about \$30 for that period, and the stock price was \$83. Thus, the potential return of the option holders at that time was \$2.5 billion. If these commitments were included in the Enron balance sheet, they would completely dump all corporation profits (Healy and Palepu, 2003).

Further let's also take in consideration possible impact of financial frauds on the pound sterling, the euro and the Japanese yen. To do this, we will consider the machinations that took place at Barings Bank (UK), dairy company Parmalat (Italy), and Sumitomo Corporation (Japan).

3.2. Financial fraud at the UK's Baring Bank and its consequences

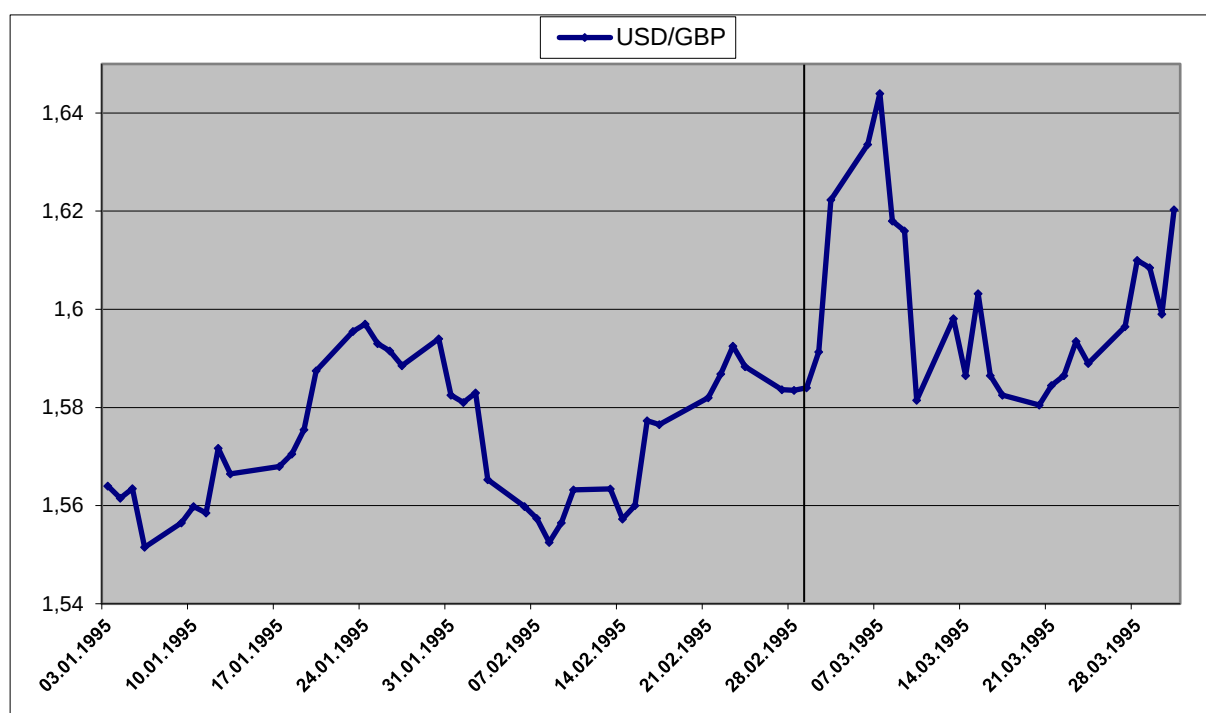
Bank Barings was one of Britain's oldest commercial banks, a bank with a 232-year history of success, respect and customer confidence. In 1995 the bank went bankrupt, having suffered losses in the amount of about 1.25 billion dollars due to the unauthorized trading of derivatives by a bank employee, Nick Leeson, during 1993-1995 (Titcomb/The Telegraph, 2015).

In 1993, Nick Leeson was appointed as general manager of a branch of a Singapore-based bank trading with futures. The first mistake made by the management of the bank was that Leeson was appointed at the same time as the head of the back office as well, meaning, while carrying out trading operations, he simultaneously kept accounts and made statements that in fact completely “freed” his hands for fraud. Leeson's immediate task was to arbitrage by buying and at the same time selling futures for the Japanese securities index Nikkei-225, which was quoted on the Singapore Monetary Exchange and on the Osaka Securities (Narayanan, 2004). The arbitration strategy does not generate high incomes, but it is neither characterized by a high degree of risk. Leeson, who sought more, decided to start a separate trading from his direct duties: in September 1994 he began selling call and put options on the Nikkei-225 index (The Economist, 1995). This strategy, known as “straddle”, is used when market is expected to be stable, because any sharp fluctuations will lead to significant losses. Nick Leeson, of course, concealed his risky activities from the bank's management, reporting that he was making calls on behalf of fake clients. Writing losses on non-existing customer accounts, he reported the bank on profits and in 1994 even

received a \$720,000 bonus (Titcomb, 2015). However, on January 23, 1995, the Nikkei-225 fell by 1000 points because of an earthquake that shook the industrial center of Japan (Narayanan, 2004), and in this case, of course, straddle was unprofitable. To correct the situation and to push the Nikkei-225 up, Leeson began to massively buy futures contracts on this index, which eventually led to even more losses and to the bankruptcy of Barings Bank. In March 1995, the Danish bank ING bought Barings Bank for 1 pound sterling (Titcomb, 2015).

To analyze the impact of Barings Bank bankruptcy on a pound sterling, let's consider the period from January 1 to March 31, 1995, since it was in January 1995 that it became known that Nick Leeson took unauthorized positions and suffered tremendous losses, and in March it became clear that Barings had gone bankrupt.

Figure 3.13. The dynamics of the pound sterling against the US dollar during January-March 1995.

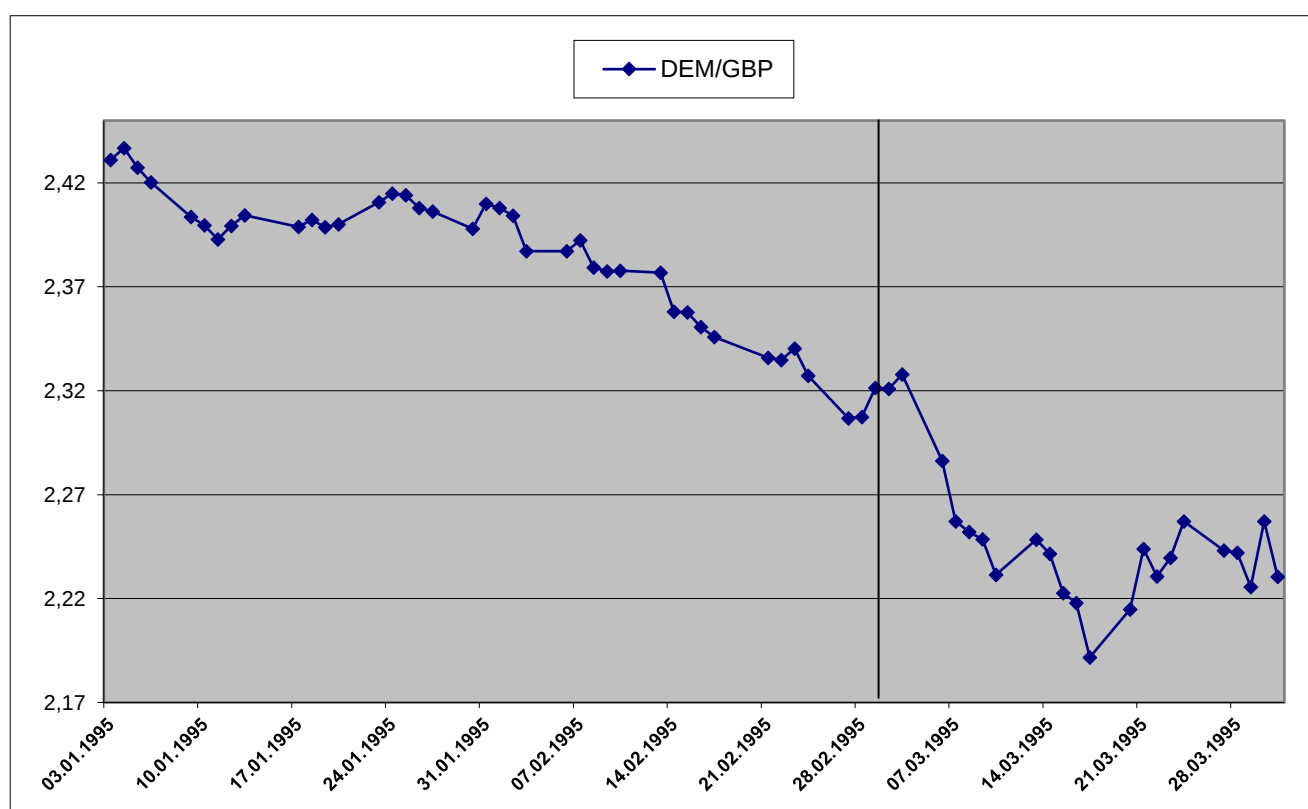


Source: Pacific Exchange Rate Service

As there is no clear date for disclosing the information about Nick Leeson's cheat, we will consider the period from January to February as a period during which rumors of fraud could spread as well as the information about financial instability but not anything truly tangible about bankruptcy or specific figures on the size of the losses. We consider March as the period during which information about buying a bank for 1 pound was made public, identifying the complete failure of the bank with the longest history in the UK. Therefore, as the date of the critical reference

I take March 1. This date is indicated by a vertical line in Figure 3.13. Analyzing the dynamics of the rate of pound sterling from the graph, we can conclude that the events of January-March 1995 did not have a negative impact on the rate of pound to the dollar, even the opposite: during February - early March 1995, the rate increased. However, on March 7, there was a sharp fall in the rate, when in three days, from 7 to 10 March 1995, the rate fell by 3.8% (Pacific Exchange Rate Service). One can assume that it was exactly at that time confirmed information about bank bankruptcy.

Figure 3.14. Dynamics of the pound sterling relative to the German mark.

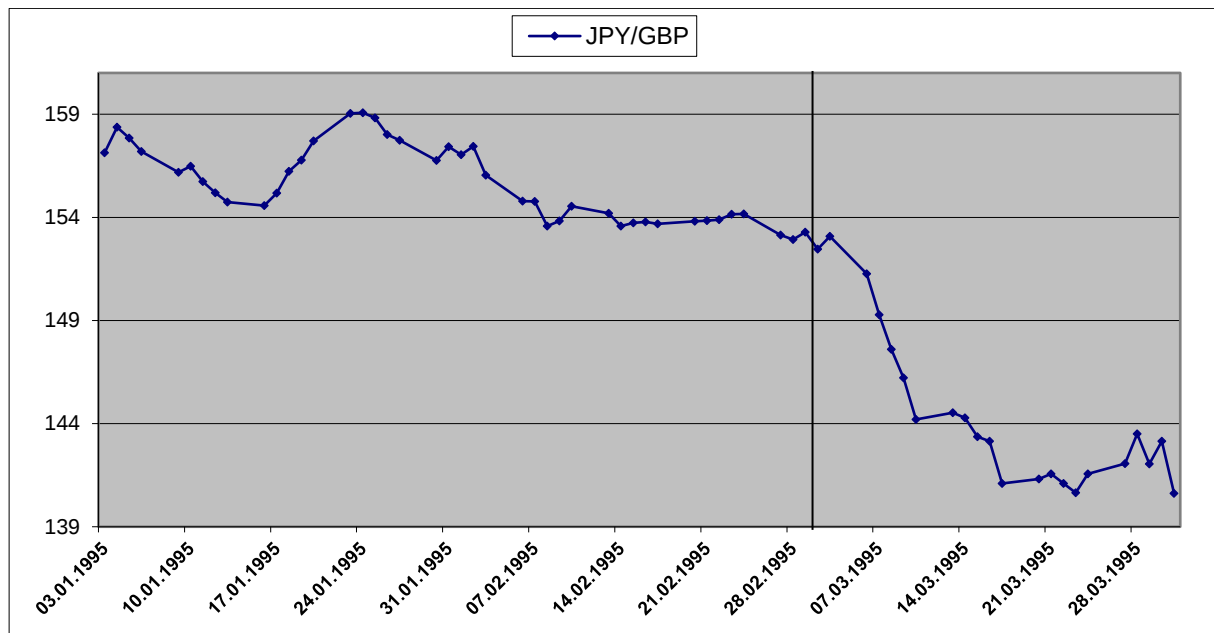


Source: Pacific Exchange Rate Service

Figure 3.14. reflects the reaction of the European currency market to information on the Barings fraud. Because 1995 the euro has not yet been introduced, to consider is the rate of the pound to the German mark. Analyzing this graph, can be assumed that the reaction of European countries (in this case, Germany) was different from the US reaction: the decline of the rate has been observed since the beginning of February, which could have been the result of spreading of information about Leeson or the influence of other factors, but in March there was a more rapid fall, and from March 3 to 10, 1995 the rate fell by 4.1% (Pacific Exchange Rate Service). The information about bankruptcy in this case caused a certain drop of the pound sterling to the German mark. Assuming that the decisive factor influencing the pound sterling rate to the dollar and the

German mark accordingly was information about the fraud and the bankruptcy, can be concluded that due to territorial and economic closeness, the German currency market reacted more quickly to this information, than the US currency market.

Figure 3.15. Pound sterling against Japanese yen through January-May 1995



Source: Pacific Exchange Rate Service

Looking at the graph on Figure 3.15., we can conclude that the rate of pound to yen best reflects the confirmation of our hypothesis: the rate decreases at the end of January - in early February (exactly when the information about the fraud was likely to spread). During February the course behavior was quite stable, and in early March the rate falls sharply. In just one week, from March 3 to 10, 1995, the rate fell by 5.3%. An explanation for such a sharp reaction from the Japanese currency market may be the fact that Nick Leeson was known just on the Japanese stock exchanges, so information about his fraudulent activities could quickly spread among Japanese investors who, in turn, could lose confidence in British banks and business in general.

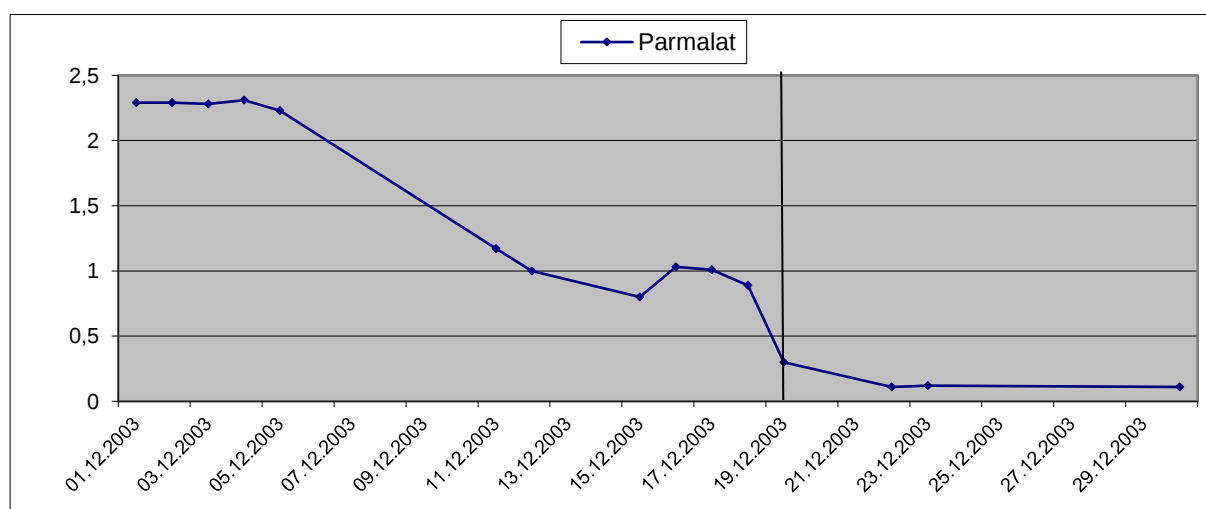
It should be noted that at that time, that is, 20-30 years ago, financial scandals were not so widespread and did not cause such a panic reaction as corporate scandals at the beginning of the XXI century. There is a sarcastic idea that if Nick Leeson committed his machinations now and at the same time would have been connected with any terrorist organizations, the consequences of such activity would be catastrophic to the world economy as a whole (UNCTAD, 2003).

3.3. The impact of Italian Parmalat on stock market and exchange rate

A scandal around the Italian milk giant Parmalat is often referred to as the European Enron. Between the collapse of the Enron corporation, one of the columns of American energy, and the bankruptcy of the largest Italian food company Parmalat, there is a lot in common, especially given the scale of losses and fraud patterns.

Parmalat was the eighth largest among the Italian industrial giants and the largest in the food industry. For many years it was considered one of the most successful Italian corporations: 36 thousand workers operated in 30 countries, mainly in Latin America and Eastern Europe, annual sales amounted to \$9.2 billion, the official income of the company in 2002 was 7.6 billion Euro (Bloomberg, 2004). In early December 2003, the cost of one share of the company was 2.5 Euros. After the bankruptcy announcement on December 24, 2003, the stock rate dropped to 11 cents, and trading with Parmalat was stopped. The movement dynamics of shares prices for Parmalat during December 2003 is shown in Figure 3.16.

Figure 3.16. Falling share price of Parmalat due to disclosure of information about fraud



Source: Historical Data from finance.yahoo.com

Vertical line on Figure 3.16. marks the date considered the start of the company's collapse on December 19, 2003. On that day, Bank of America announced not having any accounts on the Parmalat subsidiary Bonlat Financing offshore company, registered in the Cayman Islands. Bonlat should allegedly have had a deposit in the bank (in securities and cash) in the amount of 3,95 billion Euros (The Guardian, 2004). A sharp drop in stock prices is observed before the specified date, indicating the spread of rumors before Bank of America announced statement. A few weeks later, Deutsche Bank also refused to confirm the authenticity of the documents that came from the

bank to Parmalat. During the investigation turned out that many Parmalat financial documents were forged. In particular the accountant Gianfranco Bocchi acknowledged that he had falsified the Bank of America logo and a letter from them (Bloomberg, 2004). The talks about the crisis began in early December, when the company announced it could not withdraw EUR 496.5 million from the Epicurum fund in the Cayman Islands and, as a result, has no money to repay its bonds by EUR 150 million (The Guardian, 2004). From Figure 3.16 it is clear that the market reacted to this information, since stock prices began to fall already on December 5, 2003.

Parmalat President, Calisto Tanzi, founded the company in 1961 and has been its direct manager for more than 40 years. Tanzi family owns the major part of the concern shares. The main creditors of Parmalat were American banks: Citigroup, Bank of America, JP Morgan Chase, Merrill Lynch and Morgan. It was due to their involvement that fraudulent schemes, inherently similar to those used by Enron, could have been implemented (Bloomberg, 2004). Since 1997, Parmalat has taken several acquisitions with companies in North and South America. Purchase of these companies has created enormous debt obligations, in particular to Bank of America, Citigroup and JP Morgan Chase (The Wall Street Journal, 2004). At an early stage banks were hedging their positions through highly risky derivatives, which led to an even higher level of indebtedness due to risky speculation in interest rates and exchange rates. Then, banks created a certain derivative pyramid (based on Parmalat devalued bonds) that were sold to other banks and investors, such as US pension funds (The WSJ, 2004). In fact, they used fraud to compensate the damage from the Parmalat losses, which had huge debts to the banks. One of the elements of this fraud was that banks represented Parmalat bonds as "financially safe securities" (Bloomberg, 2004). Bank of America participated in most of the acquisitions carried out by Parmalat, while Citigroup, according to some experts, contributed to the creation of fictitious accounting reports through a system of target companies established in offshore areas (The Wall Street Journal, 2004).

One of these offshore companies was the Bonlat, reorganized at the Caymans Islands. Bonlat "invested" \$6.9 billion in highly risky interest-rate swaps that were based on Parmalat bonds with fake-overstated ratings by partner banks (The Guardian, 2004). Companies previously acquired by Parmalat were sold and then regained for money received from derivatives at offshore companies. The main purpose of offshore companies was to display liquid assets in Parmalat reports. Due to this fictitious liquidity, banks could continue to sell derivatives on Parmalat's worthless securities (The Wall Street Journal, 2004). The Parmalat crisis once again drew attention to the problem of offshore zones. In particular, on the eve of the President Calisto Tanzi arrest, millions of Euros were transferred from a bank account in the Cayman Islands to the Tanzi Account in Luxembourg (The Guardian, 2004).

The role of American banks in the collapse of the Italian company was of interest not only to the Italian prosecutors, but also to the American Securities Commission (SEC). The prime reason was because a lot of the share owners were American citizens and, as noted above, some pension funds. For example, the Southern Alaska Carpenter Pension Fund filed lawsuits against Parmalat executives, American banks and audit firms that could either directly or indirectly help the Italian giant mislead investors (The Guardian, 2004). Not only the US banks were involved in the scandal but also German, Spanish, from the United Kingdom, from the Netherlands, and, of course, Italians (Bloomberg, 2004).

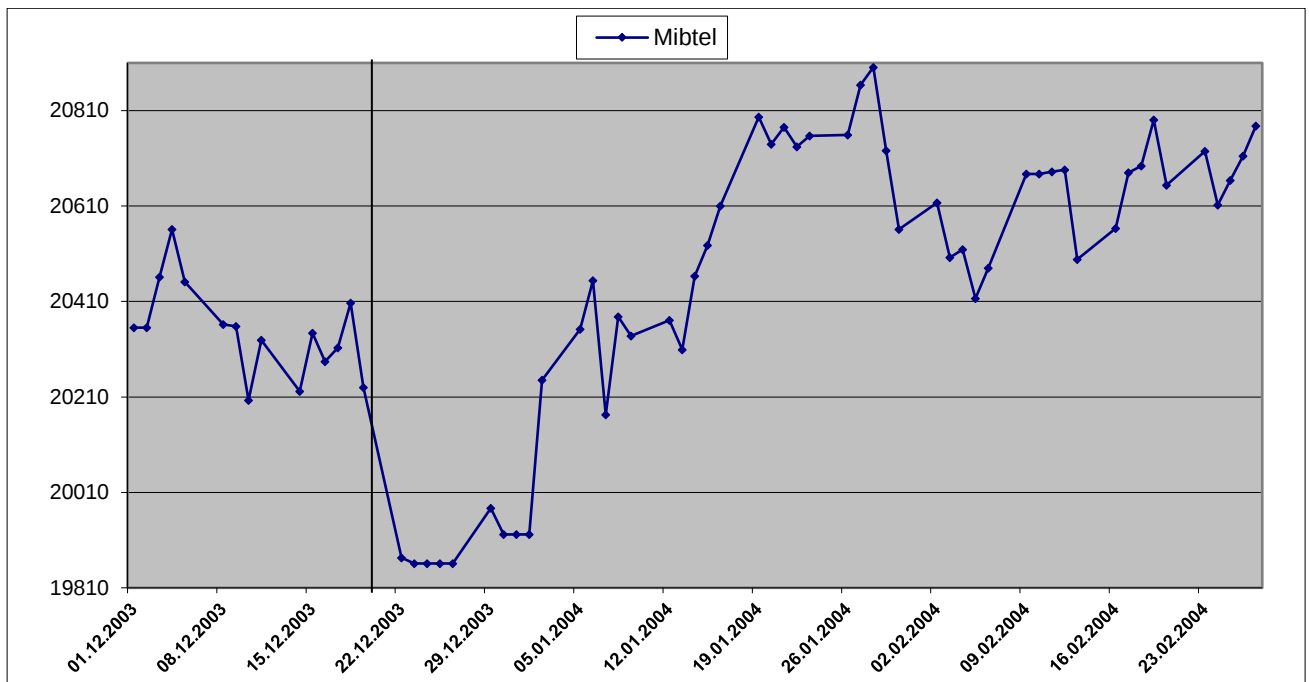
The main claims were against investors, creditors, rating agencies and, of course, the investigation into two companies that provided Parmalat with audit services – Deloitte & Touche and Grant Thornton (The Guardian, 2004). The employees of the latter are suspected of being part of the falsification of the accounting bills of the milk giant. For their part, auditors claim that they themselves have fallen victim to Parmalat's financial fraud.

Parmalat was the first to suffer from the disclosure of fraud and subsequent bankruptcy information, since Parmalat purchased more than 8% of all Italian dairy products. Farmers in Brazil were also affected, where Parmalat was the second largest milk purchaser from agricultural producers. According to experts, the collapse of the dairy empire by the scale of losses for the Italian treasury can be compared to the financial crisis in Argentina (The Guardian, 2004).

As a result of the scandal, the credit rating industry also suffered heavy losses, but it is basically a loss of confidence. Investors want to know whether they can now generally trust the ratings issued by their credit agencies to banks, companies, and countries (The Wall Street Journal, 2004). Let's now examine the impact of Parmalat's disclosure of fraud and insolvency on the Italian stock market, considering the change in the stock market index of the MIBEX Stock Exchange of Milan⁷. To do this, we will analyze the dynamics of the index movement from December 1, 2003 to February 28, 2004. We will assume the date of the information about the fraud as January 19, 2003, the date when Bank of America declined to acknowledge the letter, which guaranteed that Parmalat (Bonlat Financing registered in the Cayman Islands) had 3.9 billion euros in its bank. Another important date is the date of the announcement of bankruptcy of the company - December 24, 2003.

⁷ Mibtel Statistics, finance.yahoo.com

Figure 3.17. Dynamics of the Mibtel Index⁸

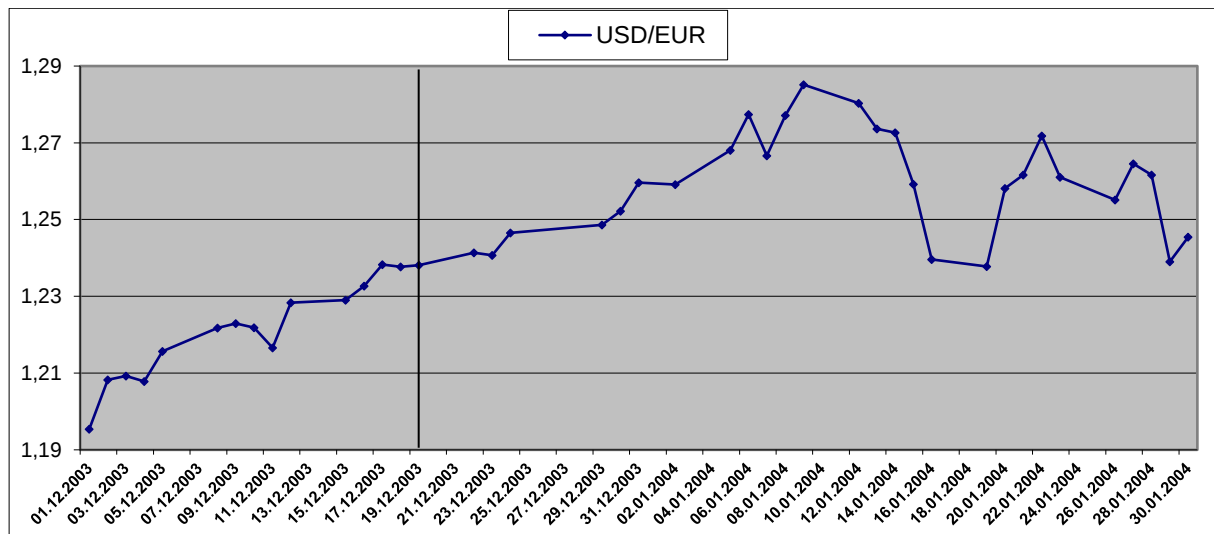


Source: Mibtel Statistics, finance.yahoo.com

Vertical line on Figure 3.17. marks the date that we consider the date of disclosure of information about the fraud - December 19, 2003. From the graph, it is clear that after this event, the course of the index significantly decreased, reflecting the market reaction to fraud information and confirms our hypothesis of the negative impact of financial fraud on the stock market. Moreover, as in the case with Enron, the stock index reaction was instantaneous: information about the scam immediately triggered a fall of 1.8% as may be seen on the graph. At the same time, the information about bankruptcy did not cause any changes in the index. It can be concluded that the stock market is very sensitive to information about fraud or any illegal activities. And perhaps, after Enron and WorldCom, a large-scale scam is identified by investors as immediate bankruptcy case. Maybe that's why information about bankruptcy does not cause any changes in the market and does not surprise anyone. In the previously considered cases, the currency market maybe reacted more slowly but the exchange rate was more actively changing precisely under the influence of information on bankruptcy.

⁸ MIBTel was a stock market index for the Borsa Italiana, Italy's only stock exchange based in Milan, owned by London Stock Exchange Group. This index has been replaced by the FTSE Italia All-Share in 2009.

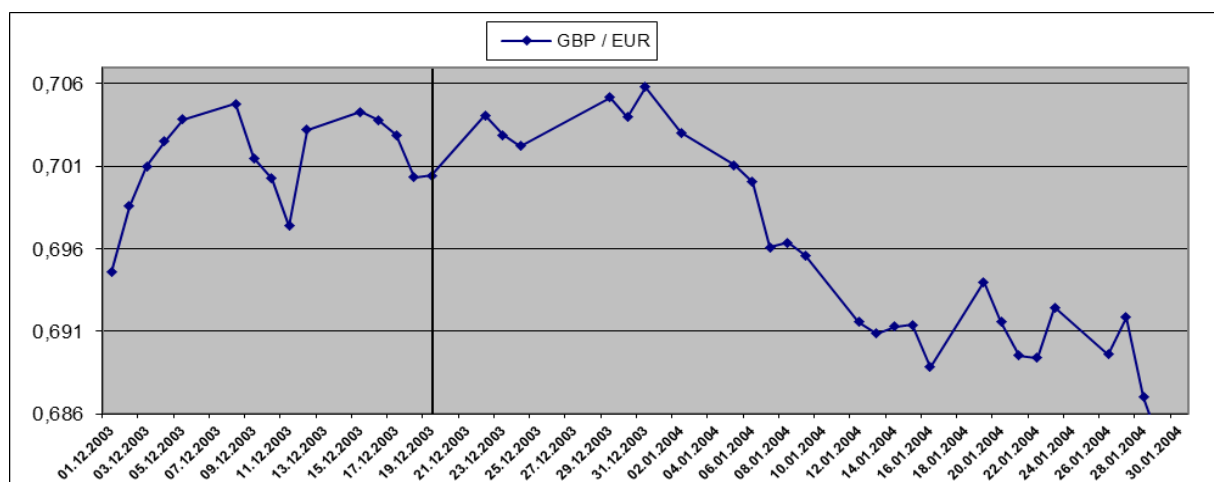
Figure 3.18. The dynamics of the Euro against the US dollar



Source: Pacific Exchange Rate Service

Analyzing the graph on Figure 3.18. it can be concluded that neither information about the fraud nor information about bankruptcy of Parmalat had a negative impact on the euro/dollar rate: throughout December and first half of January 2003, the rate grew. The possible explanation for this is the fact that the fraud of a company in one EU country could hardly affect the currency of the entire Union. However, since the fraud has affected the stock index, and there is a correlation between stock and foreign exchange markets, one can assume that the scam could have affected the course of the Italian lira, if it existed at that time.

Figure 3.19. The dynamics of the euro against the pound sterling.

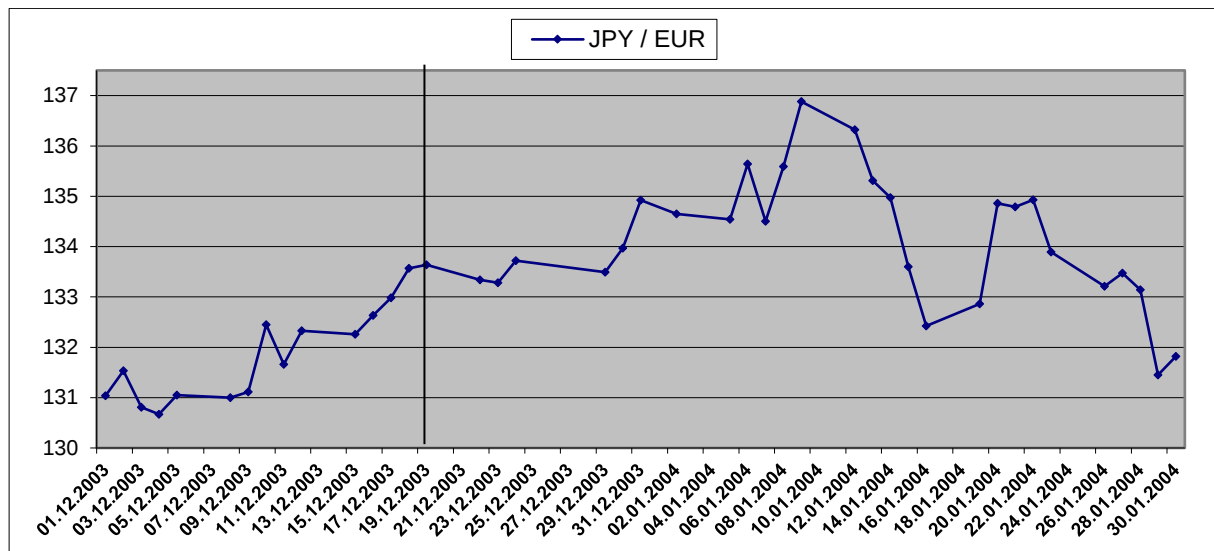


Source: Pacific Exchange Rate Service

As can be seen from the graph on Figure 3.19. GBP/EUR rate reacted to the information on fraud and bankruptcy caused by Parmalat, a week after the announcement of bankruptcy on

December 24, 2003 the course began to fall and from December 31, 2003 to January 7, 2004, decreased by 1,4%. As in the case of Barings Bank, fraud was more likely and more seriously reflected in the GBP/EUR than in the US dollar, which could be explained by the proximity of Italy and the UK within the framework of EU membership.

Figure 3.20. The dynamics of the euro against the Japanese yen



Source: Pacific Exchange Rate Service

It can be seen on the graph that neither the disclosure of information about the fraud, nor the announcement of Parmalat bankruptcy cause a decline in the euro against yen. On the contrary, during the December and the first week of January, there is an increase in the rate, and its fall after January 9, 2004 is difficult to associate with the Parmalat activities, since two weeks have passed since the release of bankruptcy information, and since the announcement of the fraud three weeks, that is more than enough time to reflect on the exchange rate. In addition, the date of the fall of the euro to yen coincides with the date of the fall of the euro to the dollar, despite the difference in the motion of graphs reflecting the indicated rates. This coincidence suggests that it was on January 9 that a certain event took place or that a decision had been made that affected the exchange rates, but their reduction was not due to the disclosure of information about fraud or bankruptcy. In this case, we again cannot categorically reject our hypothesis about the negative impact of financial frauds on the currency market, since this scam might have had an impact on the course of the Italian lira to the yen as a separate standing one. Still the fraud was not powerful enough to affect the unified currency of the whole EU.

3.4. Japanese Sumitomo's case and its influence on foreign currency market

For the last part of analysis in this thesis I considered the fraud that took place in the Japanese company Sumitomo Corp. To add to the whole set of diversity of previous seen impacts, this fraud and disclosure of information about it did not cause bankruptcy of the company, but still adversely affected its reputation and possibly the reputation of Japanese companies in general. IT will be interesting to observe if just a fraud without bankruptcy can move the market.

Sumitomo, currently one of the largest trading companies in Japan, was founded in 1600 in Kyoto by the seller of books and chemist Masatomo Sumitomo. The main activity of the company was copper production - a business started by relative Riemon Soga. In 1919 Sumitomo issued the legal status of a corporation (Krugman, 1996). On June 13, 1996, popped up information that the company had lost \$1.8 billion on the copper market through the unauthorized trade of its main trader Yasuo Hamanaka, and already in September 1996 it turned out that the real sum of losses amounted to 2.6 billion dollars. Yasuo Hamanaka was known for his rather aggressive style of trading, and received the title "Mr. Five Percent", because it was the share of world copper production that he controlled (Krugman, 1996). Hamanaka mainly focused on "cornering the market" - buying copper or futures contracts for the sale of copper in large quantities, which led to an artificial shortage in the market and an increase in prices, and then sold the purchased assets. This speculation is considered illegal, so we treat it as a fraud. For successful implementation it is necessary to meet two requirements: firstly, the company or trader must have a significant amount of funds to open positions, and secondly, it is necessary to adhere to the absolute confidentiality of information on the progress of this fraud, because if other investors learn about true intentions of trader, the action will lose the purpose and needed effect. While manipulating the prices of copper and conducting a strategy to "drive the market in the corner ", always arise certain additional expenses and losses, which also faced Yasuo Hamanaka. In an attempt to hide from the company's management information about his financial problems (that would rise if applied for a loan), Hamanaka settled swap agreements with two major US investment banks that provided him with millions of dollars of cash to cover current expenses (UNCTAD, 2003). In April 2002 bank JP Morgan Chase agreed to pay \$125 million compensation to Sumitomo. Japanese company accused bank, on the basis of the derivative contracts concluded with Hamanaka, of actually providing the trader with an off-balance sheet loan to cover losses from unauthorized trade (McMorris, 1999). It was just one of the ways in which Hamanaka concealed losses from the company's management: he also secretly sold options, avoided listing certain transactions in the

company's database, and opened unauthorized credit lines, sometimes even forging the signature of his bosses.

Figure 3.21. Dynamics of TOPIX Index



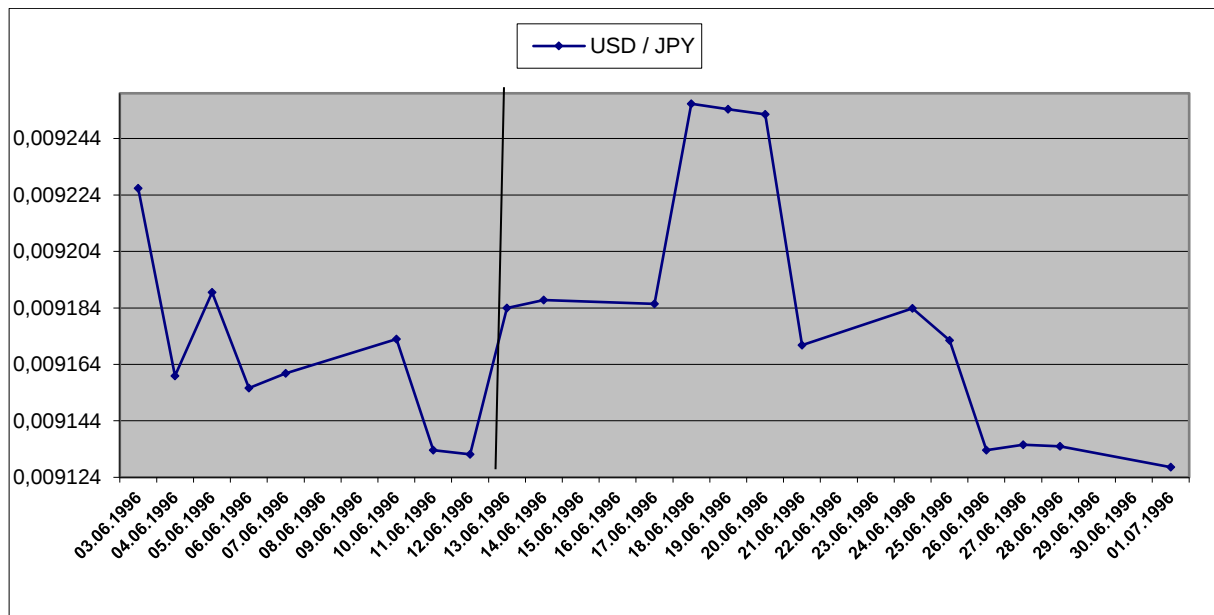
Source: Tokyo Stock Exchange⁹

Information on Sumitomo losses due to speculative stock purchase in the amount of 1.8 billion dollars appeared on June 13, 1996, and in September it became known that the losses amounted \$2.6 billion. To consider is the impact of this information on the Japanese stock market on the example of the TOPIX index, which includes stock prices of the 100 largest Japanese companies listed on the Tokyo Stock Exchange. As can be seen from the graph in Figure 3.21., the stock index did not react with the sudden drop after information on losses due to the scandals of one of Japan's largest companies, even on the contrary - it has risen. The fall of the index has been observed after June 26, 1996, almost 2 weeks after disclosure of information about fraud. Hence, can be assumed that, either this scam was not shocking to investors and was predictable and anticipated, or its scale was not so significant as to affect the stock market in Japan. One can also see the fall since June 26 as a somewhat late response to the information about the fraud, however, comparing the behavior of TOPIX with the behavior of S&P500, DJI and Mibtel, it can be concluded that stock indices are still called to reflect events of this nature faster if these events can really affect the market. In this case, most likely, the scam did not have a significant impact

⁹ Information data on Tokyo Stock Exchange website, such as stock prices, price charts, stock price indices, futures prices and options prices, are provided by QUICK Corporation (QUICK) or its data providers.

on the index, and, therefore, could hardly have a significant effect on the yen rate. Consideration of this case is also important because Sumitomo's fraud, albeit unprofitable, did not lead to bankruptcy of the company, and from previously discarded cases it can be concluded that it was information about bankruptcy that negatively affected the currency market.

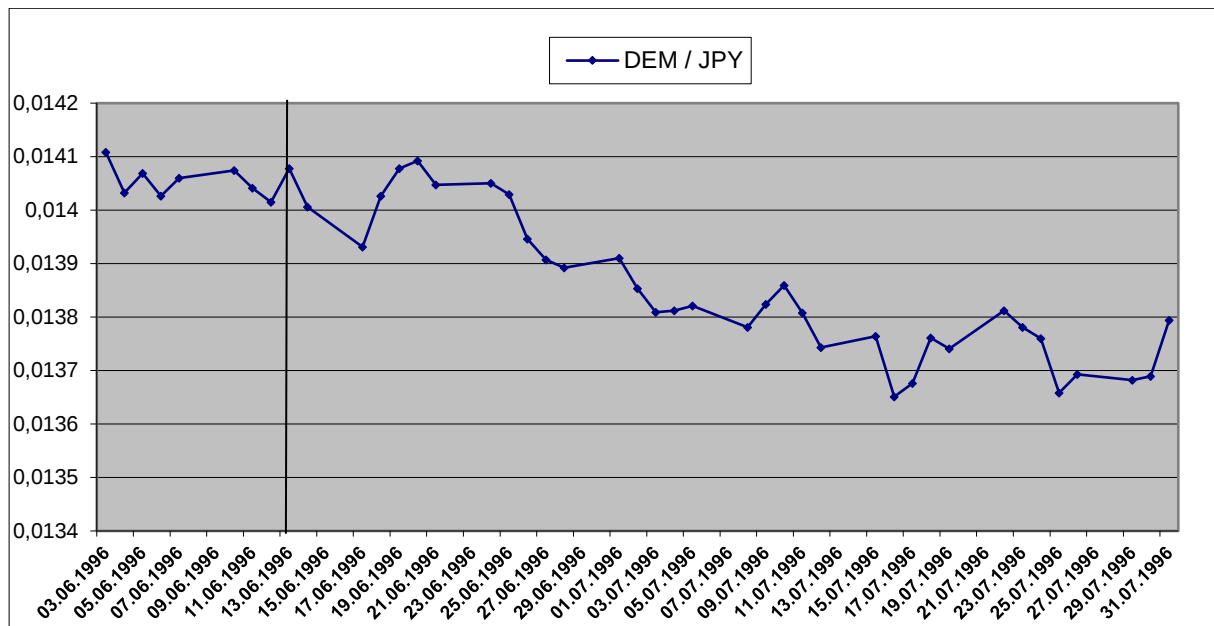
Figure 3. 22. Dynamics of the Japanese yen versus the US dollar.



Source: Pacific Exchange Rate Service

The subject of observation is the dynamics of the yen exchange rate relative to the dollar before and after the disclosure of the fraud information through Fig. 3.22. The vertical line on the graph indicates June 13, 1996. The graph shows that the day before the announcement of the information exchange rate has sharply increased, after the information he remained for 4 days virtually unchanged, from 17 to 18 June has again sharply increased, which totally does not correspond to our hypothesis on the adverse influence of frauds. However, the course fell sharply on June 20, a week after the disclosure of information about Sumitomo, which can be attributed to the rather slow reaction of currency markets to fraud, which was observed in the previous examples. Though, considering this graph, the behavior of the exchange rate can be called faster cyclical, and it is difficult to find an obvious connection between the fall of the rate on June 20, 1996 and the disclosure of information about the illegal trading. It is also possible to assume that if the information about the fraud were not to consider, the course would continue to grow, because it "stopped" on June 14 and stayed 3 days almost at the same level.

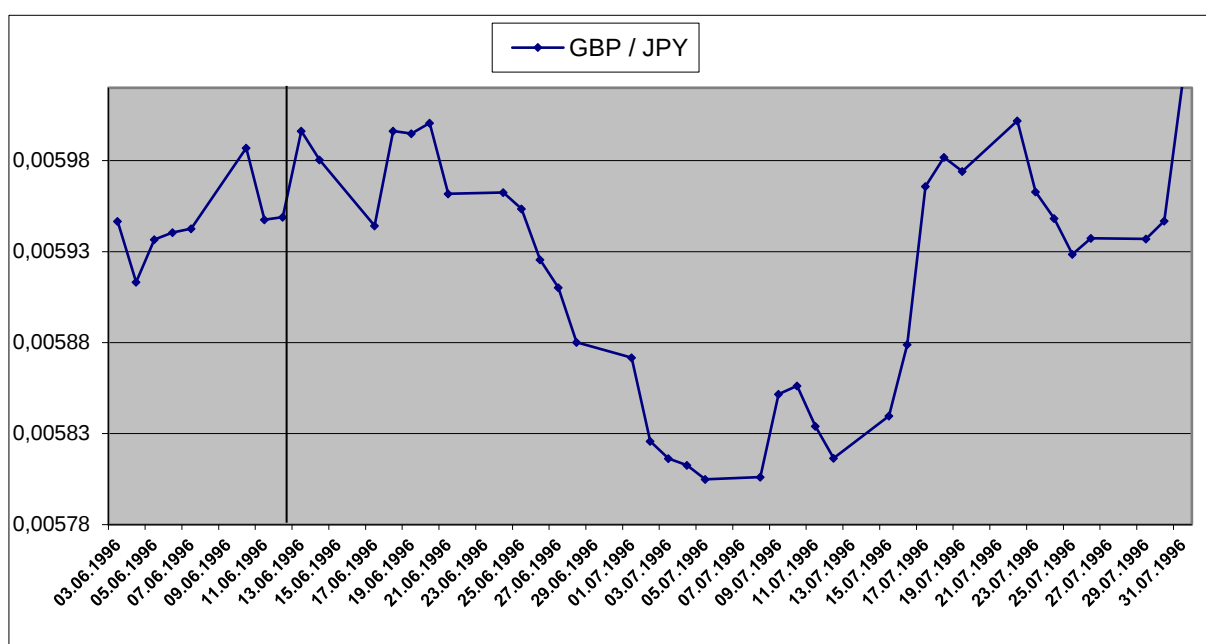
Figure 3. 23. Dynamics of the Japanese yen rate relative to the German mark



Source: Pacific Exchange Rate Service

Because Euro was introduced 4 years after the execution of Sumitomo's machinations, here will be considered the effect of the fraud/yen on the German mark as a representative of the European economy using the chart in Figure 3.23. According to the graph, the Yen to the mark exchange rate began to decrease after June 13, 1996, though it still held quite stable until that date. It would have been possible to assume that the movement of the curve on the graph confirms our hypothesis that the scam causes a fall in the rate of the national currency of the country in which these frauds occurred. However, one cannot forget about other factors that could have influenced the course and which were discussed in previous chapter. It should be noted that, as in the case of the yen to the dollar, a significant fall in the exchange rate began on June 20, 1996, a week after the appearance of scam information that may reflect a natural, somewhat later, reaction of the currency market to information about fraud, or suggests the existence of other factors that led to the yen's depreciation relative to other currencies.

Figure 3.24. Dynamics of the Japanese yen rate against the pound sterling



Source: Pacific Exchange Rate Service

As seen from the chart in Fig. 3.24, the behavior of the yen to the pound sterling is similar enough to the behavior of the mark rate above. A certain decrease in this case also took place on June 13, 1996, though it could rather be called a coincidence than the immediate reaction of the foreign exchange market, since even the stock market did not react instantly to the appearance of Sumitomo's manipulation. It should be noted that Hamanaka traded on the London Metal Exchange (Krugman, 1996), so his illicit speculations could be reflected on the financial attitude of British investors toward Japanese business. So, it can be assumed that the disclosure of information about the Sumitomo fraud caused a certain impact on the yen to the pound sterling rate. In addition, the fall of the rate of June 20, 1996 may also reflect the later reaction of the currency market to information about the fraud. It should be noted that if it is assumed that the fall of June 20, 1996 was caused by the very earlier disclosure of information about Sumitomo's manipulation, then it can be concluded that even a fraud itself can negatively affect the foreign exchange markets and its impact may be more direct, and not so secondhanded, as in previously considered cases, where the fall of rates was triggered by the appearance of bankruptcy information as a consequence of fraud.

4. Implications

The purpose of this thesis was to examine the significance and impact of corporate frauds among different industries and countries, observe their consequences in the business, economic systems and international markets. An investigative research was conducted through a combined mode of paper and articles reviews; some case studies; reports of various international organizations and data from stock exchanges and open services with access to exchange rates of main world currencies. It was found that in some cases impact of financial fraud was greater and went farther as expected. Effects of Enron bankruptcy went beyond expected – they decreased not only stock index but also made a negative influence on exchange rate of dollar against other currencies. But what is actually more important – how it affected the behavior of investors in the future. The fear to experience it again forced some of them to act on rumors before they could be confirmed. The experience of Enron learned investors react faster, as can be seen when 2 years later occurred the fraud in WorldCom. And again the negative influence can be observed stronger on the stock exchange market than on currency rates. Beside, the information about bankruptcy has more impact than just information about a fraud.

Considered cases in this thesis were from different time frames – even so we can observe that market do or doesn't show reactions irrelevant if the case was 25 or 10 years ago. Some market reactions were contra intuitive which show that it sometimes impossible to filter out which factors are important to it.

Comparing all indices behaviors, one can conclude that even if with delay markets always reacts on major events. And if the event can influence the market, stock exchange indices are more exposed to fluctuations rather than currency rates. If the effect on other exchange rates had those events where the strongest were influence US Dollar. Because of its position as reserve currency in most of economies, it is easy to shift its rate especially if financial fraud causes losses in it. In comparison, a huge fraud in Italy did not manage to decrease Euro, probably not only because it was not a national currency but a common one but also because in the fraud were involved American counterparties and where US Dollar took some of the impact. In UK and Japan cases it was seen that information about consequences due to the fraud had sometimes minor but impact on the exchange rate as far as US dollar connection was concerned. More closer the case to the economy or exchange market where it takes place – more possible is the influence.

In conclusion it should be noticed that the expected market reactions not always were observed. It is in some way a good sign of market stability and ability to overcome losses and big impacts in short period of time.

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Appendix

Abstract (English)

This thesis investigates different forms of financial frauds and which factors are needed to make it possible to influence the stock exchange and currency exchange markets of several countries. For the analysis were selected wide range of companies in different time lines that could have influence on US dollar rate: 2 American companies, 2 European companies and 1 Japanese company. The aim of the analysis was to confirm if there is an impact on exchange markets (1) of the information about the fraud and (2) if can bankruptcies influence the economy.

In addition, this work investigates the difference between reactions of stock exchange and currency exchange markets with regard on US dollar. Some of the cases confirm the possibility of big fraud events to influence the market, but there are different consequences depending on (1) type of information – fraud occurrence or bankruptcy, (2) size of the company and how much influence it has on domestic and international market, (3) location of the company and how open is the domestic exchange market to foreign influences. Therefore, the thesis' assumptions partially can be confirmed by the analysis, with regard on the volatility and unpredictability of international currency markets. Conclusions can be drawn only with the factors we discuss and can relate in the analysis hence other possible outcomes and interpretations are not to be excluded.

Abstract (Deutsch)

Diese Arbeit untersucht verschiedene Formen von Finanzbetrug und welche Faktoren in Betracht bezogen sein sollen, um die Börsen- und Devisenmärkte verschiedener Länder beeinflussen zu können. Für die Analyse wurde eine große Auswahl von Unternehmen in verschiedenen Zeiträumen und aus verschiedenen Ländern ausgewählt, die Einfluss auf den US-Dollar-Kurs haben könnten: 2 amerikanische Unternehmen, 2 europäische Unternehmen und 1 japanisches Unternehmen. Das Ziel der Analyse war es, zu bestätigen, ob sich (1) die Informationen über den Betrug auf den Devisenmärkten auswirken, und (2) ob Insolvenzen die Wirtschaft beeinflussen können.

Darüber hinaus untersucht diese Arbeit den Unterschied zwischen den Reaktionen der Börsenmärkte und Devisenmärkte auf US-Dollar. Einige der Fälle bestätigen die Möglichkeit, dass große Betrugsereignisse den Markt beeinflussen, aber es gibt unterschiedliche Konsequenzen, je nachdem, (1) welche Art von Informationen rauskommt - Betrugsvorfälle oder Insolvenzen, (2) die Größe des Unternehmens und wie viel Einfluss es auf das Inland und den internationalen Markt hat, (3) das Standort des Unternehmens und wie offen der Inlandsmarkt für ausländische Einflüsse ist. Daher können die Annahmen der Arbeit teilweise bestätigt werden, und zwar im Hinblick auf die Volatilität und Unvorhersehbarkeit der internationalen Devisenmärkte. Schlussfolgerungen können nur mit den Faktoren gezogen werden, die diskutiert wurden und die sich auf die Analyse beziehen können. Daher sind andere mögliche Ergebnisse und Interpretationen nicht auszuschließen.