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Can Investor Sentiment Help Explain Stock Market Crises?

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ABSTRACT

Traditional financial theory, assuming rationality and stock market prices justified by fundamentals, has failed to explain the occurrence of several large stock market crises. Theories in behavioral finance suggest stock market overvaluation, eventually leading to stock market crises, partly occur due to noise trading. In this thesis, noise is captured through investor sentiment with the purpose of investigating the relationship between stock market crises and investor sentiment. Individual investor sentiment is the general optimism or pessimism towards the present and future economy among individual investors. To proxy the individual investor sentiment Consumer Confidence Indices have been used. Results, from logit and OLS models, show that an increase in investor sentiment optimism seems to increase the probability of stock market crises occurring on four major stock markets. Further, the effect of investor sentiment explaining stock market returns seems to have been larger during the subprime mortgage crisis than during the dot-com bubble.

Keywords: investor sentiment, stock market crises, behavioral finance, Consumer Confidence Index, CMAX measure

TABLE OF CONTENTS

1 INTRODUCTORY BACKGROUND

According to the efficient market hypothesis all market information as well as all stock specific information is reflected in the price of a stock (Fama, 1970). Theories in traditional financial economics, such as the Capital Asset Pricing Model (CAPM), assume the market participants to be rational. Further, the financial markets are considered to be efficient since arbitrageurs will offset any eventual mispricing in the market (Shleifer, 2000). Contrary, according to behavioral finance, the traditional financial theories assuming efficient markets have several limitations. Behavioral finance theory incorporates psychological aspects and the behavior of market participants in order to fully explain how financial markets behave. It considers that the individual market participants do not necessarily act in rational ways at all time and that there is something such as a market psychology. Thaler (2000) argues that market participants, whom in traditional finance are assumed rational in fact often behave irrational. Further, market participants are subject to irrational overreaction to unexpected and dramatic news (De Bondt & Thaler, 1985) and Shiller (1995) argues that investors are also subject to herd-like behavior. Thaler, Tversky, Kahneman and Schwartz (1997) introduce the theory of myopic loss aversion, claiming that investors are more sensitive to losses than to gains and that they frequently evaluate their outcomes. All these, and many others, individual psychological aspects need according to behavioral finance to be taken into consideration when studying the financial markets. Many anomalies in traditional theory can partly be explained by the inclusion of various behavioral finance aspects. Further, Kahneman and Tversky (1979) argue that the psychology of the investor has a role in explaining stock market returns.

Such traders trading on psychological aspects rather than on fundamentals only can be defined as noise traders (Black, 1986). Traders trade on the lack of new information rather than on real information and Black (1986) claims that one reason for noise traders to trade on noise can be that they do not realize that they are trading on noise but rather believe that the noise in fact is information. Trading provides the market with liquidity as well as makes the market irrational. De Long, Shleifer, Summers and Waldmann (1990) present a model in which these noise traders are welcome. They provide evidence that security prices at times can be overvalued as compared to fundamentals due to noise trading. Moreover, it can be difficult for arbitrageurs to act against noise traders due to, for example, limited liquidity in certain stocks. Noise trading can thus lead to a large difference between market price and what the price should be according to the fundamentals and thus traditional financial theory.

Several financial anomalies occur due to noise trading. (De Long, Shleifer, Summers and Waldmann, 1990)

This noise trading can be quantified as the investor sentiment. Investor sentiments are the beliefs about future asset values that not are justified by fundamentals (Baker & Wurgler, 2006). When investors are irrational and make investments on noise instead of on fundamentals and this becomes systematic, then it becomes an extra source of risk which should be priced at the market (Brown, 1999). Baker and Wurgler (2006) and Brown and Cliff (2005) claim that the limited arbitrage possibilities can explain the existence of over- and underpricing due to noise trading. Shleifer and Summers (1990) argue that, when arbitrage possibilities are limited then movements of investor sentiment are an important determinant of security prices. Shleifer and Vishny (1997) show that trading against noise traders can be both risky and costly and that arbitrageurs therefore do not force the price to the level that would have been in an efficient market.

Irrational noise trading can also have impact on financial crises. Shiller (1987) finds that the main reason for the American stock market crash in 1987 was overpricing, and De Long and Shleifer (1991) argue that stock market prices prior to the 1929 stock market crisis were overvalued as compared to fundamentals due to highly optimistic investor sentiment. Despite this, few attempts have been made to focus specifically on the link between investor sentiment and financial crises.

The purpose of this thesis is to capture the noise component which makes markets irrational through investor sentiment, and test whether investor sentiment can affect the probability of stock market crises occurring. Several studies have found that investor sentiment seems to affect stock market returns. Thus, the hypothesis in this thesis is that investor sentiment also affects stock market crises and the probability of them occurring. Further it will be investigated if investor sentiment explain stock market returns and whether it can do so during periods defined to be stock market crises.

As previously mentioned, if investor sentiment has an effect on equity prices it contradicts traditional theory assuming rationality and efficiency. Investor sentiment is a rather vague concept regarding the general consumer confidence about the economy and there is no general measure used by all researchers in order to capture the investor sentiment, hence it can be measured through both direct and indirect measures. The direct measure can for example be surveys about consumers' general opinion, while an indirect measure is a measure which tries to use financial and economic variables that correlate with the investor sentiment.

This thesis will investigate the relationship between stock market crises and investor sentiment for nine countries from 2000 until 2014. The countries included in the sample are Belgium, Denmark, France, Germany, Italy, Spain, Sweden, the United Kingdom, and the United States. Crises will be identified by the CMAX measure proposed by Patel and Sarkar (1998), and both OLS models and logit models will be used while connecting the crises to the investor sentiment. The direct measures of Consumer Confidence Indices are used to measure investor sentiment and to serve as proxies for the general thoughts about the present and future economy.

Results show that investor sentiment seems to affect the occurrence of stock market crises in several countries. In Germany, France, the United Kingdom, and the United States the probability of a stock market crises occurring increases when investor sentiment increases. Generally, high investor sentiment seem to have had a higher influence on the subprime mortgage crisis starting in 2007 than on the dot-com bubble during the first couple of years in the 21st century. These findings contribute to the research done in the area of connecting investor sentiment to stock market crises. Further, it contributes to the understanding of how investor sentiment has affected stock market returns during different crises.

Section 2 will provide the theoretical framework regarding investor sentiment and its link to stock market returns and stock market crises. In Section 3, the data and methodology is presented. Section 4 presents and analyses the results while Section 5 concludes.

2 LITERATURE REVIEW

There are numerous studies investigating the relationship between investor sentiment and stock market returns and a few investigate the relationship between investor sentiment and stock market crises. Studies have been made on different markets, during different time periods, through different methods and by using different measures of investor sentiment, and results seem to depend upon these differences. This section will serve as a general overview on what investor sentiment is and how it can be measured, on the research done in the area of connecting investor sentiment to stock market returns in general, and on what has been done in the area of connecting investor sentiment to stock market crises.

2.1 DEFINITION OF INVESTOR SENTIMENT

De Long, Shleifer, Summers and Waldmann (1990) define investor sentiment to be excess return over fundamental expectations. Baker and Wurgler (2006) argue that investor sentiment is the optimism or pessimism about a given asset or the propensity to speculate, while Baker and Wurgler (2007) define it as the belief about future cash flows and risk with investment that is unable to be justified by fundamental facts. These beliefs about future investment expectations can bring over- and undervaluation on stock market prices and thus affect pricing models (Baker & Wurgler, 2007).

2.2 MEASURES OF INVESTOR SENTIMENT

In order to measure these beliefs one can proxy investor sentiment either through direct or indirect measures. Brown and Cliff (2004) find that the direct and indirect measures are related. A direct measure is a market survey while an indirect measure is a financial variable used as an indicator of the public opinion. Such financial variables can for example be the number of IPOs, the first day returns on IPOs, closed-end fund discount (which some consider to be a measure of small investor sentiment), the market liquidity measured as trading volume, retail investors trade, mutual fund flow, dividend premium, and insider trading to name a few. All these financial variables have been considered behavioral factors which can explain the current investor sentiment (Bathia & Bredin, 2013).

There are also several different direct measures of investor sentiment. Apart from using it in their own study, Zouaoui, Nouyrigat and Beer (2011) argue that the direct measure Consumer Confidence Index is used by numerous researchers. Examples of other papers that use the Consumer Confidence Index as a measure of investor sentiment are Schmeling (2009),

Ho and Hung (2009), Lemmon and Portniaguina (2006) and Qiu and Welch (2006). The Consumer Confidence Indices are measured and released by several different centers or organizations. Zouaoui, Nouyrigat and Beer (2011) use the Michigan Consumer Sentiment Index Survey to track the Consumer Confidence at the United States market and the Economic European Commission calculated Consumer Confidence Indices are used for the 15 European countries included in their study. The Michigan Consumer Sentiment Index Survey is a monthly index based on survey responses on questions regarding households' current and expected financial conditions, the Economic European Commission uses similar questions in their survey, which makes the two indices comparable.

Other researchers use the Investors' Intelligence Sentiment Index (Lee, Jiang & Indro, 2001) as the measure for the United States market and the Sentix Eurostoxx 50 as a proxy for the countries at the European market (Corredor, Ferrer & Santamaria, 2015). The Investors' Intelligence Sentiment Index is a weekly announced index, where newsletters are read and categorized depending on their general view about the future. These professionally written newsletters regarding expectations of future market moves are, depending on their view about the future, categorized into three categories; bullish, bearish or neutral. The fact that they are subjective written newsletters with in many cases different time horizons can lead to problems when for example making comparisons. Since the majority of the newsletters contributing to the Investors' Intelligence Sentiment Index is written by current or retired professionals, the index can be used as a proxy for institutional investor sentiment (Brown & Cliff, 2004).

Another index worth mentioning is the investor sentiment index for individual investors by the American Association of Individual Investors. It is a direct measure containing the answers from a random sample of the members of the American Association of Individual Investors, where the participants respond to the question if they think that the stock market will be up, down or at the same level as now in six months' time from now. One problem with this index is that it contains the answers of only 137 respondents on average each time (Brown & Cliff, 2004). Other direct measures are for example the UBS Gallup Survey and the measure by the Conference Board (Bathia & Bredin, 2013).

Other types of more creative measures are not uncommon either. Baker and Wurgler (2006) use principal component analysis to construct their indirect measure of investor sentiment for the US market based on several financial variables. Feldman (2010) calculates a sentiment index, which he calls the perceived loss index, by using mutual funds data. He finds that his index can be used to predict stock market returns at a horizon of one to two years and that the index can be used as a quantitative measure to detect bubbles and financial crises. Da,

Engelberg and Gao (2015) uses daily internet searches by millions of people in order to find a good measure of investor sentiment and find that their index, known as the Financial and Economic Attitudes Revealed by Search (FEARS), predict short term stock returns. Huang, Jiang, Tu and Zhou (2015) construct their own investor sentiment index by eliminating noise components in the sentiment proxies and find that their index can predict stock returns. Joseph, Wintoki and Zhang (2011) examine if investor sentiment can forecast abnormal stock returns and trading volumes when investor sentiment is measured through a method of analyzing online searches for different stock market tickers (for example AAPL for Apple Inc.). Their research finds that these online searches for tickers can predict stock returns over a weekly horizon.

There are obviously advantages as well as disadvantages with all the different types of measures. For direct measures problems with availability can limit the study both when it comes to which market and to which time period that is available to observe. For example, Zhang, Deng and Yang (2010) find that there is no good direct measure for the Chinese market and therefore they feel obliged to use the indirect measure of the growth rate of investor accounts as a proxy of investor sentiment instead. Qiu and Welch (2006) find that an advantage of using the indirect measures over direct measures is that they provide better sample size, but that a disadvantage is that they have a weaker statistical link to investor sentiment than the direct measures does. Another problem with indirect measures is that they might not only represent the investors sentiment since they can be made up of all different macroeconomic and financial variables (Zouaoui, Nouyrigat & Beer, 2011). Ferrer, Salaber and Zalewska (2014) investigate how the relationship between stock market returns and the Consumer Confidence Index vary over time for 12 European Union countries and for the United States by looking at data from 1990 to 2010. Their conclusion is that the Consumer Confidence Index is not a good measure of investor sentiment. Brown and Cliff (2004) find that direct and indirect measures of investor sentiment are correlated but also that they both have little power in explaining near-future stock returns. Bathia and Bredin (2013) examine different types of proxies for investor sentiment, where the Consumer Confidence Index is among them, and find that investor sentiment in general has significant influence on stock market returns.

2.3 INVESTOR SENTIMENT AND STOCK MARKET RETURNS

According to Dergiades (2012) there is no uniformity in the findings of the different studies regarding the relationship between investor sentiment and stock market returns. This can have

several explanations, for example in which way the investor sentiment index is constructed (Dergiades, 2012). But in fact it can be important to measure the investor sentiment in various ways depending on the type of investor that is the objective of observation. Fischer and Statman (2000) find that investors are not alike and that there are three types of groups of investors'. The small individual investors, the medium writers of investment newsletters, and the large Wall Street strategists. Their findings show that the sentiment of the individual investors and the Wall Street strategists are virtually unrelated.

Several studies show that changes in equity values and consumer sentiment are correlated (Otoo, 1999). Studies find that when the investor sentiment is high then subsequent equity returns will fall, indicating that during a period of optimistic investor sentiment equities tend to be overvalued and during a period of pessimistic investor sentiment equities seem to be undervalued and return to a value closer to the one that can be justified according to fundamentals (Chen, Chen & Lee, 2013). Brown and Cliff (2005) show contrary to their earlier findings in Brown and Cliff (2004) that excessive optimism is followed by low cumulative long run returns, which indicate that during excessive optimism there is indeed market overvaluation. Baker and Wurgler (2006) find through their principal component analysis method that different stocks act differently; stocks that are hard to value or hard to arbitrage are more affected by investor sentiment than other stocks. The effect between market returns are higher for stocks whose valuations are highly subjective and difficult to arbitrage. Schmeling (2009) investigate the relationship in 18 industrialized countries and finds that when investor sentiment is high future stock returns tend to be lower in general. This relationship seems to be different in different countries as Schmeling (2009) finds that the institutional quality and various cultural factors in the countries play an important role. Also Bathia and Bredin (2013) find a negative relationship between investor sentiment and future stock returns when investigating the markets for the G7 countries using monthly data between 1995 and 2007. Further, the results of Bathia and Bredin (2013) show that the effect of survey sentiment is stronger for value stocks than for growth stocks. Baker, Wurgler, and Yuan (2012) look at local sentiment for six countries as well as putting them together into one global sentiment measure and find that there is a negative relationship between investor sentiment and future stock market returns. Lemmon and Portniaguina (2006) find that investor sentiment can predict stock market returns while Huang, Jiang, Tu, and Zhou (2015) find that both the Michigan Consumer Sentiment Index as well as the Conference Board's Consumer Confidence Index fails to significantly forecast the future monthly excess returns.

Some researchers find that the relationship between investor sentiment and stock market returns go in the other direction. Canbas and Kandir (2009) claim that stock returns affect indirect measured investor sentiment proxies at the Turkish market and that investor sentiment does not appear to forecast future stock returns. Yu, Huang, and Hsu (2014) find that the relationship goes from stock returns to investor sentiment at the Taiwanese market as well. Brown and Cliff (2004) also find that past market returns are important in determining the investor sentiment. Contrary to other findings they claim there is little predictive power in investor sentiment for near-term future stock market returns. Despite all this lack of uniformity in empirical evidence when investigating the relationship between stock markets returns and investor sentiment, Baker and Wurgler (2007) claim that the question in today's finance should be how to measure investor sentiment and quantify its effects since they regard the fact that investor sentiment affect stock prices a well-known fact.

There are few studies trying to investigate the relationship between investor sentiment and stock market crises. Siegel (1992) uses the direct measure Investors' Intelligence Sentiment Index to measure investor sentiment and finds that even though the investor sentiment index correlates with stock market returns it is uncertain whether the investor sentiment affected the stock market crash of 1987 in the United States. Also Baur, Quintero and Stevens (1996) investigate the relationship between investor sentiment and the stock market crash of 1987 in the United States. By using weekly data and investor sentiment measured as the discount or premium of the prices on closed-end funds relative to their net asset values they find no evidence that investor sentiment contributed to the stock market crash of 1987. They claim that a reason for this could be that they measure investor sentiment in an inappropriate way or that investor sentiment simply did not have an effect on that stock market crash (Baur, Quintero and Stevens, 1996).

Zouaoui, Nouyrigat, and Beer (2011) examine the relationship between investor sentiment and stock market crises, in the United States and in 15 countries in the European Union from April 1995 to June 2009 by using the Michigan Consumer Sentiment Index and the Economic European Commission calculated Consumer Confidence Index as the investor sentiment measures. They try to find out if periods with an optimistic investor sentiment are followed by stock market crises and find that investor sentiment increases the probability of a stock market crisis to occur within the following one year period, especially so in countries with low institutional involvement and countries that culturally overreact more and have more of a herd-like behavior.

3 DATA AND METHODOLOGY

The main objective of this thesis is to test if investor sentiment can explain the occurrence of stock market crises and stock market returns during crisis periods. This section will describe the data and methodology used during the investigation of this. Due to data availability the time period looked upon is limited to January 2000 to December 2014 with some minor exceptions. This time period makes up to 180 data observations per country. All financial data used is monthly and have been extracted from DataStream and the International Financial Statistics database. All data have been seasonally adjusted when needed and if required transformed from quarterly to monthly data through cubic spline interpolation. The countries used in this study, which also have been chosen for availability reasons, as well as the corresponding price indices used can be found in TABLE 1.

TABLE 1: COUNTRIES AND PRICE INDICES IN THE SAMPLE

Belgium	BEL 20
Denmark	OMX COPENHAGEN 20
France	FRANCE CAC 40
Germany	DAX 30
Italy	MILAN COMIT 30
Spain	IBEX 35
Sweden	OMX STOCKHOLM 30
United Kingdom	FTSE 100
United States	S&P 500 COMPOSITE

Table 1 shows the countries as well as the corresponding price indices used in the study. These particular price indices represents the largest companies in each particular country and has been chosen since they provide available data for the whole time period required and since corresponding dividend yields and price-earnings ratios are calculated based on these indices.

Initially Augmented Dickey Fuller tests for unit root have been performed on all series in order to test whether they are stationary or not (see Dickey & Fuller, 1979 and Said & Dickey, 1984). The first differences have been taken on all non-stationary series in order to make them stationary. The remainder of this section will describe the way of identifying crises as well as the variables used and the regression models estimated.

3.1 CRISIS IDENTIFICATION

In order to identify crises a measure known as CMAX have been used. It is a measure of a crisis indicator developed by Patel and Sarkar (1998). It is the same measure that is used by Zouaoui, Nouyrigat and Beer (2011) and even though this does not mean that all identified crises in this thesis will be the same as the ones identified in their study, since the time span and type of price indices differ, it makes it fairer to draw comparisons to their results if the

same method of identifying crises is applied. The formulas used for calculating the CMAX measure are:

$$CMAX_{i,t} = \frac{P_{i,t}}{\max(P_{i,t-24}, \dots, P_{i,t})} \quad (1)$$

$$C_{i,t} = 1 \qquad if\ CMAX_{i,t} < \overline{CMAX_i} - 2\sigma_i \quad (2)$$

$$C_{i,t} = 0 \qquad otherwise \quad (3)$$

$P_{i,t}$ is the stock market index price for country i at time t. If the CMAX value for country i at time t is smaller than the average CMAX for that country minus 2 standard deviations (which can be seen as a threshold level), then a crash is triggered that specific month. The corresponding crisis is defined to start at the month where the price index is at its maximum during the 24 month preceding the indication month of the crash. The trough of a crisis is when the price index reaches its low and the recovery of a crisis is defined to be when the price index again reaches heights above the price level at the start of the crisis. See FIGURE 1 for a graphical example of the CMAX measure and how it is used to identify crises.

FIGURE 1: CRISIS IDENTIFICATION IN SWEDEN

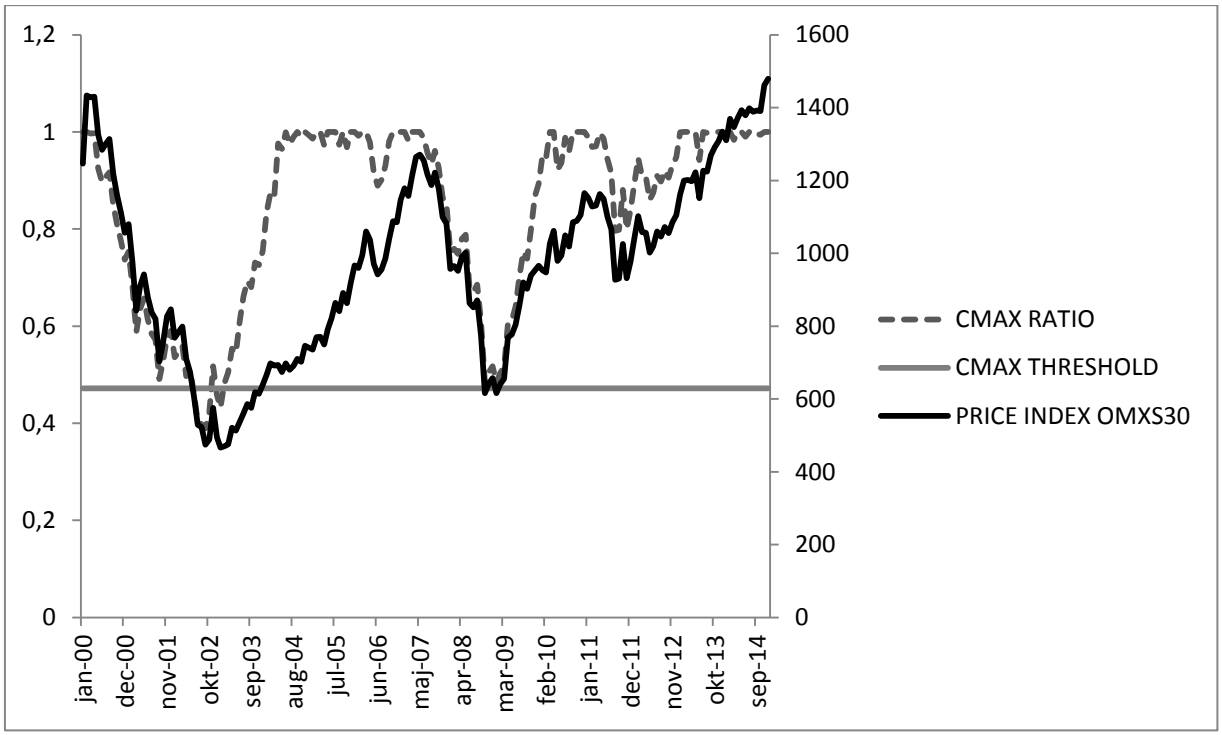


Figure 1 shows the method of identifying crises by CMAX for Sweden between 2000 and 2014. The development of the price index OMXS30 have value on the right hand axis. The CMAX Ratio (the dashed line) and the CMAX threshold (the horizontal line) have numbers on the left hand axis.

A crash is indicated when the CMAX ratio (the dashed line) cross the CMAX threshold line from above. This happens in June 2002, so at that month a crash is triggered, but the crisis started in August 2000 when the price index was at its maximum during the 24 month preceding the trigger month. The trough is at January 2003 when the index reaches its low and the recovery happens in December 2013 when the price index once again reaches above the value at the start of the crisis. This is the only identified crisis in Sweden since the CMAX ratio does not cross the CMAX threshold from above more than once (even though it is close to happening in 2008).

A problem with the CMAX measure's way of identifying crises is that when a crisis is identified then the price index has been dropped a substantial amount already, hence to predict a crisis is something totally different.

By coding each month from the start of the crisis until the trough with 1 and all other months with 0 we get a time series of zeroes and ones for each country. Note that there can be several crises for a country. From these time series of zeroes and ones another time series of zeroes and ones is created by using a methodology suggested by Bussiere and Fratzscher (2006). Their methodology suggests coding ones during the twelve months preceding a crisis and also suggests excluding the eleven months following a trough from the sample. Hence, the eleven months following the end of a crisis period (that is after the trough) are coded with "n.a." and are not included in the regressions. For all countries included in the sample at least one crisis has been identified, and for a majority of the countries two crises are identified. All identified crises occur either during the first couple of years of the 21st century during the dot-com bubble or during the recent financial subprime mortgage crisis, starting in 2007. Since crisis-periods are identified non-crisis periods are also identified. A non-crisis period can be a period before, in between, or after a crisis.

Based on these time series of zeroes and ones it is possible to distinguish between crisis and non-crisis periods and make regressions on the specific crisis-periods and the non-crisis-periods. The crisis codes can also be used as an explanatory dummy variable. It is also possible to use this binary time series as the independent variable in a binary logit regression model. All identified crisis can be found in TABLE 2.

TABLE 2: CMAX IDENTIFIED CRISES

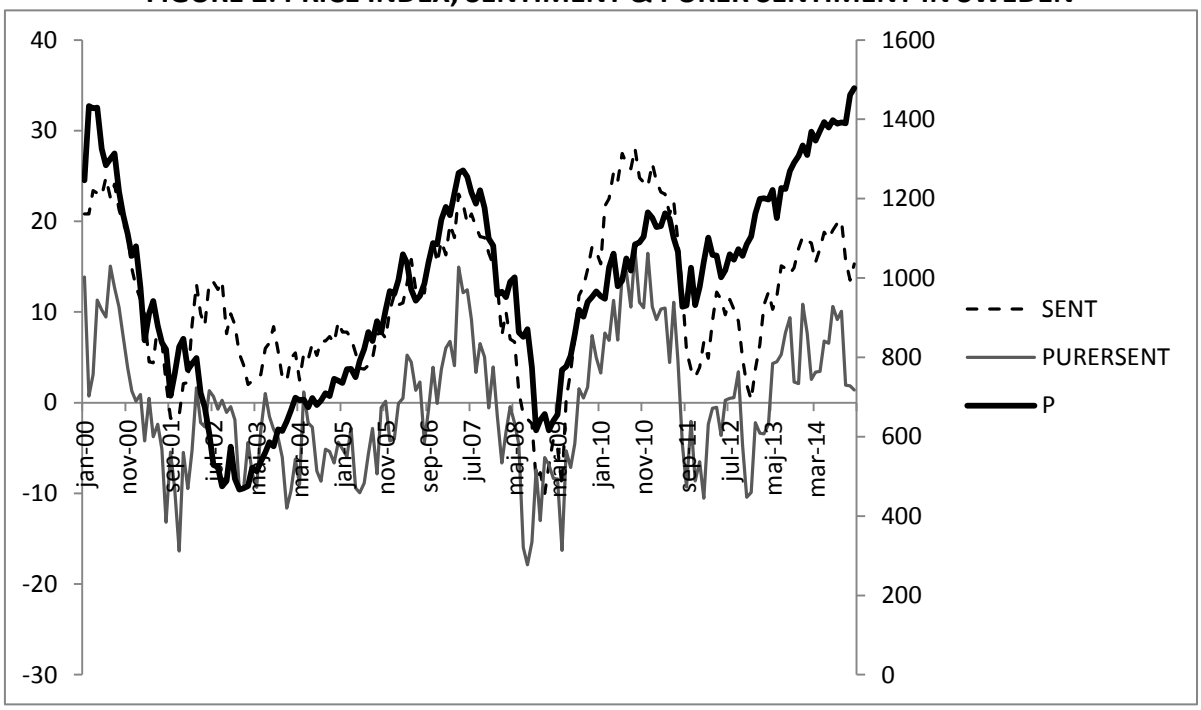
Country	Crisis	Crash	Trough	Recovery	Months crisis-trough
Belgium	2007/05	2008/10	2009/02	n.a.	21
Denmark	2000/10	2002/09	2003/02	2005/07	28
	2007/09	2008/10	2009/03	2013/01	18
France	2000/08	2002/08	2003/03	n.a.	31
	2007/05	2009/02	2009/03	n.a.	21
Germany	2000/08	2002/08	2003/03	2007/04	31
	2007/12	2009/02	2009/03	2013/05	15
Italy	2007/04	2008/12	2009/02	n.a.	22
Spain	2000/09	2002/09	2003/01	2006/01	28
	2007/10	2009/02	2009/03	n.a.	17
Sweden	2000/08	2002/06	2003/01	2013/12	29
United Kingdom	2000/08	2002/07	2003/01	2007/05	29
	2007/10	2008/10	2009/02	2013/10	16
United States	2000/08	2002/07	2002/09	2007/05	25
	2007/10	2008/10	2009/02	2013/03	16

Table 2 report all identified crises from 2000 to 2014 for the nine countries of interest. The starting month of a crisis is the month when the price index reaches its maximum value during the 24 months prior to a stock market crash. A crash is triggered when the CMAX ratio cross the threshold level from above. A price index has recovered from a crisis when the price index again reaches above the value at the start of the crisis. If the price index is yet to recover then the month of recovery is coded with n.a. When running regressions twelve months prior to the start of a stock market crisis is coded as ones together with the crisis. Eleven months after a trough is left out of the sample.

3.2 INVESTOR SENTIMENT

As presented in the literature review section there is not yet any measure of investor sentiment that is used by all researchers. Hence, a choice has to be made of how to measure the investor sentiment. The Consumer Confidence Index has been chosen for several reasons. The Consumer Confidence Indices for the countries of interest have been found at the Economic European Commission's website for all European countries and through the database of the Michigan Research Center for the United States data. Both these sources use similar questions in order to measure the consumer confidence which makes them comparable (Zouaoui, Nouyrigat & Beer, 2011).[1] The measures are general in the sense that they are calculated using the same survey questions for all European countries and with very similar questions used in the United States. The indices have been measured monthly since the mid 1980's for most European countries and even longer in the United States, which makes the time span of the measures long enough. Even though these indices represent the beliefs of individual investors about the economy and not their beliefs about future stock prices, Qiu and Welch (2006) find that they make a good measure anyway since the indices are correlated with stock prices. See FIGURE 2 for a graphical representation of the Consumer Confidence Index and the price index in Sweden.

FIGURE 2: PRICE INDEX, SENTIMENT & PURER SENTIMENT IN SWEDEN



The Investor Sentiment (the dashed line), as extracted from the database, and the purer measure of investor sentiment (the thin line) has the values on the left hand axis. The price index, in the case of Sweden, the OMXS30 (the thick line) has the values according to the right hand axis.

[1] See the appendix for exact wording of the survey questions.

The measure of investor sentiment that can be extracted from the databases of the European Commission and the Michigan Research Center contain fundamental macroeconomic factors. These can be regressed away by an OLS regression in order to receive a purer measure of the investor sentiment measure.

$$SENTIMENT_{i,t} = \alpha + \beta_1 IP_{i,t} + \beta_2 HE_{i,t} + \beta_3 ST_{i,t} + \beta_4 DY_{i,t} + \varepsilon_{i,t} \quad (4)$$

The fundamental macroeconomic factors used since they are considered to be related to business cycles are the following. $IP_{i,t}$ is the change in the natural logarithm of the industrial production index for country i, HE is the change in the natural logarithm of household expenditure, ST is the term spread, which is the difference between the yield on a 3 month Treasury bill and the yield on a 10 year government bond, and DY is the dividend yield for country i at time t. Both ST and DY have been made stationary by the method of difference. All these fundamental macroeconomic factors have been chosen since they are used by Zouaoui, Nouyrigat and Beer (2011), the aim is to receive investor sentiment measures as similar to the ones used by them as possible. The residuals make a purer measure of investor sentiment than the normal Consumer Confidence Indices extracted from the databases does since various macroeconomic variables have been deleted from the measure.

Both Zouaoui, Nouyrigat, and Beer (2011) as well as Chung, Hung and Yeh (2012) find it necessary to run a regression of this type, save the residuals and use the residuals as a measure of the purer sentiment value. Also Wolff (2013) runs a regression with various macroeconomic variables in order to obtain a macroeconomic trend free measure of investor sentiment. By running the above regression by OLS and saving the residuals we can use the residuals as a purer measure of investor sentiment.

3.3 MACROECONOMIC VARIABLES EXPLAINING CRISES

There are not many studies investigating which variables explain stock market crises (Zouaoui, Nouyrigat & Beer, 2011). Coudert and Gex (2008) identify the price-earnings ratio, the real interest rate, the year-on-year changes in stock prices, and risk aversion measuring indices such as the VIX, to be good predictors of stock market crises while investigating the effects of these variables on stock market crises in 27 countries between 1995 and 2005. Other studies show that the price level, measured as the inflation rate, is related to stock market prices and thus also affect stock market crises (Pearce, 1982). A more extensive

description of each of these variables and why they are relevant in explaining stock market crises will now follow.

The implied volatility of options can be measured through the VIX and VSTOXX indices. The VIX shows the market expectation of 30-day volatility on the American market. It was introduced by Chicago Board Options Exchange in 1993 and has been calculated ever since. The VSTOXX is the equivalent at the European market, introduced in 1999. The indices are usually known as "fear indices" and measure how much the market is willing to pay against the risk of price movements, hence they measure risk aversion. Empirical tests by Coudert and Gex (2008) show that such indices tend to increase prior to financial crises. Thus they can be good at predicting stock market crises. In this thesis the VIX will be used in the United States only, while the VSTOXX will be used to capture the volatility for all European countries.

The price-earnings ratio (PER) is measured by dividing the market price of a stock by its earnings. This can be done for total stock market price indices as well. Campbell and Shiller (2001) show that when the price-earnings ratio is relatively high then future stock prices will probably go down. This finding is consistent with the theory of mean reversion which say prices revert to their long-term mean. Coudert and Gex (2008) find that high price-earnings ratios increase the probability of a stock market crisis to occur. A high price-earnings ratio might indicate that the underlying stock is overvalued (Coudert and Gex, 2008).

The interest rate (INT) is measured by the money market rate and made stationary by taking the first differences. Interest rates tend to have a negative relation to stock market prices. Coudert and Gex (2008) find that real interest rates are related to stock market crises and claim that interest rates usually decline prior to a stock market crisis.

The one-year return (RET) on stock prices is calculated from the corresponding price index. Since we identify a crisis when it already started we expect the one-year return to already have dropped. Thus the sign of the one-year return is expected to be negative. (Coudert & Gex, 2008)

Several studies show the relationship between the inflation rate (INF) and stock market prices. Pearce (1982) finds that the relationship between the inflation rate and stock market returns is negative. Also, Fama and Schwert (1977) provide evidence, while studying monthly data at the American market 1953-1971, that the relationship between stock market returns and the inflation rate is negative. Bordo and Wheelock (1998) claim that fluctuations in the price level, the inflation, contribute to financial instability. Stock prices tend to be negatively

correlated with inflation. In order to measure the inflation rate the logarithmic change in the harmonized consumer price indices has been used.

3.4 MODELS RUN

In order to check the robustness of the results, three different models have been run in the attempt of investigating the relationship between investor sentiment and stock market crises: (i) A binary logit model run for each country where the crisis-codes are the dependent variable. (ii) An OLS model with the one month stock return as the dependent variable is run during the whole sample period for each country, also including a dummy variable coded for crisis and non-crisis periods. (iii) A simple OLS model with one month stock market return as the dependent variable is run for each type of period for each country. All models have been estimated in EViews 8. This subsection will explain all three models in more detail.

3.4.1 LOGIT MODEL

The explained variable in the logit model is the times series of the coded crises. A crisis code coded as 1 equals a crisis while 0 indicates a non-crisis period. So a model of this type is testing which independent variables explain the probability that a crisis will occur. Among the independent variables all previously mentioned macroeconomic variables and the behavioral variable of investor sentiment are included. Three different logit models are run. The first one includes the traditionally macroeconomic variables only, the second model includes only the purer measure of investor sentiment variable, while the third model includes both the macroeconomic variables and the investor sentiment variable. All explanatory variables have been standardized before the regressions have been run. All models are run using maximum likelihood and a constant included. The logit function is $f(x) = \frac{e^x}{1+e^x}$.

$$\begin{aligned} \Pr(CriseCode_{i,t}) = 1 \\ = f(\alpha + \beta_1 VIX_{i,t} + \beta_2 INT_{i,t} + \beta_3 RET_{i,t} + \beta_4 PER_{i,t} \\ + \beta_5 INF_{i,t} + \varepsilon_{i,t}) \end{aligned} \tag{5}$$

$$\Pr(CriseCode_{i,t}) = 1 = f(\alpha + \beta_1 PURERSENT_{i,t} + \varepsilon_{i,t}) \tag{6}$$

$$\Pr(CriseCode_{i,t}) = 1 = f(\alpha + \beta_1 VIX_{i,t} + \beta_2 INT_{i,t} + \beta_3 RET_{i,t} + \beta_4 PER_{i,t} + \beta_5 INF_{i,t} + \beta_6 PURERSENT_{i,t} + \varepsilon_{i,t}) \quad (7)$$

The $VIX_{i,t}$ is the volatility index for country i at time t, $INT_{i,t}$ the interest rate, $RET_{i,t}$ the one-year return, $PER_{i,t}$ the price-earnings ratio, $INF_{i,t}$ the inflation rate, $PURERSENT_{i,t}$ the purer measure of investor sentiment calculated as in Equation (4), $CriseCode_{i,t}$ is a dummy variable equal to zero during a non-crisis period and to one during a crisis period, $1M\ Return_{i,t-1}$ is the one month lag of the one month return.

3.4.2 OLS ON WHOLE PERIODS, DUMMY VARIABLE INCLUDED

OLS is run for each country during the whole time period, from 2000 to 2014, consisting of up to 180 monthly observations per country. The time series length give the possibility of including independent variables other than the investor sentiment variable, measured as the Consumer Confidence Index, and the lag of the investor sentiment variable. All macroeconomic variables previously mentioned can be included but it is also possible to include the dummy variables coded depending on whether a crisis period is present or not. Since the dependent variable, the one month return, suffers from autocorrelation, the lag of the one month return is included as an independent variable. HAC standard errors are also used when running these regressions in order to deal with the autocorrelation. The HAC standard errors are robust standard errors for OLS which deal with autocorrelation and heteroskedasticity (Newey & West, 1987). Equation (8) is the most extensive OLS model run on the whole time period 2000-2014 for each country. By removing several of the variables various variations of the model are run as well.

$$1M\ Return_{i,t} = \alpha + \beta_1 VIX_{i,t} + \beta_2 INT_{i,t} + \beta_3 RET_{i,t} + \beta_4 PER_{i,t} + \beta_5 INF_{i,t} + \beta_6 PURERSENT_{i,t} + \beta_7 PURERSENT_{i,t-1} + \beta_8 CriseCode_{i,t} + \beta_9 1M\ Return_{i,t-1} + \varepsilon_{i,t} \quad (8)$$

3.4.3 OLS ON DIFFERENT TIME PERIODS

OLS is also run separately for each type of period (crisis/non-crisis) and for each country. This is done in order to check for any differences in the effect of the investor sentiment variable depending on whether a crisis is present or not. So for a country which suffers from

two crises and have two non-crises periods there are four periods in total. For all these four periods six OLS regressions will be run. The dependent variable is the monthly return on stock price indices for the various countries. Since the number of months in this case might be limited down to 25 months at some points, the numbers of independent variables have to be limited as compared to when running the regressions on the whole time sample period. If to many variables are included for a short time sample, there are too few degrees of freedom and problems may arise. The independent variables have been limited to be maximum three, the purer measure of investor sentiment, one lag of this purer sentiment measure and one lag of the dependent variable one month return. In order to deal with the problem of autocorrelation in the dependent variable, the one month return a lag of this variable is included. Robust HAC standard errors are also used when running these regressions. For each type of period for each country the following similar six regressions are estimated. Equation (14) is the most extensive one, including all three possible independent variables.

$$1M\ Return_{i,t} = \alpha + \beta_1 PURERSENT_{i,t} + \varepsilon_{i,t} \tag{9}$$

$$1M\ Return_{i,t} = \alpha + \beta_1 PURERSENT_{i,t} + \beta_2 1M\ Return_{i,t-1} + \varepsilon_{i,t} \tag{10}$$

$$1M\ Return_{i,t} = \alpha + \beta_1 PURERSENT_{i,t-1} + \varepsilon_{i,t} \tag{11}$$

$$1M\ Return_{i,t} = \alpha + \beta_1 PURERSENT_{i,t-1} + \beta_2 1M\ Return_{i,t-1} + \varepsilon_{i,t} \tag{12}$$

$$1M\ Return_{i,t} = \alpha + \beta_1 PURERSENT_{i,t} + \beta_2 PURERSENT_{i,t-1} + \varepsilon_{i,t} \tag{13}$$

$$1M\ Return_{i,t} = \alpha + \beta_1 PURERSENT_{i,t} + \beta_2 PURERSENT_{i,t-1} + \beta_3 1M\ Return_{i,t-1} + \varepsilon_{i,t} \tag{14}$$

4 EMPIRICAL FINDINGS AND ANALYSIS

In this section the main empirical findings will be presented and commented. Due to space limitations only the main results will be presented in this section while tables of all other empirical findings can be found in the appendix. As previously mentioned, three different types of models have been estimated. Subsections concentrating on these three models separately will follow.

4.1 LOGIT MODEL

Only the most extensive logit model (*"Logit Model 3"*), with all macroeconomic variables as well as the investor sentiment variable, will due to space limitations be presented in this section, see TABLE 3 for these results (see the appendix for results from the two other logit models run). This larger logit model tends to have a higher McFadden R^2 value than the other smaller models for all countries. The values of the McFadden R^2 vary from 4 percent to 73 percent across countries for the most extensive logit model. The likelihood ratio probabilities for Logit Model 3 indicate for all countries that the joint null hypothesis that all coefficients, apart from the constants, are zero can be rejected. Hence, these statistics and probabilities are not presented. Also the variables that are statistically significantly different from zero and hence have an effect on the dependent binary variable consisting of crisis codes, differs among countries. This part will explain these differences and analyze the major patterns in the regression results.

The most interesting variable is without a doubt the investor sentiment variable (called PURERSENT in the table). There is no consistency in the statistical significance of this variable across countries. The variable is proved to have statistical significance for several countries but none for others. In France, Germany, United Kingdom and in the United States the investor sentiment variables are significantly positive. The positive sign indicates that the investor sentiment has the expected effect on stock market crises. The value of the investor sentiment is thus making a difference in explaining the probability of stock market crises to occur in the countries mentioned, if the investor sentiment increases the probability of a stock market crisis to occur also increases. Schmeling (2009) finds that the relationship between investor sentiment and stock market returns differs across countries and that the institutional quality and cultural factors play a role in explaining stock markets returns. These factors might be one reason why the results in this thesis differ among countries also for stock market

crises. For further research it would therefore be of interest to incorporate such factors when estimating the relationship between investor sentiment and stock market crises as well.

Zouaoui, Nouyrigat and Beer (2011) argue that investor sentiment is an indicator of stock market crises while neither Baur, Quintero and Stevens (1996) nor Siegel (1992) found evidence that investor sentiment was an indicator of the 1987 stock market crash in the United States. The different in methods applied is most probable the explanation of these differences in results.

The coefficients for the volatility variables, VIX and VSTOXX, are never significant for any of the countries looked upon. Also Zouaoui, Nouyrigat and Beer (2011) find that VIX have no statistical significance in explaining stock market crises. These findings contradict the underlying theory of why to include these risk aversion variables as proposed by Coudert and Gex (2008). Coudert and Gex (2008) claim that VIX have a positive effect on the probability of stock market crises to occur. Zouaoui, Nouyrigat, and Beer (2011) use the VIX both for the American and the European market. The findings of this thesis show that it makes no difference in results when using the VSTOXX for the European market. According to the findings of this study neither of the two volatility indices seem to have a role in explaining the stock market crises. Thus, investor sentiment can be claimed to be a better predictor of stock market crises than VIX and VSTOXX.

The interest rate (INT) is never significant for the European countries but for the United States it is negatively significant and thus has a negative relation on the probability of stock market crises to occur. Also Zouaoui, Nouyrigat and Beer (2011) find that the interest rate has a negative effect on the probability of a stock market crisis to occur. Thus, during a period with a relative higher interest rate the probability of a stock market crisis to occur in the United States is higher. Interest rates tend to decline before a stock market crisis (Coudert and Gex, 2008), and thus if the interest rate is at a relatively high level, the probability of it getting lower is higher and thus also the probability of a stock market crises. For the European countries the conclusion that the interest rate is a good indicator of stock market crises to occur cannot be drawn, since none of the coefficients for the interest rate are statistically significant.

The variables of one-year stock return (RET) are statistically significant different from zero for all countries. The effect is strongly significantly negative on crises no matter the country looked upon. This relationship is logic since if the one-year returns are high it means that the price index have been improving during the last year, and hence according to mean reversion theory, the probability of a drop back in price should increase. Also both Coudert

and Gex (2008) and Zouaoui, Nouyrigat and Beer (2011) find the year-on-year changes in stock prices have a negative effect on the probability of a stock market crisis to occur.

The price-earnings ratio (PER) has a negative effect in Spain while it does not have a statistically significantly effect on stock market crises for any of the other countries. In Spain, the effect of the price-earnings ratio is negative on the probability of stock market crises. An increase in the stock valuation, measured as the price-earnings ratio, decrease the probability of a stock market crisis to occur. This finding is inconsistent with the underlying theory by Coudert and Gex (2008) showing that a high price-earnings ratio tends to increase the probability of a stock market crisis to occur.

The inflation (INF) is positively significant in the United States but cannot be proved to be statistically different from zero in any of the European countries. This finding in the United States is comprehensive with underlying economic theory. Several studies, including Pearce (1982), Fama and Schwert (1977), and Bordo and Wheelock (1998) show that the relation between stock market returns and the inflation rate is negative. Central banks try to hold the inflation rate at a steady level in order to make the society know what to expect of future price levels. Hence, the positive inflation variable indicates that an unstable and fluctuating inflation rate has an effect on the probability of a stock market crises.

TABLE 3: ALL COUNTRIES, LOGIT MODEL 3, 2000-2014

Independent var.	BELGIUM	DENMARK	FRANCE	GERMANY	ITALY	SPAIN	SWEDEN	UNITED KINGDOM	UNITED STATES
C	-1.4561***	-0.2277	-0.2886	-0.4702**	-1.4258***	-0.3806**	-1.4200***	0.2327	1.7239**
	[-7.0733]	[-1.2534]	[-1.3468]	[-2.3055]	[-6.9927]	[-2.1337]	[-6.7488]	[0.9040]	[2.5582]
	(0.0000)	(0.2101)	(0.1780)	(0.0211)	(0.0000)	(0.0329)	(0.0000)	(0.3660)	(0.0105)
VSTOXX/VIX	0.0825	0.0369	0.0195	0.0747	0.0806	0.0802	0.0402	0.0875	0.4003
	[0.4329]	[0.1988]	[0.0902]	[0.4069]	[0.4343]	[0.4616]	[0.2178]	[0.3556]	[0.7753]
	(0.6651)	(0.8424)	(0.9281)	(0.6841)	(0.6640)	(0.6444)	(0.8276)	(0.7222)	(0.4382)
INT	0.0706	0.2746	0.2392	0.1353	0.1441	0.0379	0.3370	0.4764	-4.9962***
	[0.3388]	[1.3112]	[1.0047]	[0.6124]	[0.6468]	[0.1882]	[1.3017]	[1.5801]	[-3.6908]
	(0.7348)	(0.1898)	(0.3151)	(0.5402)	(0.5178)	(0.8507)	(0.1930)	(0.1141)	(0.0002)
RET	-0.5189**	-1.0675***	-1.3332***	-1.4443***	-0.4940**	-0.7291***	-0.8146***	-3.0062***	-6.3157***
	[-2.2347]	[-3.9995]	[-4.6680]	[-5.2993]	[-2.0252]	[-3.4238]	[-2.9680]	[-5.8581]	[-4.3220]
	(0.0254)	(0.0001)	(0.0000)	(0.0000)	(0.0428)	(0.0006)	(0.0030)	(0.0000)	(0.0000)
PER	-0.1672	0.0711	-0.1761	-0.2213	-0.1968	-0.4325**	-0.0606	0.2209	0.1512
	[-0.7204]	[0.4144]	[-0.8222]	[-0.9861]	[-0.9697]	[-2.2479]	[-0.3064]	[0.8162]	[0.3475]
	(0.4713)	(0.6786)	(0.4109)	(0.3241)	(0.3322)	(0.0246)	(0.7593)	(0.4144)	(0.7282)
INF	0.1041	0.0506	0.1983	0.0151	0.0136	0.0123	0.0076	0.1232	1.3700***
	[0.5190]	[0.2780]	[0.9486]	[0.0824]	[0.0718]	[0.0679]	[0.0354]	[0.5881]	[2.8492]
	(0.6038)	(0.7810)	(0.3428)	(0.9343)	(0.9428)	(0.9458)	(0.9718)	(0.5565)	(0.0044)
PURERSENT	-0.0061	-0.1549	1.6547***	0.6927***	-0.2498	-0.0915	0.3235	0.7271***	3.5180***
	[-0.0293]	[-0.6824]	[5.7477]	[2.9151]	[-1.2921]	[-0.4948]	[1.3201]	[3.3091]	[4.4930]
	(0.9767)	(0.4950)	(0.0000)	(0.0036)	(0.1963)	(0.6207)	(0.1868)	(0.0009)	(0.0000)
McFadden R^2	0.0462	0.1498	0.3434	0.2121	0.0472	0.1240	0.0737	0.4462	0.7335

The dependent variable for all logit models are the binary crisis codes. The time period looked upon is 2000-2014. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1. VSTOXX is the variable for all the European countries while VIX is the variable used for the United States.

4.2 OLS ON WHOLE PERIODS, DUMMY VARIABLE INCLUDED

The dependent variable in this model is the one month return. When looking at the OLS models which have been run for the whole time sample 2000-2014, the output show that the highest adjusted R^2 for most countries occur for the models with all potential explanatory variables included. Hence, only these results will be presented in this section, see TABLE 4 for these results. The adjusted R^2 values for this extensive model are for all countries in between 39 percent and 82 percent. See the appendix for output from all other smaller models run, sorted with respect to countries. Note that all coefficients have been scaled in order to make them comparable across countries.

The most interesting variables to look at are the behavioral finance variables. Interestingly, the first behavioral finance variable included, representing investor sentiment is positively statistically significant for France and for the United Kingdom but only so at the 10 percent significance level. Investor sentiment affects monthly stock market returns positively for these two countries. For all other countries included in the sample no such relation can be proven to exist. Thus, the evidence that the investor sentiment affect stock market returns lack in uniformity across countries. Previously, several papers (see for example Brown & Cliff, 2005 and Bathia & Bredin, 2013) have found that there is a negative relationship between investor sentiment and stock market prices. This means that a high level of investor sentiment tends to provide lower future stock returns (Bathia & Bredin, 2013). Investor sentiment is thus seen as a contrarian indicator of stock market returns. Thus surprisingly, the effects on stock market returns on investor sentiment are positively for France and the United Kingdom in the OLS model estimated in this thesis. However, that the results are only true for two out of nine countries and only at the ten percent significance level indicates that the effect of these results should not be exaggerated.

The one month lagged investor sentiment variable show a negative sign and is significant for France, Belgium and Germany. This means that the last month's investor sentiment value has an negative effect on today's stock market returns. This is reasonable and consistent with previous findings indicating that the investor sentiment can be used as a contrarian indicator of stock market returns.

The binary crisis codes are negatively significant for Belgium and Sweden only. That the coefficients for the dummy variables are negative indicate that during stock market crises stock market returns will be more negatively affected than during non-crisis periods in these countries. These findings seem reasonable as it seems intuitive for stock market returns to be lower during stock market crises as compared to non-crisis periods. Despite this, no such

relationship can be proven for the countries other than Belgium and Sweden, since the crisis codes in these other countries show no statistical significance.

Among the traditional macroeconomic variables, several variables are statistically significantly different from zero. The volatility variable VSTOXX shows the expected negative sign and is statistically significantly different from zero for all European countries, while the corresponding VIX is not significantly different from zero for the United States. The negative relationship between changes in the VSTOXX index and stock market returns indicate that when the volatility index increase stock market returns decrease, ceteris paribus. During times of a raised instability and high price movements, stock market returns seem to be lower than during more stable times. The interest rate (INT) is only significant for France (positive), Sweden (negative) and the United Kingdom (negative) and shows different signs, and thus it is ambiguous whether changes in the interest rates affect stock market returns or not, even though it seem to do so in specific countries. Hence, an inverse relationship between stock market returns and interest rate yields is hard to prove.

The one-year return (RET) and the price-earnings ratio (PER) are both positively statistically significantly and thus affecting the dependent variable for all countries included in the sample. That the effect of the one-year return is positive, means that if a stock has risen during the last year, then it has a positive effect on current stock market return. The stock market returns seem to depend on this momentum. Similarly, if the price-earnings ratio is at relatively high levels then the stock market returns tend to be high, and that is the probable reason for the countries to be valuated at high levels. This contradicts the mean-reversion theory suggesting that stocks or stock markets that are highly valued according to the price-earnings ratio should examine negative returns in order to make the price-earnings ratio move against a long-term mean (Campbell & Schiller, 2001).

Inflation (INF) is only significant for Belgium (negative), Denmark (positive), and the United Kingdom (positive) and show different signs for the countries. So the price level in a country seems to affect stock market returns differently depending on country. When positive, a higher inflation rate has a positive effect on stock market returns. If the price level goes up, then stock market returns go up, this seems intuitively. The contrary effect is harder to explain with economic arguments.

The lagged one month return is negatively significant for all countries except Germany and the United States while the constants not are significant for any country. That the coefficients for the lag of the dependent variable is negatively significant indicate a reversion in stock market prices towards a long term equilibrium value.

TABLE 4: ALL COUNTRIES, OLS, 2000-2014

Independent var.	BELGIUM	DENMARK	FRANCE	GERMANY	ITALY	SPAIN	SWEDEN	UNITED KINGDOM	UNITED STATES
PURERSENT	0.1965	0.0314	0.1751*	0.2221	0.0818	0.0491	-0.0320	0.1593*	0.0572
	[1.5987]	[0.3451]	[1.7328]	[1.6327]	[0.6058]	[0.3141]	[-0.2230]	[1.7650]	[0.5230]
	(0.1119)	(0.7305)	(0.0853)	(0.1047)	(0.5455)	(0.7539)	(0.8239)	(0.0797)	(0.6018)
PURERSENT(-1)	-0.2281*	-0.0463	-0.2004*	-0.2477*	-0.1547	-0.0588	-0.1456	-0.1222	-0.0544
	[-1.7775]	[-0.3717]	[-1.7100]	[-1.7883]	[-1.0118]	[-0.4019]	[-0.9860]	[-1.4079]	[-0.5615]
	(0.0774)	(0.7106)	(0.0894)	(0.0758)	(0.3132)	(0.6883)	(0.3256)	(0.1613)	(0.5754)
CRISIS CODE	-0.1122**	-0.0660	-0.0881	-0.0656	-0.0761	0.0474	-0.1310*	-0.0083	0.0107
	[-2.0231]	[-0.8468]	[-1.4264]	[-0.9770]	[-1.5619]	[0.8580]	[-1.6833]	[-0.1544]	[0.2672]
	(0.0447)	(0.3985)	(0.1559)	(0.3302)	(0.1203)	(0.3923)	(0.0943)	(0.8775)	(0.7897)
1M RET.(-1)	-0.1476**	-0.2662***	-0.1960***	-0.1038	-0.2147***	-0.1350*	-0.2045***	-0.2570***	-0.0708
	[-2.3388]	[-4.4507]	[-3.3857]	[-1.0859]	[-3.9411]	[-1.8564]	[-3.1334]	[-3.8708]	[-1.2325]
	(0.0206)	(0.0000)	(0.0009)	(0.2793)	(0.0001)	(0.0654)	(0.0021)	(0.0002)	(0.2198)
C	0.0031	-0.0036	0.0021	0.0013	-0.0010	-0.0036	0.0019	-0.0017	-0.0006
	[0.7595]	[-0.4818]	[0.5366]	[0.3089]	[-0.2739]	[-0.7414]	[0.3723]	[-0.5383]	[-0.2527]
	(0.4487)	(0.6307)	(0.5924)	(0.7578)	(0.7845)	(0.4596)	(0.7102)	(0.5912)	(0.8008)
VSTOXX	-0.3107***	-0.2875***	-0.2234***	-0.2457***	-0.3055***	-0.1498*	-0.2515***	-0.2601***	-0.0564
	[-4.1206]	[-4.3871]	[-3.1635]	[-2.7998]	[-3.9907]	[-1.8043]	[-2.9502]	[-3.5484]	[-1.1961]
	(0.0001)	(0.0000)	(0.0019)	(0.0058)	(0.0001)	(0.0732)	(0.0037)	(0.0005)	(0.2336)
INT	0.0871	-0.0861	0.1505***	0.0886	0.0042	0.0517	-0.1193*	-0.0796**	0.0707
	[0.9352]	[-1.1181]	[2.7205]	[1.3788]	[0.0725]	[0.7519]	[-1.7199]	[-2.048]	[1.4781]
	(0.3511)	(0.2653)	(0.0073)	(0.1701)	(0.9423)	(0.4533)	(0.0874)	(0.0424)	(0.1416)
RET	0.3867***	0.4384***	0.2631***	0.3150***	0.3641***	0.2836***	0.3752***	0.4022***	0.3582***
	[3.9358]	[5.3831]	[3.6238]	[2.9190]	[5.1683]	[3.5123]	[4.4322]	[6.4568]	[5.6567]
	(0.0001)	(0.0000)	(0.0004)	(0.0041)	(0.0000)	(0.0006)	(0.0000)	(0.0000)	(0.0000)
PER	0.3139***	0.3744***	0.5876***	0.4978***	0.4808***	0.5831***	0.4358***	0.5650***	0.7629***
	[2.9551]	[4.1229]	[5.0239]	[3.6098]	[5.1305]	[4.4861]	[3.0674]	[6.9243]	[11.977]
	(0.0036)	(0.0001)	(0.0000)	(0.0004)	(0.0000)	(0.0000)	[0.0025]	(0.0000)	(0.0000)
INF	-0.1091*	0.1318**	0.0386	-0.0247	0.0619	-0.0014	0.0076	0.1053*	-0.0379
	[-1.9502]	[2.2441]	[0.7939]	[-0.5087]	[0.7615]	[-0.0265]	[0.1182]	[1.8583]	[-1.0974]
	(0.0529)	(0.0263)	(0.4286)	(0.6117)	(0.4475)	(0.9789)	(0.9061)	(0.0652)	(0.2743)
Adjusted R^2	0.4105	0.4442	0.6451	0.4955	0.5040	0.4711	0.3946	0.6127	0.8190

The dependent variable is the one month return. The time period looked upon is 2000-2014. The countries suffer from a different number of crises, see TABLE 2 for all identified crises. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1. VSTOXX is the variable for all the European countries while VIX is the variable used for the United States.

4.3 OLS ON DIFFERENT TIME PERIODS

Since the investor sentiment variable and the lag of the investor sentiment variable are found to have a statistical significance for a couple of countries when running the regression on the whole time sample, it is interesting to see what these effects look like when breaking down and looking at different crisis-periods and non-crisis-periods apart. Are there any periods in which investor sentiment affect stock market returns more?

When looking at the empirical findings, when dividing in different periods depending on if there is a crisis or not, the differences between countries, type of periods, and the number of explanatory variables included in the models are strikingly. These differences make it hard to draw any general conclusions, but also make the allocation into different periods relevant. The differences among countries and periods regard both the explanatory adjusted R^2 values, and the number and sign of statistically significant variables. The highest adjusted R^2 values vary across model extensions across countries. The output of the most extensive model, estimated as in Equation (14), can be found in TABLE 5. Results from all other less extensive models run can be found in the appendix.

Remember that the explanatory variables in this type of model solely are the pure measure of investor sentiment, the one month lagged pure measure of the investor sentiment, and the lagged one month return. The dependent variable is the one month return. All regressions are run with a constant. The focus will be on the behavioral finance variable investor sentiment and the lag of the investor sentiment variable. Note that all coefficients have been scaled in order to make them comparable across countries.

The behavioral finance variable, investor sentiment, seems to have different effect depending on the country, model extension, and time-period studied. The coefficients of the behavioral variables seem to have a tendency to be more statistically significant during the second crises period, occurring around the subprime mortgage crises starting in 2007, than during to the first crisis period around the dot-com bubble in the start of the 21st century. During the second crisis period six behavioral investor sentiment coefficients are significant as compared to three coefficients during the first crisis period, perhaps this is something that could have been expected since the subprime mortgage crisis was a bigger crisis. That the effect of investor sentiment on stock market returns was higher during the subprime mortgage crisis indicate that also stock markets prices in general were more overvalued as compared to fundamentals during that crisis. Also, the adjusted R^2 values are in the general higher for models run during the subprime crisis as compared to the dot-com bubble. Furthermore, there seem to be a tendency of having more significant investor sentiment variables when all

possible independent variables are included in the model. These models seem to have more explanatory value than the less extensive models. The sign of investor sentiment, are when statistically significantly different from zero at most times positive, while it a few times (for Spain and Italy) is negative. If the coefficient for the investor sentiment variable is positive then investor sentiment is proved to have a positive effect on stock market returns. This relation seems to be more profound during the subprime mortgage crisis.

Intuitively all non-crisis periods should look alike in terms of significant variables and their signs. Generally the R^2 values are very low for all non-crisis periods, this supports the hypothesis that non-crises should look alike. But differences in which, and how many, variables that are significant are present. The reason for this might be the differences in the number of observations making up to a non-crisis period. These small sample sizes might be unrepresentative of non-crisis periods in general. Also, a non-crisis period in for example Germany does not necessarily have to be of the same length and at the same time as a non-crisis period in France.

TABLE 5: ALL COUNTRIES, OLS, SEPARATE PERIODS

	BELGIUM		DENMARK		FRANCE		GERMANY		ITALY		SPAIN		SWEDEN	UNITED KINGDOM		UNITED STATES	
Crisis	*1*		*1*	*2*	*1*	*2*	*1*	*2*	*1*		*1*	*2*	*1*	*1*	*2*	*1*	*2*
PURER-SENT	0.3969 [1.6595] (0.1078)		-0.1160 [-0.6573] (0.5155)	0.7584* [2.0122] (0.0547)	0.3147 [1.4252] (0.1632)	0.4847** [2.1554] (0.0396)	0.4295 [1.0847] (0.2857)	0.5337* [1.7452] (0.0943)	0.0402 [0.2278] (0.8213)		-0.6075* [-1.8290] (0.0767)	-0.5369** [-2.2031] (0.0370)	-0.1473 [-0.4818] (0.6332)	0.0239 [0.1453] (0.8854)	-0.2030 [-0.8391] (0.4097)	0.5274* [1.9986] (0.0554)	-0.0082 [-0.0121] (0.9904)
PURER-SENT(-1)	-0.1377 [-0.6412] (0.5265)		-0.0349 [-0.1960] (0.8458)	-0.2935 [-0.6993] (0.4906)	-0.1905 [-0.7713] (0.4459)	-0.2270 [-1.0336] (0.3099)	-0.1764 [-0.4219] (0.6757)	-0.1597 [-0.4299] (0.6712)	-0.2470 [-0.9238] (0.3629)		0.5700 [1.4918] (0.1455)	0.8216*** [3.4152] (0.0022)	0.1221 [0.3595] (0.7216)	-0.0396 [-0.2003] (0.8425)	0.5799** [2.2135] (0.0366)	-0.4715** [-2.2421] (0.0331)	0.1621 [0.2459] (0.8078)
1M RETURN(-1)	0.1714 [1.0623] (0.2969)		-0.0028 [-0.0255] (0.9798)	-0.1058 [-0.7163] (0.4802)	-0.0032 [-0.0256] (0.9797)	0.1990 [1.6265] (0.1147)	0.0632 [0.4043] (0.6886)	-0.0885 [-0.5946] (0.5579)	0.2793* [2.0034] (0.0542)		0.0123 [0.1254] (0.9010)	0.0971 [1.1718] (0.2523)	0.0457 [0.3272] (0.7457)	-0.0600 [-0.5033] (0.6182)	-0.0805 [-0.7000] (0.4907)	-0.1603* [-1.9980] (0.0555)	0.3395** [2.0784] (0.0485)
C	-0.0182* [-1.8001] (0.0822)		-0.0096 [-0.9541] (0.3470)	-0.0067 [-0.6833] (0.5005)	-0.02084 [-1.8760] (0.0693)	-0.0227** [-2.0848] (0.0460)	-0.0235* [-1.8956] (0.0665)	-0.0225 [-1.6417] (0.1142)	-0.0238 [-1.6235] (0.1149)		-0.0175* [-1.9691] (0.0577)	-0.0185*** [-2.8792] (0.0081)	-0.0239** [-2.0899] (0.0447)	-0.0160 [-1.5801] (0.1239)	-0.0130** [-2.1718] (0.0400)	-0.0178 [-0.7645] (0.4510)	-0.0141 [-1.4500] (0.1600)
Adjusted R^2	0.0895		0.0000	0.1105	0.0000	0.1282	0.0030	0.0211	0.0335		0.0267	0.1378	0.0000	0.0000	0.0774	0.0373	0.0428
Non-Crisis	*1*	*2*	*1*	*2*	*1*	*2*	*1*	*2*	*1*	*2*	*1*	*2*	*1*	*1*	*2*	*1*	*2*
PURER-SENT	0.5302* [1.9417] (0.0561)	-0.2188 [-1.5944] (0.1167)	-0.2609 [-1.0847] (0.2880)	0.2669 [1.1345] (0.2617)	-0.0208 [-0.1356] (0.8934)	0.2180 [0.6654] (0.5088)	-0.1612 [-0.4911] (0.6272)	0.7935*** [2.8771] (0.0059)	0.2623 [0.9530] (0.3439)	0.2312 [0.5934] (0.5554)	0.5672*** [3.2137] (0.0033)	0.2868 [1.4121] (0.1638)	0.2775 [1.2309] (0.2206)	0.4902** [2.5118] (0.0181)	0.1615 [0.5338] (0.5958)	0.3706** [2.6428] (0.0126)	0.4138* [1.7039] (0.0945)
PURER-SENT(-1)	-0.6356*** [-2.6573] (0.0097)	-0.0066 [-0.0330] (0.9738)	0.2847 [0.9316] (0.3601)	-0.3396 [-1.3435] (0.1848)	-0.2149 [-1.0849] (0.2902)	-0.3357 [-1.0762] (0.2869)	0.2345 [1.0677] (0.2948)	-0.7473** [-2.5960] (0.0124)	-0.5190* [-1.8990] (0.0617)	-0.1918 [-0.5116] (0.6110)	-0.5134** [-2.3887] (0.0239)	-0.2174 [-1.0604] (0.2938)	-0.3248 [-1.2278] (0.2218)	-0.1568 [-0.8449] (0.4053)	-0.1693 [-0.5565] (0.5803)	-0.3056 [-1.5817] (0.1236)	-0.3664** [-2.4063] (0.0198)
1M RETURN(-1)	0.1915** [2.1356] (0.0362)	-0.0399 [-0.3362] (0.7380)	-0.0227 [-0.1731] (0.8639)	-0.1287 [-1.2771] (0.2071)	-0.4164** [-2.1237] (0.0457)	-0.0465 [-0.2969] (0.7677)	-0.2065 [-1.1073] (0.2776)	0.0808 [0.7092] (0.4815)	-0.1281 [-1.3843] (0.1707)	-0.1316 [-1.1240] (0.2660)	-0.1127 [-0.5156] (0.6102)	-0.1447 [-1.2198] (0.2279)	0.0075 [0.0807] (0.9358)	-0.5234*** [-3.2870] (0.0027)	-0.2694** [-2.5063] (0.0154)	-0.2580 [-1.5810] (0.1237)	-0.1449 [-1.1438] (0.2580)
C	0.0070 [1.3492] (0.1816)	0.0011 [0.1438] (0.8862)	0.0142 [1.1737] (0.2512)	0.0154* [1.9045] (0.0623)	0.0175*** [2.9734] (0.0072)	0.0018 [0.2734] (0.7856)	0.0217 [1.6138] (0.1178)	0.0044 [0.6473] (0.5204)	0.0071 [1.4177] (0.1607)	0.0025 [0.3297] (0.7429)	0.0160 [1.2489] (0.2220)	-0.0014 [-0.1290] (0.8978)	0.0072 [1.4035] (0.1629)	0.0066 [1.2954] (0.2058)	0.0062 [1.3328] (0.1885)	0.0091** [2.4845] (0.0184)	0.0145*** [2.8575] (0.0062)
Adjusted R^2	0.1197	0.0000	0.0000	0.0003	0.1005	0.0184	0.0000	0.2241	0.0602	0.0000	0.0719	0.0000	0.0126	0.2438	0.0181	0.0458	0.0465

The dependent variable is the one month return. The time period looked upon is 2000-2014, but divided in different periods. The countries suffer from a different number of crises, see TABLE 2 for all identified crises. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

5 CONCLUSION

Trying to investigate the relationship between investor sentiment and stock market crises for nine different countries from 2000 to 2014 a logit model and two OLS models have been estimated. Findings show there seem to be a positive statistically significant relationship between investor sentiment, measured by the Consumer Confidence Index, and stock market crises at times.

The logit model regressions show that investor sentiment can help explain the probability of stock market crises occurring at several of the largest stock markets in the world. The statistically significant results of the logit model for Germany, France, the United Kingdom, and the United States indicate that investor sentiment make a difference in explaining the occurrence of stock market crises. That investor sentiment help explain the probability of a stock market crisis occurring indicate that market psychology have an effect in explaining stock market prices. Excessive investor optimism might draw stock market prices to levels that cannot be justified by fundamentals, and thus stock market prices might be overvalued due to investor sentiment. For these four countries, investor sentiment seems to be a good predictor of when stock markets are overvalued. This provide evidence that behavioral finance variables should be remembered to be included when trying to explain stock market returns or stock market crises.

By looking more closely at specific crisis periods the matter of understanding the effect of the investor sentiment can be even more elaborated. The period specific results indicate that investor sentiment matters more when explaining stock market returns during the subprime mortgage crisis than during the dot-com bubble, where the results where more vague and had low explanatory value.

Certainly, there are many areas of this subject that are in need of further research. The investor sentiment can be measured in numerous ways and a study comparing the effects of different measures on stock market crises would be of interest in order to tell which measure that can explain stock market crises most accurate. Further, also the identification of crises can be done in several ways. It would be interesting to incorporate regime switching models in the identification process and then compare these identified crises to investor sentiment. The time sample and relatively few countries examined yield some obvious drawbacks to this thesis. Hence, to include more countries and use longer time periods in a future study would also be of highest relevance to make the academic research in this area progress.

As hypothesized, the behavioral finance aspect and psychological influenced variable, investor sentiment, is found to play a role in explaining stock market crises, at least for some countries and at certain time periods. This study contributes to the understanding of why stock market crises occur. At periods of high optimism in the investor sentiment assets seem to be overvalued since the probability of a stock market crisis to occur seems to be higher. Irrational noise traders thus have an effect on asset prices, while it might be hard for arbitrageurs trading on fundamentals only, to offset these market mispricing.

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APPENDIX A

Appendix A consists of the survey questions of the used Consumer Confidence Indices.

UNIVERSITY OF MICHIGAN RESEARCH CENTER, INDEX OF CONSUMER SENTIMENT.
The index of Consumer Sentiment is derived from the following five questions. The relative scores on each question is calculated by measuring the percent giving favourable replies minus the percent giving unfavourable replies, plus 100. Then the relative replies on each question is summed up and divided by the total value at the base period in 1966, that is 6.7558, and a constant of 2 added.

Q1. “We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago?"
1. Better now
3. Same
5. Worse
8. Don’t Know

Q2. “Now looking ahead--do you think that a year from now you (and your family living there) will be better off financially, or worse off, or just about the same as now?"
1. Will be better off
3. Same
5. Will be worse off
8. Don’t Know

Q3. "Now turning to business conditions in the country as a whole--do you think that during the next twelve months we'll have good times financially, or bad times, or what?"
1. Good times
2. Good with qualifications
3. Pro-con
4. Bad with qualifications
5. Bad times
8. Don’t Know

Q4. "Looking ahead, which would you say is more likely--that in the country as a whole we'll have continuous good times during the next five years or so, or that we will have periods of widespread unemployment or depression, or what?"

IF R ANSWERS IN COMPARATIVE TERMS, I.E., “BETTER,” “WORSE,” OR “SAME,” PROBE: “Would that be good times or bad times?”

Q5. "About the big things people buy for their homes--such as furniture, a refrigerator, stove, television, and things like that. Generally speaking, do you think now is a good or bad time for people to buy major household items?"
1. Good
3. Pro-con
5. Bad
8. Don’t know

EUROPEAN COMMISSION CONSUMER CONFIDENCE INDEX

The Consumer Confidence Indices for European countries are made up from the answers on the following queries. The Consumer Confidence Index is calculated through the average of the four questions, Confidence Indicator (Q2 + Q4 - Q7 + Q11) / 4. The respondents can choose among several alternatives per question.

Q2. How do you expect the financial position of your household to change over the next 12 months? It will…
01. Get a lot better
02. Get a little better
03. Stay the same
04. Get a little worse
05. Get a lot worse
DK. Don't Know

Q4. How do you expect the general economic situation in this country to develop over the next 12 months? It will …
01. Get a lot better
02. Get a little better
03. Stay the same
04. Get a little worse
05. Get a lot worse
DK. Don't Know

Q7. How do you expect the number of people unemployed in this country will change over the next 12 months? The number will …
01. Increase sharply
02. Increase slightly
03. Remain the same
04. Fall slightly
05. Fall sharply
DK. Don't Know

Q11. Over the next 12 months, how likely will you be to save any money?
01. Very likely
02. Fairly likely
03. Not likely
04. Not at all likely
DK. Don't know

APPENDIX B

Appendix B consists of all output tables, numbered from A1-A27, sorted with respect to countries.

TABLE A1: BELGIUM, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-1.4565***	-1.3780***	-1.4561***
	[-7.0955]	[-7.1693]	[-7.0733]
	(0.0000)	(0.0000)	(0.0000)
VSTOXX	0.0826		0.0825
	[0.4335]		[0.4329]
	(0.6647)		(0.6651)
INT	0.0686		0.0706
	[0.3484]		[0.3388]
	(0.7276)		(0.7348)
RET	-0.5189**		-0.5189**
	[-2.2338]		[-2.2347]
	(0.0255)		(0.0254)
PER	-0.1669		-0.1672
	[-0.7196]		[-0.7204]
	(0.4718)		(0.4713)
INF	0.1043		0.1041
	[0.5203]		[0.5190]
	(0.6029)		(0.6038)
PURERSENT		-0.0153	-0.0061
		[-0.0787]	[-0.0293]
		(0.9373)	(0.9767)
McFadden R^2	0.046240	0.0000	0.0462

The dependent variable for all logit models is the binary time series of crisis codes. The time period looked upon is 2000-2014. Belgium suffers from one crisis during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A2: DENMARK, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-0.2457	-0.2117	-0.2277
	[-1.3692]	[-1.2663]	[-1.2534]
	(0.1710)	(0.2054)	(0.2101)
VSTOXX	0.0282		0.0369
	[0.1524]		[0.1988]
	(0.8789)		(0.8424)
INT	0.2604		0.2746
	[1.2482]		[1.3112]
	(0.2120)		(0.1898)
RET	-1.1490***		-1.0675***
	[-4.7508]		[-3.9995]
	(0.0000)		(0.0001)
PER	0.0765		0.0711
	[0.4440]		[0.4144]
	(0.6571)		(0.6786)
INF	0.0600		0.0506
	[0.3321]		[0.2780]
	(0.7398)		(0.7810)
PURERSENT		-0.5831***	-0.1549
		[-3.2960]	[-0.6824]
		(0.0010)	(0.4950)
McFadden R^2	0.1477	0.0557	0.1498

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. Denmark suffers from two crises during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A3: FRANCE, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-0.1616	-0.2471	-0.2886
	[-0.9442]	[-1.3412]	[-1.3468]
	(0.3451)	(0.1799)	(0.1780)
VSTOXX	0.0360		0.0195
	[0.2092]		[0.0902]
	(0.8343)		(0.9281)
INT	0.2951		0.2392
	[1.4693]		[1.0047]
	(0.1418)		(0.3151)
RET	-0.8580***		-1.3332***
	[-3.8331]		[-4.6680]
	(0.0001)		(0.0000)
PER	-0.1714		-0.1761
	[-0.9417]		[-0.8222]
	(0.3464)		(0.4109)
INF	-0.0188		0.1983
	[-0.1127]		[0.9486]
	(0.9103)		(0.3428)
PURERSENT		1.2176***	1.6547***
		[5.1876]	[5.7477]
		(0.0000)	(0.0000)
McFadden R^2	0.0913	0.1800	0.3434

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. France suffers from two crisis during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A4: GERMANY, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-0.3340*	-0.2878*	-0.4702**
	[-1.8419]	[-1.7409]	[-2.3055]
	(0.0655)	(0.0817)	(0.0211)
VSTOXX	0.0612		0.0747
	[0.3412]		[0.4069]
	(0.7330)		(0.6841)
INT	0.2396		0.1353
	[1.1268]		[0.6124]
	(0.2598)		(0.5402)
RET	-1.2007***		-1.4443***
	[-4.7858]		[-5.2993]
	(0.0000)		(0.0000)
PER	-0.1651		-0.2213
	[-0.7706]		[-0.9861]
	(0.4410)		(0.3241)
INF	0.0141		0.0151
	[0.0785]		[0.0824]
	(0.9374)		(0.9343)
PURERSENT		0.0869	0.6927***
		[0.4936]	[2.9151]
		(0.6216)	(0.0036)
McFadden R^2	0.1636	0.0012	0.2121

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. Germany suffers from two crises during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A5: ITALY, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-1.4052***	-1.3651***	-1.4258***
	[-7.0050]	[-7.0545]	[-6.9927]
	(0.0000)	(0.0000)	(0.0000)
VSTOXX	0.0861		0.0806
	[0.4684]		[0.4343]
	(0.6395)		(0.6640)
INT	0.2027		0.1441
	[0.9199]		[0.6468]
	(0.3576)		(0.5178)
RET	-0.5052**		-0.4940**
	[-2.1136]		[-2.0252]
	(0.0346)		(0.0428)
PER	-0.1807		-0.1968
	[-0.9057]		[-0.9697]
	(0.3651)		(0.3322)
INF	0.0072		0.0136
	[0.0379]		[0.0718]
	(0.9698)		(0.9428)
PURERSENT		-0.2613	-0.2498
		[-1.3402]	[-1.2921]
		(0.1802)	(0.1963)
McFadden R^2	0.0372	0.0108	0.0472

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. Italy suffers from one crisis during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A6: SPAIN, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-0.3866**	-0.2954*	-0.3806**
	[-2.1717]	[-1.8246]	[-2.1337]
	(0.0299)	(0.0681)	(0.0329)
VSTOXX	0.0848		0.0802
	[0.4894]		[0.4616]
	(0.6245)		(0.6444)
INT	0.0160		0.0379
	[0.0820]		[0.1882]
	(0.9347)		(0.8507)
RET	-0.7409***		-0.7291***
	[-3.5009]		[-3.4238]
	(0.0005)		(0.0006)
PER	-0.424860**		-0.4325**
	[-2.2197]		[-2.2479]
	(0.0264)		(0.0246)
INF	0.0139		0.0123
	[0.0771]		[0.0679]
	(0.9386)		(0.9458)
PURERSENT		-0.2025	-0.0915
		[-1.2238]	[-0.4948]
		(0.2210)	(0.6207)
McFadden R^2	0.1228	0.0071	0.1240

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. Spain suffers from two crises during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A7: SWEDEN, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-1.3838***	-1.2706***	-1.4200***
	[-6.7804]	[-6.8273]	[-6.7488]
	(0.0000)	(0.0000)	(0.0000)
VSTOXX	0.0452		0.0402
	[0.2428]		[0.2178]
	(0.8081)		(0.8276)
INT	0.3812		0.3370
	[1.4535]		[1.3017]
	(0.1461)		(0.1930)
RET	-0.6189***		-0.8146***
	[-2.8123]		[-2.9680]
	(0.0049)		(0.0030)
PER	-0.0802		-0.0606
	[-0.4168]		[-0.3064]
	(0.6768)		(0.7593)
INF	0.0211		0.0076
	[0.0983]		[0.0354]
	(0.9217)		(0.9718)
PURERSENT		-0.0324	0.3235
		[-0.1749]	[1.3201]
		(0.8612)	(0.1868)
McFadden R^2	0.0636	0.0002	0.0737

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. Sweden suffers from one crisis during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A8: UNITED KINGDOM, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	-0.2275	-0.3147*	0.2327
	[-1.0496]	[-1.9092]	[0.9040]
	(0.2939)	(0.0562)	(0.3660)
VSTOXX	0.0748		0.0875
	[0.3422]		[0.3556]
	(0.7322)		(0.7222)
INT	0.2565		0.4764
	[1.0254]		[1.5801]
	(0.3052)		(0.1141)
RET	-2.4181***		-3.0062***
	[-6.0770]		[-5.8581]
	(0.0000)		(0.0000)
PER	-0.0187		0.2209
	[-0.0838]		[0.8162]
	(0.9333)		(0.4144)
INF	0.0519		0.1232
	[0.2596]		[0.5881]
	(0.7951)		(0.5565)
PURERSENT		0.2984*	0.7271***
		[1.8621]	[3.3091]
		(0.0626)	(0.0009)
McFadden R^2	0.3695	0.0170	0.4462

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. The United Kingdom suffers from two crises during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A9: UNITED STATES, LOGIT MODELS

Independent variables	Logit Model 1	Logit Model 2	Logit Model 3
C	0.1224	-0.5151***	1.7239**
	[0.4180]	[-2.8530]	[2.5582]
	(0.6760)	(0.0043)	(0.0105)
VIX	0.1607		0.4003
	[0.5994]		[0.7753]
	(0.5489)		(0.4382)
INT	-1.3430***		-4.9962***
	[-2.9098]		[-3.6908]
	(0.0036)		(0.0002)
RET	-2.2571***		-6.3157***
	[-4.5620]		[-4.3220]
	(0.0000)		(0.0000)
PER	-0.1931		0.1512
	[-0.6957]		[0.3475]
	(0.4866)		(0.7282)
INF	0.4178		1.3700***
	[1.5008]		[2.8492]
	(0.1334)		(0.0044)
PURERSENT		0.8227***	3.5180***
		[4.1777]	[4.4930]
		(0.0000)	(0.0000)
McFadden R^2	0.4382	0.1023	0.7335

The dependent variable for all logit models is the binary time series of the crisis codes. The time period looked upon is 2000-2014. The United States suffers from two crises during this period. Coefficients are followed by z-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A10: BELGIUM, OLS, 2000-2014

Independent var.												
PURERSENT	-0.0623	-0.0527			0.1914	0.1983	-0.0157	-0.0027			0.1802	0.1965
	[-1.0313]	[-0.8899]			[1.5483]	[1.6271]	[-0.2919]	[-0.0502]			[1.4272]	[1.5987]
	(0.3038)	(0.3748)			(0.1234)	(0.1056)	(0.7708)	(0.9600)			(0.1555)	(0.1119)
PURERSENT(-1)			-0.1128	-0.1164	-0.2763**	-0.2865**			-0.0568	-0.0614	-0.2094	-0.2281*
			[-2.3570]	[-1.6405]	[-2.0176]	[-2.1446]			[-0.9427]	[-0.9952]	[-1.5924]	[-1.7775]
			(0.1140)	(0.1027)	(0.0452)	(0.0334)			(0.3473)	(0.3211)	(0.1133)	(0.0774)
CRISIS CODE							-0.0922*	-0.1129**	-0.1007*	-0.1128**	-0.0995*	-0.1122**
							[-1.8535]	[-2.0713]	[-1.9256]	[-2.0186]	[-1.9238]	[-2.0231]
							(0.0656)	(0.0399)	(0.0559)	(0.0452)	(0.0562)	(0.0447)
1M RET.(-1)		-0.0362		-0.0463		-0.0548		-0.1358*		-0.1390**		-0.1476**
		[-0.5113]		[-0.7061]		[-0.8842]		[-1.9055]		[-2.0309]		[-2.3388]
		(0.6098)		(0.4811)		(0.3778)		(0.0585)		(0.0439)		(0.0206)
C	0.0036	0.0040	0.0039	0.0039	0.0037	0.0036	0.0030	0.0032	0.0037	0.0034	0.0035	0.0031
	[0.9330]	[0.9855]	[0.9985]	[0.9518]	[0.9532]	[0.8983]	[0.7845]	[0.7845]	[0.9779]	[0.8215]	[0.9276]	[0.7595]
	(0.3521)	(0.3258)	(0.3194)	(0.3426)	(0.3418)	(0.3703)	(0.4339)	(0.4339)	(0.3296)	(0.4126)	(0.3550)	(0.4487)
VSTOXX	-0.2938***	-0.3010***	-0.2755***	-0.2966***	-0.2599***	-0.2843***	-0.2752***	-0.3248***	-0.2612***	-0.3234***	-0.2460***	-0.3107***
	[-4.4220]	[-4.2323]	[-4.1342]	[-4.1900]	[-4.0101]	[-4.1103]	[-4.2750]	[-4.2302]	[-3.9785]	[-4.1896]	[-3.8368]	[-4.1206]
	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	0.0001)	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0002)	(0.0001)
INT	0.1069	0.1173	0.1255	0.1305	0.1034	0.1086	0.0777	0.0933	0.0988	0.1091	0.0780	0.0871
	[1.2858]	[1.3994]	[1.4132]	[1.5234]	[1.2193]	[1.3302]	[0.7764]	[0.9613]	[0.9438]	[1.1239]	[0.7714]	[0.9352]
	(0.2002)	(0.1635)	(0.1594)	(0.1295)	(0.2244)	(0.1852)	(0.4386)	(0.3379)	(0.3467)	(0.2628)	(0.4416)	(0.3511)
RET	0.2786***	0.2859**	0.2730**	0.2864**	0.2727**	0.2885**	0.3460***	0.3907***	0.3375***	0.3857***	0.3356***	0.3867***
	[2.6478]	[2.3581]	[2.4548]	[2.3583]	[2.4624]	[2.3850]	[4.2396]	[4.0488]	[3.8403]	[3.8869]	[3.8291]	[3.9358]
	(0.0088)	(0.0195)	(0.0151)	(0.0195)	(0.0148)	(0.0182)	(0.0000)	(0.0001)	(0.0002)	(0.0001)	(0.0002)	(0.0001)
PER	0.3274***	0.3234***	0.3172***	0.3191***	0.3222***	0.3248***	0.3187***	0.3098***	0.3087***	0.3076***	0.3145***	0.3139***
	[3.0680]	[2.9697]	[2.9460]	[2.9560]	[3.0200]	[3.0440]	[2.8927]	[2.8499]	[2.7845]	[2.8465]	[2.8731]	[2.9551]
	(0.0025)	(0.0034)	(0.0037)	(0.0036)	(0.0029)	(0.0027)	(0.0043)	(0.0050)	(0.0060)	(0.0050)	(0.0046)	(0.0036)
INF	-0.1415**	-0.1455**	-0.1371**	-0.1358**	-0.1275**	-0.1255**	-0.1281**	-0.1249**	-0.1285**	-0.1204**	-0.1186**	-0.1091*
	[-2.4956]	[-2.5067]	[-2.3570]	[-2.3277]	[-2.3016]	[-2.2702]	[-2.3219]	[-2.1853]	[-2.2617]	[-2.0735]	[-2.1516]	[-1.9502]
	(0.0135)	(0.0131)	(0.0195)	(0.0211)	(0.0226)	(0.0244)	(0.0215)	(0.0303)	(0.0251)	(0.0397)	(0.0329)	(0.0529)
Adjusted R^2	0.3414	0.3197	0.3322	0.3297	0.3366	0.3347	0.4089	0.4012	0.3966	0.4048	0.4008	0.4105

The dependent variable is the one month return. The time period looked upon is 2000-2014. Belgium suffers from one crisis during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A11: DENMARK, OLS, 2000-2014

Independent var.												
PURERSENT	-0.0352	-0.0160			0.0197	0.0751	-0.0284	-0.0036			-0.036176	0.0314
	[-0.5315]	[-0.2192]			[0.1816]	[0.7322]	[-0.4373]	[-0.0485]			[-0.3572]	[0.3451]
	(0.5957)	(0.8268)			(0.8561)	(0.4650)	(0.6625)	(0.9614)			(0.7215)	(0.7305)
PURERSENT(-1)			-0.0598	-0.0675	-0.0741	-0.1225			-0.0139	-0.0241	0.011571	-0.0463
			[-0.7365]	[-0.7747]	[-0.5818]	[-1.0150]			[-0.1618]	[-0.2548]	[0.0882]	[-0.3717]
			(0.4624)	(0.4396)	(0.5615)	(0.3116)			(0.8717)	(0.7993)	(0.9299)	(0.7106)
CRISIS CODE							-0.0547	-0.0660	-0.0591	-0.0667	-0.060077	-0.0660
							[-0.8002]	[-0.8493]	[-0.8763]	[-0.8570]	[-0.8872]	[-0.8468]
							(0.4248)	(0.3971)	(0.3823)	(0.3928)	0.3764)	(0.3985)
1M RET.(-1)		-0.1748***		-0.1789***		-0.1879***		-0.2615***		-0.2627***		-0.2662***
		[-2.6708]		[-2.6240]		[-2.9018]		[-4.2273]		[-4.2430]		[-4.4507]
		(0.0083)		(0.0095)		(0.0042)		(0.0000)		(0.0000)		(0.0000)
C	0.0002	0.0002	-0.0001	-0.0003	-1.77E-05	8.04E-05	-0.0027	-0.0036	-0.002288	-0.003673	-0.0024	-0.0036
	[0.0316]	[0.0333]	[-0.0261]	[-0.0581]	[-0.0036]	[0.0145]	[-0.4333]	[-0.4840]	[-0.3779]	[-0.5029]	[-0.3973]	[-0.4818]
	(0.9748)	(0.9735)	(0.9792)	(0.9538)	(0.9971)	(0.9885)	(0.6654)	(0.6291)	(0.7060)	(0.6158)	(0.6917)	(0.6307)
VSTOXX	-0.2235***	-0.2824***	-0.2240***	-0.2791***	-0.2239***	-0.2815***	-0.2098***	-0.2879***	-0.2160***	-0.2867***	-0.2161***	-0.2875***
	[-3.5182]	[-4.4809]	[-3.4506]	[-4.4010]	[-3.4556]	[-4.4372]	[-3.2652]	[-4.4070]	[-3.3446]	[-4.3722]	[-3.3118]	[-4.3871]
	(0.0006)	(0.0000)	(0.0007)	(0.0000)	(0.0007)	(0.0000)	(0.0014)	(0.0000)	(0.0010)	(0.0000)	(0.0012)	(0.0000)
INT	-0.1078	-0.1147	-0.0976	-0.1026	-0.0963	-0.0980	-0.0864	-0.0914	-0.0844	-0.0874	-0.0860	-0.0861
	[-1.5026]	[-1.5373]	[-1.2569]	[-1.2503]	[-1.2352]	[-1.1921]	[-1.2699]	[-1.2932]	[-1.1827]	[-1.1413]	[-1.1823]	[-1.1181]
	(0.1348)	(0.1261)	(0.2105)	(0.2129)	(0.2184)	(0.2349)	(0.2061)	(0.1979)	(0.2388)	(0.2556)	(0.2390)	(0.2653)
RET	0.2734***	0.3145***	0.2798***	0.3368***	0.2759***	0.3249***	0.3519***	0.4342***	0.3383***	0.4435***	0.3457***	0.4384***
	[3.4327]	[3.2325]	[3.8853]	[3.6829]	[3.6004]	[3.4170]	[4.7225]	[5.1580]	[4.9364]	[5.5039]	[4.8988]	[5.3831]
	(0.0007)	(0.0015)	(0.0001)	(0.0003)	(0.0004)	(0.0008)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
PER	0.4328***	0.4276***	0.4263***	0.4217***	0.4257***	0.4194***	0.3901***	0.3768***	0.3873***	0.3751***	0.3880***	0.3744***
	[3.7536]	[3.9786]	[3.7219]	[3.9265]	[3.7334]	[3.9575]	[3.7375]	[4.1482]	[3.7295]	[4.1081]	[3.7185]	[4.1229]
	(0.0002)	(0.0001)	(0.0003)	(0.0001)	(0.0003)	(0.0001)	(0.0003)	(0.0001)	(0.0003)	(0.0001)	(0.0003)	(0.0001)
INF	0.0690	0.0851	0.0728	0.0873	0.0744	0.0940	0.1098*	0.1288**	0.1130*	0.1291**	0.1101	0.1318**
	[1.0540]	[1.3654]	[1.1314]	[1.4540]	[1.1582]	[1.5865]	[1.6651]	[2.1627]	[1.7183]	[2.2072]	[1.6349]	[2.2441]
	(0.2933)	(0.1739)	(0.2595)	(0.1478)	(0.2484)	(0.1145)	(0.0980)	(0.0322)	(0.0878)	(0.0288)	(0.1042)	(0.0263)
Adjusted R^2	0.3472	0.3695	0.3501	0.3726	0.3464	0.3708	0.3966	0.4472	0.3982	0.4476	0.3945	0.4442

The dependent variable is the one month return. The time period looked upon is 2000-2014. Denmark suffers from two crises during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A12: FRANCE, OLS, 2000-2014

Independent var.												
PURERSENT	-0.0149	-0.0264			0.1755**	0.1611*	0.0504	0.0442			0.1890*	0.1751*
	[-0.3559]	[-0.5898]			[1.9857]	[1.7722]	[0.9097]	[0.7564]			[1.9234]	[1.7328]
	(0.7224)	(0.5561)			(0.0487)	(0.0782)	(0.3645)	(0.4506)			(0.0564)	(0.0853)
PURERSENT(-1)			-0.1133**	-0.1240***	-0.2469***	-0.2460***			-0.0942	-0.0894	-0.2138*	-0.2004*
			[-2.5293]	[-2.7876]	[-2.6319]	[-2.6284]			[-1.2743]	[-1.1875]	[-1.8742]	[-1.7100]
			(0.0123)	(0.0059)	(0.0093)	(0.0094)			(0.2046)	(0.2370)	(0.0629)	(0.0894)
CRISIS CODE							-0.1161**	-0.1295**	-0.0243	-0.0485	-0.0681	-0.0881
							[-2.1998]	[-2.2855]	[-0.3819]	[-0.6867]	[-1.2004]	[-1.4264]
							(0.0294)	(0.0237)	(0.7031)	(0.4934)	(0.2319)	(0.1559)
1M RET.(-1)		-0.1517**		-0.1609***		-0.1508***		-0.2053***		-0.2041***		-0.1960***
		[-2.6071]		[-2.9925]		[-2.7691]		[-3.5250]		[-3.5672]		[-3.3857]
		0.0100)		(0.0032)		(0.0063)		(0.0006)		(0.0005)		(0.0009)
C	0.0006	0.0003	0.0006	0.0002	0.0008	0.0004	0.0043	0.0037	0.0003	8.98E-05	0.0024	0.0021
	[0.2842]	[0.1337]	[0.2917]	[0.0935]	[0.3939]	[0.1907]	[1.1751]	[0.9712]	[0.0722]	[0.0209]	[0.6519]	[0.5366]
	(0.7766)	(0.8938)	(0.7708)	(0.9256)	(0.6941)	(0.8490)	(0.2418)	(0.3331)	(0.9426)	(0.9833)	(0.5155)	(0.5924)
VSTOXX	-0.1100*	-0.1829***	-0.1048*	-0.1920***	-0.1111**	-0.1922***	-0.1197*	-0.2184***	-0.1151*	-0.2209***	-0.1226**	-0.2234***
	[-1.8932]	[-2.7186]	[-1.8500]	[-2.9721]	[-2.0505]	[-3.0930]	[-1.9327]	[-2.9086]	[-1.8593]	[-3.0112]	[-2.0737]	[-3.1635]
	(0.0600)	(0.0072)	(0.0660)	(0.0034)	(0.0419)	(0.0023)	(0.0552)	(0.0042)	(0.0650)	(0.0031)	(0.0399)	(0.0019)
INT	0.1258**	0.1197**	0.1349**	0.1310**	0.1303**	0.1271**	0.1613***	0.1516***	0.1605**	0.1536***	0.1568**	0.1505***
	[2.2011]	[2.2116]	[2.3709]	[2.4621]	[2.2422]	[2.3181]	[2.6556]	[2.9242]	[2.6088]	[2.8737]	[2.4814]	[2.7205]
	(0.0291)	(0.0283)	(0.0189)	(0.0148)	(0.0263)	(0.0217)	(0.0088)	(0.0040)	(0.0100)	(0.0047)	(0.0142)	(0.0073)
RET	0.1952***	0.2429***	0.2023***	0.2470***	0.1914***	0.2342***	0.1836***	0.2532***	0.2334***	0.2938***	0.2029***	0.2631***
	[3.6804]	[4.0736]	[3.6611]	[4.0659]	[3.5239]	[3.8832]	[2.6474]	[3.5756]	[3.1905]	[3.9566]	[2.8337]	[3.6238]
	(0.0003)	(0.0001)	(0.0003)	(0.0001)	(0.0005)	(0.0001)	(0.0090)	(0.0005)	(0.0017)	(0.0001)	(0.0053)	(0.0004)
PER	0.6889***	0.6798***	0.6750***	0.6623***	0.6705***	0.6591***	0.6267***	0.6016***	0.6200***	0.5938***	0.6121***	0.5876***
	[5.9295]	[5.7792]	[6.0002]	[5.7774]	[6.1669]	[5.9267]	[5.0315]	[4.8754]	[5.1036]	[4.8865]	[5.2517]	[5.0239]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
INF	-0.0227	-0.0132	-0.0214	-0.0055	0.0054	0.0180	0.0053	0.0241	-0.0046	0.0179	0.0188	0.0386
	[-0.4691]	[-0.2662]	[-0.4557]	[-0.1174]	[0.1127]	[0.3834]	[0.1045]	[0.4713]	[-0.0935]	[0.3698]	[0.3783]	[0.7939]
	(0.6396)	(0.7904)	(0.6492)	(0.9067)	(0.9104)	(0.7019)	(0.9169)	(0.6381)	(0.9256)	(0.7120)	(0.7058)	(0.4286)
Adjusted R^2	0.6021	0.6155	0.6176	0.6320	0.6264	0.6389	0.6069	0.6308	0.6132	0.6364	0.6238	0.6451

The dependent variable is the one month return. The time period looked upon is 2000-2014. France suffers from two crises during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A13: GERMANY, OLS, 2000-2014

Independent var.												
PURERSENT	-0.0228	-0.0369			0.4032***	0.3756**	-0.0011	0.0011			0.2645**	0.2221
	[-0.4232]	[-0.6214]			[3.0626]	[2.5625]	[-0.0208]	[0.0204]			[2.1445]	[1.6327]
	(0.6727)	(0.5352)			(0.0026)	(0.0113)	(0.9834)	(0.9837)			(0.0337)	(0.1047)
PURERSENT(-1)			-0.1287**	-0.1288**	-0.4736***	-0.4501***			-0.0788	-0.0607	-0.2966**	-0.2477*
			[-2.0119]	[-2.0033]	[-3.3320]	[-2.9998]			[-1.3292]	[-1.0396]	[-2.2685]	[-1.7883]
			(0.0458)	(0.0467)	(0.0011)	(0.0031)			(0.1858)	(0.3002)	(0.0248)	(0.0758)
CRISIS CODE							-0.0634	-0.0802	-0.0422	-0.0606	-0.0530	-0.0656
							[-0.9589]	[-1.1312]	[-0.6364]	[-0.8435]	[-0.8526]	[-0.9770]
							(0.3392)	(0.2598)	(0.5255)	(0.4003)	(0.3953)	(0.3302)
1M RET.(-1)		-0.1155		-0.1104		-0.0528		-0.1461		-0.1352		-0.1038
		[-1.4577]		[-1.4973]		[-0.6340]		[-1.6361]		[-1.5523]		[-1.0859]
		(0.1468)		(0.1362)		(0.5269)		(0.1040)		(0.1228)		(0.2793)
C	0.0007	0.0005	0.0003	0.0002	0.0006	0.0005	0.0017	0.0013	0.0009	0.0006	0.0016	0.0013
	[0.1875]	[0.1208]	[0.0832]	[0.0394]	[0.1787]	[0.1440]	[0.4123]	[0.2985]	[0.2268]	[0.1447]	[0.4146]	[0.3089]
	(0.8515)	(0.9040)	(0.9338)	(0.9686)	(0.8584)	(0.8857)	(0.6807)	(0.7658)	(0.8209)	(0.8851)	(0.6791)	(0.7578)
VSTOXX	-0.1796***	-0.2352***	-0.1785***	-0.2341***	-0.1977***	-0.2229***	-0.1901***	-0.2540***	-0.1931***	-0.2520***	-0.2021***	-0.2457***
	[-3.3098]	[-2.9526]	[-3.2994]	[-3.0543]	[-3.4196]	[-2.7707]	[-3.2296]	[-2.9188]	[-3.2597]	[-2.9682]	[-3.2654]	[-2.7998]
	(0.0011)	(0.0036)	(0.0012)	(0.0026)	(0.0008)	(0.0062)	(0.0015)	(0.0041)	(0.0014)	(0.0035)	(0.0014)	(0.0058)
INT	0.0606	0.0616	0.0754	0.0734	0.0450	0.0461	0.1096	0.1023	0.1175	0.1082	0.0915	0.0886
	[0.8804]	[0.8754]	[1.1291]	[1.0665]	[0.7043]	[0.7117]	[1.7152]	[1.5596]	[1.8400]	[1.6321]	[1.4528]	[1.3788]
	(0.3799)	(0.3826)	(0.2605)	(0.2877)	(0.4822)	(0.4776)	(0.0884)	(0.1210)	(0.0678)	(0.1048)	(0.1484)	(0.1701)
RET	0.2888***	0.3202***	0.3090***	0.3372***	0.2842***	0.2993***	0.2802***	0.3242***	0.3067***	0.3450***	0.2818***	0.3150***
	[3.4867]	[3.1500]	[3.8230]	[3.5048]	[3.7581]	[3.1784]	[3.2363]	[2.9470]	[3.5412]	[3.2384]	[3.3603]	[2.9190]
	(0.0006)	(0.0019)	(0.0002)	(0.0006)	(0.0002)	(0.0018)	(0.0015)	(0.0037)	(0.0005)	(0.0015)	(0.0010)	(0.0041)
PER	0.5596***	0.5552***	0.5494***	0.5461***	0.5207***	0.5211***	0.5361***	0.5100***	0.5355***	0.5135***	0.5107***	0.4978***
	[4.4005]	[4.4886]	[4.4135]	[4.5233]	[4.1812]	[4.2544]	[3.9806]	[3.7228]	[3.9762]	[3.7566]	[3.7410]	[3.6098]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0003)	(0.0001)	(0.0002)	(0.0003)	(0.0004)
INF	-0.0151	-0.0144	-0.0135	-0.0126	-0.0059	-0.0060	-0.0426	-0.0355	-0.0392	-0.0331	-0.0273	-0.0247
	[-0.2759]	[-0.2826]	[-0.2520]	[-0.2537]	[-0.1215]	[-0.1272]	[-0.8279]	[-0.7413]	[-0.7594]	[-0.6898]	[-0.5335]	[-0.5087]
	(0.7830)	(0.7778)	(0.8014)	(0.8000)	(0.9035)	(0.8989)	(0.4091)	(0.4597)	(0.4488)	(0.4914)	(0.5945)	(0.6117)
Adjusted R^2	0.4167	0.4215	0.4318	0.4369	0.4603	0.4589	0.4768	0.4859	0.4821	0.4899	0.4927	0.4955

The dependent variable is the one month return. The time period looked upon is 2000-2014. Germany suffers from two crises during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A14: ITALY, OLS, 2000-2014

Independent var.												
PURERSENT	-0.0253 [-0.5620] (0.5749)	-0.0335 [-0.7232] (0.4706)			0.1092 [0.8532] (0.3947)	0.0674 [0.5516] (0.5819)	-0.0487 [-0.9766] (0.3302)	-0.060662 [-1.1743] (0.2420)			0.1261 [0.8600] (0.3911)	0.0818 [0.6058] (0.5455)
PURERSENT(-1)			-0.0523 [-1.1023] (0.2719)	-0.0498 [-1.0169] (0.3106)	-0.1503 [-1.1191] (0.2647)	-0.1104 [-0.8564] (0.3930)			-0.0777 [-1.3355] (0.1836)	-0.0804 [-1.3435] (0.1810)	-0.1923 [-1.1832] (0.2385)	-0.1547 [-1.0118] (0.3132)
CRISIS CODE							-0.0555 [-1.3036] (0.1942)	-0.0718 [-1.5354] (0.1267)	-0.0593 [-1.3365] (0.1833)	-0.0754 [-1.5619] (0.1203)	-0.0608 [-1.3445] (0.1807)	-0.0761 [-1.5619] (0.1203)
1M RET.(-1)		-0.1539** [-2.3280] (0.0211)		-0.1511** [-2.2796] (0.0239)		-0.1463** [-2.2083] (0.0286)		-0.2211*** [-3.9014] (0.0001)		-0.2187*** [-3.9039] (0.0001)		-0.2147*** [-3.9411] (0.0001)
C	-0.0010 [-0.3478] (0.7284)	-0.0014 [-0.4726] (0.6371)	-0.0011 [-0.3949] (0.6934)	-0.0014 [-0.4692] (0.6395)	-0.0010 [-0.3620] (0.7178)	-0.0014 [-0.4467] (0.6557)	-0.0005 [-0.1532] (0.8784)	-0.0011 [-0.3241] (0.7463)	-0.0005 [-0.1561] (0.8762)	-0.0010 [-0.2942] (0.7690)	-0.0004 [-0.1289] (0.8976)	-0.0010 [-0.2739] (0.7845)
VSTOXX	-0.2268*** [-3.4559] (0.0007)	-0.3016*** [-3.9119] (0.0001)	-0.2265*** [-3.4034] (0.0008)	-0.2970*** [-3.8257] (0.0002)	-0.2191*** [-3.3635] (0.0009)	-0.2902*** [-3.8484] (0.0002)	-0.2169*** [-3.2708] (0.0013)	-0.3192*** [-4.0790] (0.0001)	-0.2142*** [-3.1645] (0.0019)	-0.3127*** [-3.9802] (0.0001)	-0.2059*** [-3.0784] (0.0025)	-0.3055*** [-3.9907] (0.0001)
INT	-0.0310 [-0.5535] (0.5807)	-0.0163 [-0.2959] (0.7677)	-0.0287 [-0.5138] (0.6081)	-0.0172 [-0.3108] (0.7563)	-0.0200 [-0.3557] (0.7225)	-0.0121 [-0.2185] (0.8273)	-0.0189 [-0.2939] (0.7692)	-0.0030 [-0.0508] (0.9596)	-0.0155 [-0.2426] (0.8086)	-0.0020 [-0.0343] (0.9727)	-0.0055 [-0.0863] (0.9313)	0.0042 [0.0725] (0.9423)
RET	0.2712*** [3.7935] (0.0002)	0.2923*** [3.5772] (0.0005)	0.2640*** [3.6865] (0.0003)	0.2909*** [3.5749] (0.0005)	0.2589*** [3.5814] (0.0004)	0.2869*** [3.5013] (0.0006)	0.3278*** [4.9276] (0.0000)	0.3712*** [5.2379] (0.0000)	0.320075*** [4.7944] (0.0000)	0.3684*** [5.2407] (0.0000)	0.3147*** [4.6978] (0.0000)	0.3641*** [5.1683] (0.0000)
PER	0.5398*** [4.9091] (0.0000)	0.5181*** [4.8597] (0.0000)	0.5403*** [4.9458] (0.0000)	0.5185*** [4.8827] (0.0000)	0.5407*** [4.9554] (0.0000)	0.5195*** [4.8829] (0.0000)	0.5204*** [4.8658] (0.0000)	0.4805*** [5.0747] (0.0000)	0.5201*** [4.9143] (0.0000)	0.4802*** [5.1186] (0.0000)	0.5200*** [4.9390] (0.0000)	0.4808*** [5.1305] (0.0000)
INF	0.0608 [0.7677] (0.4437)	0.0563 [0.7300] (0.4664)	0.0616 [0.7725] (0.4409)	0.0569 [0.7323] (0.4650)	0.0623 [0.7682] (0.4434)	0.0575 [0.7306] (0.4660)	0.0636 [0.7682] (0.4435)	0.059414 [0.749611] (0.4546)	0.0652 [0.7802] (0.4364)	0.0608 [0.7593] (0.4488)	0.0668 [0.7860] (0.4330)	0.0619 [0.7615] (0.4475)
Adjusted R^2	0.4340	0.4489	0.4370	0.4503	0.4358	0.4479	0.4717	0.5032	0.4759	0.5061	0.4752	0.5040

The dependent variable is the one month return. The time period looked upon is 2000-2014. Italy suffers from one crisis during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A15: SPAIN, OLS, 2000-2014

Independent var.												
PURERSENT	-0.0598	-0.0593			0.0053	0.0061	-0.0038	-0.0014			0.0581	0.0491
	[-0.9668]	[-0.9633]			[0.0363]	[0.0417]	[-0.0619]	[-0.0214]			[0.3669]	[0.3141]
	(0.3350)	(0.3367)			(0.9711)	(0.9668)	(0.9507)	(0.9830)			(0.7142)	(0.7539)
PURERSENT(-1)			-0.0663	-0.0712	-0.0710	-0.0765			-0.0126	-0.0157	-0.0637	-0.0588
			[-1.1945]	[-1.2883]	[-0.5235]	[-0.5672]			[-0.2264]	[-0.2681]	[-0.4254]	[-0.4019]
			(0.2339)	(0.1994)	(0.6013)	(0.5713)			(0.8212)	(0.7890)	(0.6712)	(0.6883)
CRISIS CODE							0.0512	0.0462	0.0580	0.0458	0.0598	0.0474
							[0.9261]	[0.8353]	[1.0807]	[0.8240]	[1.1192]	[0.8580]
							(0.3559)	(0.4049)	(0.2816)	(0.4113)	(0.2649)	(0.3923)
1M RET.(-1)		-0.0531		-0.0556		-0.0556		-0.1358*		-0.1362*		-0.1350*
		[-0.6494]		[-0.6922]		[-0.6904]		[-1.8799]		[-1.8812]		[-1.8564]
		(0.5170)		(0.4897)		(0.4909)		(0.0621)		(0.0619)		(0.0654)
C	0.0014	0.0015	0.0017	0.0016	0.0017	0.0016	-0.0036	-0.0038	-0.0037	-0.0037	-0.0036	-0.0036
	[0.4379]	[0.4366]	[0.5232]	[0.4729]	[0.5210]	[0.4711]	[-0.7948]	[-0.7763]	[-0.8069]	[-0.7476]	[-0.7987]	[-0.7414]
	(0.6620)	(0.6630)	(0.6015)	(0.6369)	(0.6031)	(0.6382)	(0.4280)	(0.4388)	(0.4210)	(0.4559)	(0.4258)	(0.4596)
VSTOXX	-0.1264**	-0.1439*	-0.1138*	-0.1412*	-0.1136*	-0.1409*	-0.1054	-0.1530*	-0.0931	-0.1533*	-0.0896	-0.1498*
	[-2.0773]	[-1.9340]	[-1.8638]	[-1.9009]	[-1.7990]	[-1.8655]	[-1.6147]	[-1.8907]	[-1.4276]	[-1.9140]	[-1.3089]	[-1.8043]
	(0.0393)	(0.0548)	(0.0641)	(0.0590)	(0.0738)	(0.0638)	(0.1085)	(0.0606)	(0.1555)	(0.0576)	(0.1926)	(0.0732)
INT	0.0609	0.0559	0.0676	0.0652	0.0679	0.0655	0.0593	0.0436	0.0606	0.0488	0.0640	0.0517
	[1.0671]	[0.9772]	[1.1458]	[1.1048]	[1.1333]	[1.0931]	[0.9276]	[0.6945]	[0.8968]	[0.7380]	[0.9155]	[0.7519]
	(0.2874)	(0.3299)	(0.2535)	(0.2708)	(0.2587)	(0.2759)	(0.3551)	(0.4885)	(0.3713)	(0.4617)	(0.3614)	(0.4533)
RET	0.1562**	0.1730**	0.1534**	0.1687**	0.1529**	0.1681**	0.2375***	0.2888***	0.2445***	0.2888***	0.2388***	0.2836***
	[2.2108]	[2.2233]	[2.1304]	[2.1489]	[2.0705]	[2.1008]	[3.3685]	[3.7717]	[3.4151]	[3.7461]	[3.1793]	[3.5123]
	(0.0284)	(0.0275)	(0.0346)	(0.0331)	(0.0399)	(0.0371)	(0.0010)	(0.0002)	(0.0008)	(0.0003)	(0.0018)	(0.0006)
PER	0.6178***	0.6107***	0.6246***	0.6155***	0.6251***	0.6161***	0.6046***	0.5779***	0.6075***	0.5781***	0.6131***	0.5831***
	[4.5263]	[4.5522]	[4.6271]	[4.6289]	[4.6749]	[4.6758]	[4.4257]	[4.3498]	[4.4937]	[4.3836]	[4.6036]	[4.4861]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
INF	-0.0107	-0.0071	-0.0062	-0.0010	-0.0058	-0.0005	-0.0214	-0.0061	-0.0220	-0.0050	-0.0177	-0.0014
	[-0.2112]	[-0.1454]	[-0.1218]	[-0.0199]	[-0.1091]	[-0.0092]	[-0.3897]	[-0.1180]	[-0.3930]	-0.0950]	[-0.3050]	[-0.0265]
	(0.8330)	(0.8846)	(0.9032)	(0.9842)	(0.9133)	(0.9927)	(0.6973)	(0.9063)	(0.6949)	(0.9244)	(0.7608)	(0.9789)
Adjusted R^2	0.4568	0.4550	0.4573	0.4563	0.4542	0.4531	0.4639	0.4739	0.4654	0.4741	0.4626	0.4711

The dependent variable is the one month return. The time period looked upon is 2000-2014. Spain suffers from two crises during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A16: SWEDEN, OLS, 2000-2014

Independent var.												
PURERSENT	-0.1434** [-2.2054] (0.0287)	-0.1518** [-2.2528] (0.0255)			-0.0666 [-0.4820] (0.6304)	-0.0448 [-0.3367] (0.7366)	-0.1326** [-1.9794] (0.0495)	-0.1414** [-1.9982] (0.0474)			-0.0597 [-0.4044] (0.6865)	-0.0320 [-0.2230] (0.8239)
PURERSENT(-1)			-0.1541** [-2.04851] (0.0420)	-0.1785** [-2.3081] (0.0222)	-0.1031 [-0.6889] (0.4918)	-0.1438 [-0.9972] (0.3201)			-0.1433* [-1.9384] (0.0543)	-0.1699** [-2.2313] (0.0271)	-0.0983 [-0.6379] (0.5244)	-0.1456 [-0.9860] (0.3256)
CRISIS CODE							-0.1000 [-1.3710] (0.1723)	-0.1335* [-1.7573] (0.0808)	-0.1058 [-1.4080] (0.1611)	-0.1315* [-1.6960] (0.0918)	-0.1054 [-1.4012] (0.1631)	-0.1310* [-1.6833] (0.0943)
1M RET.(-1)		-0.1573** [-2.1801] (0.0306)		-0.1750** [-2.4769] (0.0142)		-0.1723** [-2.3751] (0.0187)		-0.1891*** [-2.9275] (0.0039)		-0.2065*** [-3.3260] (0.0011)		-0.2045*** [-3.1334] (0.0021)
C	-0.0013 [-0.3104] (0.7567)	-0.0019 [-0.4380] (0.6620)	-0.0007 [-0.1823] (0.8556)	-0.0013 [-0.3018] (0.7632)	-0.0011 [-0.2575] (0.7971)	-0.0015 [-0.3441] (0.7312)	0.0014 [0.3225] (0.7475)	0.0016 [0.3227] (0.7474)	0.0020 [0.4647] (0.6428)	0.0020 [0.4134] (0.6794)	0.0017 [0.3810] (0.7037)	0.0019 [0.3723] (0.7102)
VSTOXX	-0.1520** [-2.3751] (0.0186)	-0.2301*** [-2.7579] (0.0065)	-0.1501** [-2.2435] (0.0261)	-0.2329*** [-2.7717] (0.0062)	-0.1508** [-2.2235] (0.0275)	-0.2321*** [-2.7773] (0.0061)	-0.1545** [-2.1875] (0.0302)	-0.2491*** [-2.9058] (0.0042)	-0.1584** [-2.1796] (0.0307)	-0.2521*** [-2.9456] (0.0037)	-0.1590** [-2.1589] (0.0324)	-0.2515*** [-2.9502] (0.0037)
INT	-0.1424** [-2.5417] (0.0119)	-0.1593*** [-2.7835] (0.0060)	-0.1136* [-1.7490] (0.0821)	-0.1249* [-1.9374] (0.0543)	-0.1212* [-1.6603] (0.0987)	-0.1299* [-1.8262] (0.0696)	-0.1287** [-2.3627] (0.0193)	-0.1470*** [-2.6367] (0.0092)	-0.1037 [-1.6202] (0.1072)	-0.1162* [-1.8361] (0.0682)	-0.1098 [-1.5247] (0.1293)	-0.1193* [-1.7199] (0.0874)
RET	0.3565*** [4.5861] (0.0000)	0.3951*** [4.7031] (0.0000)	0.3397*** [4.5314] (0.0000)	0.3964*** [4.6237] (0.0000)	0.3519*** [4.5547] (0.0000)	0.4038*** [4.7399] (0.0000)	0.3319*** [4.1981] (0.0000)	0.3672*** [4.3970] (0.0000)	0.3089*** [4.3303] (0.0000)	0.3695*** [4.5138] (0.0000)	0.3206*** [4.1516] (0.0001)	0.3752*** [4.4322] (0.0000)
PER	0.4820*** [3.3876] (0.0009)	0.4736*** [3.2851] (0.0012)	0.4741*** [3.3145] (0.0011)	0.4652*** [3.2240] (0.0015)	0.4752*** [3.3126] (0.0011)	0.4661*** [3.2208] (0.0015)	0.4545*** [3.2197] (0.0016)	0.4426*** [3.1455] (0.0020)	0.4448*** [3.1277] (0.0021)	0.4352*** [3.0760] (0.0025)	0.4458*** [3.1243] (0.0021)	0.4358*** [3.0674] [0.0025]
INF	-0.0050 [-0.0804] (0.9360)	0.0056 [0.0914] (0.9273)	-0.0202 [-0.3216] (0.7482)	-0.0152 [-0.2495] (0.8033)	-0.0136 [-0.2108] (0.8333)	-0.0108 [-0.1716] (0.8640)	0.0035 [0.0536] (0.9573)	0.0233 [0.3697] (0.7121)	-0.0056 [-0.0846] (0.9327)	0.0047 [0.0749] (0.9404)	2.54E-05 [0.0004] (0.9997)	0.0076 [0.1182] (0.9061)
Adjusted R^2	0.3813	0.3928	0.3808	0.3984	0.3786	0.3955	0.3716	0.3918	0.3723	0.3981	0.3696	0.3946

The dependent variable is the one month return. The time period looked upon is 2000-2014. Sweden suffers from one crisis during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A17: UNITED KINGDOM, OLS, 2000-2014

Independent var.												
PURERSENT	0.0474	0.0519			0.1085	0.1430*	0.0387	0.0529			0.1084	0.1593*
	[1.1141]	[1.1421]			[1.3439]	[1.7375]	[0.8768]	[1.0740]			[1.2519]	[1.7650]
	(0.2668)	(0.2550)			(0.1808)	(0.0841)	(0.3820)	(0.2846)			(0.2126)	(0.0797)
PURERSENT(-1)			0.0242	0.0179	-0.0666	-0.1033			0.0135	0.0104	-0.0752	-0.1222
			[0.5785]	[0.4043]	[-0.8251]	[-1.2259]			[0.3220]	[0.2289]	[-0.9212]	[-1.4079]
			(0.5637)	(0.6865)	(0.4105)	(0.2220)			(0.7479)	(0.8193)	(0.3585)	(0.1613)
CRISIS CODE							0.0117	-0.0146	0.0197	0.0088	0.0059	-0.0083
							[0.2389]	[-0.2733]	[0.3801]	[0.1671]	[0.1123]	[-0.1544]
							(0.8116)	(0.7850)	(0.7044)	(0.8675)	(0.9107)	(0.8775)
1M RET.(-1)		-0.1902***		-0.1862***		-0.1968***		-0.2491***		-0.2450***		-0.2570***
		[-3.0161]		[-2.9444]		[-3.0513]		[-3.8707]		[-3.7772]		[-3.8708]
		(0.0030)		(0.0037)		(0.0027)		(0.0002)		(0.0002)		(0.0002)
C	0.0019	0.0016	0.0015	0.0014	0.0016	0.0016	-0.0014	-0.0014	-0.0021	-0.0026	-0.0014	-0.0017
	[0.9668]	[0.7468]	[0.7244	[0.6504]	[0.8125]	[0.7296]	[-0.4597]	[-0.4410]	[-0.7148]	[-0.8504]	[-0.4429]	[-0.5383]
	(0.3350)	(0.4562)	(0.4698)	(0.5163)	(0.4177)	(0.4666)	(0.6464)	(0.6599)	(0.4759)	(0.3965)	(0.6585)	(0.5912)
VSTOXX	-0.1556**	-0.2558***	-0.1729***	-0.0023***	-0.1705***	-0.2604***	-0.1342**	-0.2548***	-0.1505**	-0.2561***	-0.1490**	-0.2601***
	[-2.5732]	[-3.5606]	[-2.7226]	[-3.6108]	[-2.6939]	[-3.6092]	[-2.1567]	[-3.4937]	[-2.3021]	[-3.5354]	[-2.2882]	[-3.5484]
	(0.0109)	(0.0005)	(0.0072)	(0.0004)	(0.0078)	(0.0004)	(0.0327)	(0.0006)	(0.0227)	(0.0005)	(0.0236)	(0.0005)
INT	-0.0821*	-0.0719*	-0.1037**	-0.0749*	-0.1008**	-0.0701*	-0.1044**	-0.0816**	-0.1230***	-0.085161**	-0.1201**	-0.0796**
	[-1.9102]	[-1.8867]	[-2.4588]	[-1.9631]	[-2.3223]	[-1.8116]	[-2.3149]	[-2.1369]	[-2.7303]	[-2.2160]	[-2.5875]	[-2.048]
	(0.0578)	(0.0609)	(0.0149)	(0.0513)	(0.0214)	(0.0718)	(0.0220)	(0.0343)	(0.0071)	(0.0282)	(0.0107)	(0.0424)
RET	0.2381***	0.2796***	0.2465***	0.2845***	0.2419***	0.2809***	0.3470***	0.1150***	0.3612***	0.4157***	0.3478***	0.4022***
	[4.2598]	[4.1857]	[4.4188]	[4.2583]	[4.2775]	[4.1647]	[6.1551]	[6.3223]	[6.4786]	[6.6873]	[6.0956]	[6.4568]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
PER	0.6446***	0.6318***	0.6394***	0.6247***	0.6474***	0.6337***	0.5977***	0.5639***	0.5933***	0.5570***	0.6008***	0.5650***
	[8.1706]	[8.0353]	[8.1838]	[8.0277]	[8.1858]	[8.0188]	[7.2648]	[6.9602]	[7.2540]	[6.9413]	[7.2531]	[6.9243]
	(0.0000)	(0.0000)	(0.0000)	(0.00009)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
INF	0.1166*	0.1098*	0.1222*	0.1082*	0.1269**	0.1136**	0.1135*	0.1020*	0.1193*	0.0997*	0.1239*	0.1053*
	[1.8615]	[1.8853]	[1.9019]	[1.8501]	[2.0058]	[1.9757]	[1.7872]	[1.7782]	[1.8203]	[1.7277]	[1.9188]	[1.8583]
	(0.0644)	(0.0611)	(0.0589)	(0.0661)	(0.0465)	(0.0498)	(0.0760)	(0.0775)	(0.0707)	(0.0862)	(0.0570)	(0.0652)
Adjusted R^2	0.5478	0.5661	0.5409	0.5622	0.5423	0.5660	0.5769	0.6120	0.5709	0.6082	0.5716	0.6127

The dependent variable is the one month return. The time period looked upon is 2000-2014. United Kingdom suffers from two crises during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A18: UNITED STATES, OLS, 2000-2014

Independent var.												
PURERSENT	0.0146	0.0079			0.1055	0.1060	0.0129	0.0093			0.0557	0.0572
	[0.4275]	[0.2294]			[0.8651]	[0.8655]	[0.3212]	[0.2281]			[0.5050]	[0.5230]
	(0.6695)	(0.8189)			(0.3882)	(0.3880)	(0.7486)	(0.8199)			(0.6144)	(0.6018)
PURERSENT(-1)			-0.0141	-0.0174	-0.1071	-0.1109			-0.0034	-0.0062	-0.0503	-0.0544
			[-0.3701]	[-0.4435]	[-0.8454]	[-0.8671]			[-0.1086]	[-0.1942]	[-0.5134]	[-0.5615]
			(0.7118)	(0.6579)	(0.3991)	(0.3871)			(0.9137)	(0.8463)	(0.6085)	(0.5754)
CRISIS CODE							0.0182	0.0085	0.0191	0.0181	0.0120	0.0107
							[0.4282]	[0.2019]	[0.4850]	[0.4621]	[0.2942]	[0.2672]
							(0.6691)	(0.8403)	(0.6284)	(0.6447)	(0.7690)	(0.7897)
1M RET.(-1)		-0.0435		-0.0466		-0.0471		-0.0697		-0.0704		-0.0708
		[-0.7981]		[-0.8516]		[-0.8688]		[-1.2032]		-1.2136]		[-1.2325]
		(0.4259)		(0.3956)		(0.3862)		(0.2309)		(0.2269)		(0.2198)
C	0.0048**	0.0046**	0.0047**	0.0046**	0.0043**	0.0042*	-0.0002	-0.0004	-0.0003	-0.0007	-0.0002	-0.0006
	[2.1891]	[2.0661]	[2.1859]	[2.1016]	[2.0105]	[1.9274]	[-0.0971]	[-0.1564]	[-0.0979]	[-0.2622]	[-0.0829]	[-0.2527]
	(0.0300)	(0.0404)	(0.0302)	(0.0371)	(0.0460)	(0.0556)	(0.9228)	(0.8760)	(0.9222)	(0.7936)	(0.9341)	(0.8008)
VSTOXX	-0.0256	-0.0514	-0.0283	-0.0543	-0.0284	-0.0546	-0.0181	-0.0545	-0.0203	-0.0555	-0.0211	-0.0564
	[-0.8069]	[-1.2207]	[-0.8958]	[-1.2993]	[-0.9001]	[-1.3331]	[-0.4824]	[-1.1431]	[-0.5414]	[-1.1678]	[-0.5569]	[-1.1961]
	(0.4208)	(0.2239)	(0.3716)	(0.1956)	(0.3694)	(0.1843)	(0.6302)	(0.2549)	(0.5891)	(0.2448)	(0.5784)	(0.2336)
INT	0.1157***	0.1150***	0.1151***	0.1167***	0.1105***	0.1121***	0.0752	0.0711	0.0749*	0.0756*	0.0701	0.0707
	[3.8481]	[3.8913]	[3.9406]	[4.0392]	[3.5376]	[3.6271]	[1.5653]	[1.4897]	[1.7061]	[1.7405]	[1.4528]	[1.4781]
	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0005)	(0.0004)	(0.1197)	(0.1385)	(0.0901)	(0.0839)	(0.1485)	(0.1416)
RET	0.1979***	0.2093***	0.1978***	0.2082***	0.1952***	0.2057***	0.3402***	0.3599***	0.3410***	0.3631***	0.3360***	0.3582***
	[3.5326]	[3.4862]	[3.5239]	[3.4891]	[3.4547]	[3.4388]	[5.5628]	[5.4541]	[5.3223]	[5.3202]	[5.6693]	[5.6567]
	(0.0005)	(0.0006)	(0.0005)	(0.0006)	(0.0007)	(0.0007)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
PER	0.8330***	0.8249***	0.8268***	0.8218***	0.8195***	0.8144***	0.7826***	0.7671***	0.7786***	0.7668***	0.7747***	0.7629***
	[12.636]	[12.638]	[12.409]	[12.5498]	[12.435]	[12.543]	[12.2639]	[12.303]	[12.007]	[12.288]	[11.746]	[11.977]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
INF	-0.0259	-0.0246	-0.0286	-0.0253	-0.0087	-0.0053	-0.0534	-0.0473	-0.05671	-0.0498	-0.0451	-0.0379
	[-1.0789]	[-0.9512]	[-1.1404]	[-0.9514]	[-0.3155]	[-0.1811]	[-1.6139]	[-1.3924]	[-1.6308]	[-1.4142]	[-1.3320]	[-1.0974]
	(0.2822)	(0.3429)	(0.2557)	(0.3427)	(0.7528)	(0.8565)	(0.1087)	(0.1659)	(0.1051)	(0.1595)	(0.1849)	(0.2743)
Adjusted R^2	0.7700	0.7683	0.7687	0.7686	0.7697	0.7697	0.8188	0.8196	0.8179	0.8196	0.8173	0.8190

The dependent variable is the one month return. The time period looked upon is 2000-2014. United States suffers from two crises during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A19: BELGIUM, OLS, SEPARATE PERIODS

	Crisis 1, May 2007-October 2008, 34 obs.						Crisis 2					
PURERSENT	0.3751***		0.4765***	0.2983*		0.3969						
	[3.4582]		[3.1876]	[1.8600]		[1.6595]						
	(0.0016)		(0.0033)	(0.0727)		(0.1078)						
PURERSENT(-1)		0.1995	-0.1400		0.1131	-0.1377						
		[1.4708]	[-0.7229]		[0.8971]	[-0.6412]						
		(0.1514)	(0.4754)		(0.3768)	(0.5265)						
1M RETURN(-1)				0.1725	0.2723*	0.1714						
				[1.0166]	[2.0276]	[1.0623]						
				(0.3175)	(0.0516)	(0.2969)						
C	-0.0236**	-0.0235*	-0.0219*	-0.0192*	-0.0171	-0.0182*						
	[-2.4138]	[-1.9486]	[-2.0319]	[-1.9919]	[-1.6082]	[-1.8001]						
	(0.0217)	(0.0604)	(0.0511)	(0.0556)	(0.1183)	(0.0822)						
Adjusted R^2	0.1138	0.0088	0.0950	0.1099	0.0469	0.0895						
	Non-Crisis 1, 76 obs.						Non-Crisis 2, 59 obs.					
PURERSENT	-0.0867		0.5873**	-0.0230		0.5302*	-0.2169**		-0.2236	-0.2241**		-0.2188
	[-0.6284]		[2.0962]	[-0.2273]		[1.9417]	[-2.0687]		[-1.6336]	[-2.3067]		[-1.5944]
	(0.5317)		(0.0396)	(0.8208)		(0.0561)	(0.0431)		(0.1080)	(0.0249)		(0.1167)
PURERSENT(-1)		-0.1905*	-0.7019***		-0.1706*	-0.6356***		-0.1789	0.0061		-0.1894	-0.0066
		[-1.8418]	[-2.9994]		[-1.9151]	[-2.6573]		[-1.3162]	[0.0287]		[-1.4854]	[-0.0330]
		(0.0696)	(0.0037)		(0.0594)	(0.0097)		(0.1935)	(0.9772)		(0.1432)	(0.9738)
1M RETURN(-1)				0.2447**	0.2300**	0.1915**				-0.0393	-0.0487	-0.0399
				[2.5587]	[2.2743]	[2.1356]				[-0.3043]	[-0.4144]	[-0.3362]
				(0.0126)	(0.0259)	(0.0362)				(0.7620)	(0.6802)	(0.7380)
C	0.0053	0.0092	0.0078	0.0047	0.0080	0.0070	0.0009	0.0018	0.0010	0.0011	0.0018	0.0011
	[0.7334]	[1.4532]	[1.2939]	[0.8036]	[1.5069]	[1.3492]	[0.1423]	[0.2575]	[0.1436]	[0.1580]	[0.2503]	[0.1438]
	(0.4656)	(0.1504)	(0.1998)	(0.4243)	(0.1362)	(0.1816)	(0.8873)	(0.7978)	(0.8864)	(0.8750)	(0.8033)	(0.8862)
Adjusted R^2	0.0000	0.0231	0.0953	0.0344	0.0635	0.1197	0.0303	0.0147	0.0132	0.0147	0.0000	0.0000

The dependent variable is the one month return. The time period looked upon is 2000-2014. Belgium suffers from one crisis and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A20: DENMARK, OLS, SEPARATE PERIODS

	Crisis 1, October 2000-September 2002, 38 obs.						Crisis 2, September 2007-October 2008, 31 obs.					
PURERSENT	-0.1118		-0.1164	-0.1169		-0.1160	0.4473***		0.6705*	0.4765***		0.7584*
	[-0.6619]		[-0.6608]	[-0.6762]		[-0.6573]	[3.7402]		[1.9362]	[4.4788]		[2.0122]
	(0.5123)		(0.5132)	(0.5035)		(0.5155)	(0.0008)		(0.0634)	(0.0001)		(0.0547)
PURERSENT(-1)		-0.0343	-0.0344		-0.0381	-0.0349		0.3619**	-0.2593		0.3594***	-0.2935
		[-0.2107]	[-0.1970]		[-0.2302]	[-0.1960]		[2.3831]	[-0.6106]		[2.8939]	[-0.6993]
		(0.8344)	(0.8450)		(0.8193)	(0.8458)		(0.0242)	(0.5466)		(0.0074)	(0.4906)
1M RETURN(-1)				0.0032	-0.0224	-0.0028				-0.0871	0.0056	-0.1058
				[0.0297]	[-0.1992]	[-0.0255]				[-0.6103]	[0.0379]	[-0.7163]
				(0.9765)	(0.8433)	(0.9798)				(0.5468)	(0.9700)	(0.4802)
C	-0.0086	-0.0082	-0.0096	-0.0093	-0.0084	-0.0096	-0.0061	-0.0106	-0.0066	-0.0077	-0.0106	-0.0067
	[-0.8697]	[-0.9213]	[-0.9920]	[-0.8984]	[-0.8781]	[-0.9541]	[-0.7059]	[-1.1349]	[-0.6968]	[-0.8614]	[-1.1557]	[-0.6833]
	(0.3903)	(0.3632)	(0.3282)	(0.3753)	(0.3860)	(0.3470)	(0.4859)	(0.2660)	(0.4919)	(0.3966)	(0.2579)	(0.5005)
Adjusted R^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1724	0.0999	0.1350	0.1306	0.0666	0.1105
	Non-Crisis 1, 31 obs.						Non-Crisis 2, 58 obs.					
PURERSENT	-0.1295		-0.2656	-0.0574		-0.2609	-0.0198		0.2357	-0.0022		0.2669
	[-0.8366]		[-1.1652]	[-0.2660]		[-1.0847]	[-0.1699]		[0.9767]	[-0.0172]		[1.1345]
	(0.4096)		(0.2541)	(0.7923)		(0.2880)	(0.8657)		(0.3331)	(0.9863)		(0.2617)
PURERSENT(-1)		0.1012	0.2916		0.0934	0.2847		-0.1282	-0.3134		-0.1295	-0.3396
		[0.4460]	[1.0059]		[0.3904]	[0.9316]		[-1.0405]	[-1.2248]		[-0.9980]	[-1.3435]
		(0.6590)	(0.3234)		(0.6993)	(0.3601)		(0.3027)	(0.2260)		(0.3227)	(0.1848)
1M RETURN(-1)				-0.0649	-0.0494	-0.0227				-0.1021	-0.1040	-0.1287
				[-0.5044]	[-0.3629]	[-0.1731]				[-1.0489]	[-1.0144]	[-1.2771]
				(0.6181)	(0.7196)	(0.8639)				(0.2989)	(0.3149)	(0.2071)
C	0.0174*	0.0083	0.0139	0.0152	0.0092	0.0142	0.0144**	0.0142**	0.0136**	0.0146*	0.0158*	0.0154*
	[1.9371]	[0.7427]	[1.1867]	[1.1053]	[0.7280]	[1.1737]	[2.1078]	[2.2416]	[2.0808]	[1.7800]	[1.9932]	[1.9045]
	(0.0625)	(0.4638)	(0.2457)	(0.2788)	(0.4729)	(0.2512)	(0.0395)	(0.0290)	(0.0422)	(0.0807)	(0.0513)	(0.0623)
Adjusted R^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0020	0.0000	0.0000	0.0003

The dependent variable is the one month return. The time period looked upon is 2000-2014. Denmark suffers from two crises and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A21: FRANCE, OLS, SEPARATE PERIODS

	Crisis 1, August 2000-August 2002, 39 obs.						Crisis 2, May 2007-February 2009, 34 obs.					
PURERSENT	0.1676		0.3148	0.1709		0.3147	0.4004**		0.5190***	0.3426*		0.4847**
	[1.4040]		[1.4464]	[1.3317]		[1.4252]	[2.4415]		[2.7969]	[1.7843]		[2.1554]
	(0.1686)		(0.1570)	(0.1916)		(0.1632)	(0.0203)		(0.0089)	(0.0845)		(0.0396)
PURERSENT(-1)		0.0501	-0.1912		0.0515	-0.1905		0.1687	-0.1806		0.0810	-0.2270
		[0.4096]	[-0.8048]		[0.3835]	[-0.7713]		[1.1498]	[-0.8441]		[0.5579]	[-1.0336]
		(0.6845)	(0.4264)		(0.7037)	(0.4459)		(0.2590)	(0.4053)		(0.5811)	(0.3099)
1M RETURN(-1)				-0.0198	-0.0072	-0.0032				0.1665	0.2510*	0.1990
				[-0.1584]	[-0.0532]	[-0.0256]				[1.1705]	[1.8153]	[1.6265]
				(0.8751)	(0.9579)	(0.9797)				(0.2510)	(0.0795)	(0.1147)
C	-0.0235**	-0.0195*	-0.0208*	-0.0239**	-0.0197*	-0.02084	-0.0315***	-0.0236*	-0.0288**	-0.0268***	-0.0163	-0.0227**
	[-2.2193]	[-1.8872]	[-1.9869]	[-2.0918]	[-1.7870]	[-1.8760]	[-3.8694]	[-1.9356]	[-2.7363]	[-2.8471]	[-1.2933]	[-2.0848]
	(0.0327)	(0.0672)	(0.0548)	(0.0438)	(0.0826)	(0.0693)	(0.0005)	(0.0621)	(0.0103)	(0.0079)	(0.2058)	(0.0460)
Adjusted R^2	0.0018	0.0000	0.0000	0.0000	0.0000	0.0000	0.1341	0.0000	0.1209	0.1282	0.0227	0.1282
	Non-Crisis 1, 26 obs.						Non-Crisis 2, 56 obs.					
PURERSENT	-0.0479		0.0041	-0.1009		-0.0208	0.0108		0.2258	0.0054		0.2180
	[-0.4708]		[0.0356]	[-0.7677]		[-0.1356]	[0.0720]		[0.7435]	[0.0326]		[0.6654]
	(0.6420)		(0.9719)	(0.4508)		(0.8934)	(0.9429)		(0.4605)	(0.9741)		(0.5088)
PURERSENT(-1)		-0.2013	-0.2029		-0.2226	-0.2149		-0.1996	-0.3411		-0.1988	-0.3357
		[-1.1732]	[-1.0789]		[-1.2632]	[-1.0849]		[-1.4165]	[-1.1358]		[-1.4368]	[-1.0762]
		(0.2527)	(0.2923)		(0.2197)	(0.2902)		(0.1625)	(0.2613)		(0.1568)	(0.2869)
1M RETURN(-1)				-0.4110**	-0.4153**	-0.4164**				-0.0704	-0.0686	-0.0465
				[-2.1165]	[-2.1533]	[-2.1237]				[-0.4410]	[-0.4508]	[-0.2969]
				(0.0458)	(0.0425)	(0.0457)				(0.6610)	(0.6540)	(0.7677)
C	0.0127**	0.0124**	0.01239**	0.0191***	0.0176***	0.0175***	0.0041	-8.42E-05	0.0017	0.0045	0.0002	0.0018
	[2.5651]	[2.4573]	[2.4617]	[3.2763]	[3.1387]	[2.9734]	[0.7283]	[-0.0114]	[0.2695]	[0.7299]	[0.0257]	[0.2734]
	(0.0170)	(0.0220)	(0.0221)	(0.0035)	(0.0048)	(0.0072)	(0.4696)	(0.9909)	(0.7886)	(0.4687)	(0.9796)	(0.7856)
Adjusted R^2	0.0000	0.0000	0.0000	0.0981	0.1410	0.1005	0.0000	0.0217	0.0351	0.0000	0.0078	0.0184

The dependent variable is the one month return. The time period looked upon is 2000-2014. France suffers from two crises and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A22: GERMANY, OLS, SEPARATE PERIODS

	Crisis 1, August 2000-August 2002, 39 obs.						Crisis 2, December 2007-February 2009, 28 obs.					
PURERSENT	0.2904***		0.3779	0.2772***		0.4295	0.3397*		0.5286	0.4032**		0.5337*
	[2.8622]		[1.1827]	[2.8459]		[1.0847]	[1.9322]		[1.6720]	[2.5802]		[1.7452]
	(0.0069)		(0.2449)	(0.0074)		(0.2857)	(0.0643)		(0.1075)	(0.0164)		(0.0943)
PURERSENT(-1)		0.2246**	-0.1106		0.2309**	-0.1764		0.2657	-0.2048		0.3101*	-0.1597
		[2.2773]	[-0.3407]		[2.1683]	[-0.4219]		[1.2418]	[-0.4878]		[1.7412]	[-0.4299]
		(0.0288)	(0.7353)		(0.0370)	(0.6757)		(0.2259)	(0.6301)		(0.0945)	(0.6712)
1M RETURN(-1)				0.0236	-0.0199	0.0632				-0.1113	-0.0793	-0.0885
				[0.2075]	[-0.1542]	[0.4043]				[-0.6187]	[-0.4829]	[-0.5946]
				(0.8369)	(0.8783)	(0.6886)				(0.5419)	(0.6335)	(0.5579)
C	-0.0253**	-0.0271**	-0.0255**	-0.0256**	-0.0276**	-0.0235*	-0.0198	-0.0222	-0.0195	-0.0249*	-0.0249*	-0.0225
	[-2.3106]	[-2.4036]	[-2.2261]	[-2.3255]	[-2.2650]	[-1.8956]	[-1.6476]	[-1.5497]	[-1.3036]	[-2.0338]	[-1.7595]	[-1.6417]
	(0.0265)	(0.0215)	(0.0325)	(0.0260)	(0.0298)	(0.0665)	(0.1115)	(0.1338)	(0.2047)	(0.0532)	(0.0912)	(0.1142)
Adjusted R^2	0.0596	0.0241	0.0283	0.0262	0.0000	0.0030	0.0814	0.0334	0.0561	0.0566	0.0000	0.0211
	Non-Crisis 1, 33 obs.						Non-Crisis 2, 54 obs.					
PURERSENT	0.0851		-0.0531	0.0176		-0.1612	0.1450		0.7625***	0.2174*		0.7935***
	[0.4017]		[-0.16940]	[0.0769]		[-0.4911]	[1.2999]		[3.0569]	[1.9819]		[2.8771]
	(0.6906)		(0.8667)	(0.9393)		(0.6272)	(0.1993)		(0.0036)	(0.0529)		(0.0059)
PURERSENT(-1)		0.1011	0.1392		0.1153	0.2345		-0.1320	-0.7123***		-0.1249	-0.7473**
		[0.6717]	[0.6763]		[0.6193]	[1.0677]		[-1.0610]	[-2.7465]		[-0.9452]	[-2.5960]
		(0.5069)	(0.5042)		(0.5406)	(0.2948)		(0.2936)	(0.0083)		(0.3490)	(0.0124)
1M RETURN(-1)				-0.1521	-0.1653	-0.2065				-0.0558	-0.0497	0.0808
				[-0.9062]	[-0.8618]	[-1.1073]				[-0.5083]	[-0.4039]	[0.7092]
				(0.3723)	(0.3959)	(0.2776)				(0.6135)	(0.6880)	(0.4815)
C	0.0178	0.0198**	0.0193*	0.0189	0.0226*	0.0217	0.0045	0.0149***	0.0052	-0.0001	0.0151***	0.0044
	[1.5840]	[2.1362]	[1.7608]	[1.5094]	[1.7793]	[1.6138]	[0.5075]	[2.7238]	[0.7531]	[-0.0160]	[2.7542]	[0.6473]
	(0.1233)	(0.0409)	(0.0888)	(0.1420)	(0.0857)	(0.1178)	(0.6139)	(0.0088)	(0.4549)	(0.9873)	(0.0081)	(0.5204)
Adjusted R^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0025	0.0000	0.2331	0.0145	0.0000	0.2241

The dependent variable is the one month return. The time period looked upon is 2000-2014. Germany suffers from two crises and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A23: ITALY, OLS, SEPARATE PERIODS

	Crisis 1, April 2007-December 2008, 35 obs.						Crisis 2					
PURERSENT	-0.0993		0.0547	-0.1190		0.0402						
	[-0.6064]		[0.2952]	[-0.8819]		[0.2278]						
	(0.5484)		(0.7698)	(0.3846)		(0.8213)						
PURERSENT(-1)		-0.2050	-0.2403		-0.2211	-0.2470						
		[-1.0246]	[-0.9244]		[-1.1668]	[-0.9238]						
		(0.3132)	(0.3624)		(0.2522)	(0.3629)						
1M RETURN(-1)				0.2758**	0.2805**	0.2793*						
				[2.0772]	[2.0458]	[2.0034]						
				(0.0462)	(0.0493)	(0.0542)						
C	-0.0244*	-0.0291*	-0.0288*	-0.0203*	-0.0239	-0.0238						
	[-1.9257]	[-1.7371]	[-1.7161]	[-1.8195]	[-1.6324]	[-1.6235]						
	(0.0628)	(0.0920)	(0.0961)	(0.0785)	(0.1127)	(0.1149)						
Adjusted R^2	0.0000	0.0121	0.0000	0.0268	0.0637	0.0335						
	Non-Crisis 1, 75 obs.						Non-Crisis 2, 59 obs.					
PURERSENT	-0.1801*		0.3369	-0.2211**		0.2623	0.0344		0.1674	0.0584		0.2312
	[-1.9052]		[1.3271]	[-2.1730]		[0.9530]	[0.3190]		[0.4377]	[0.5155]		[0.5934]
	(0.0607)		(0.1887)	(0.0331)		(0.3439)	(0.7509)		(0.6633)	(0.6083)		(0.5554)
PURERSENT(-1)		-0.2559***	-0.5643**		-0.2835***	-0.5190*		0.0074	-0.1414		0.0127	-0.1918
		[-2.8429]	[-2.2011]		[-2.9817]	[-1.8990]		[0.0786]	[-0.3827]		[0.1291]	[-0.5116]
		(0.0058)	(0.0310)		(0.0039)	(0.0617)		(0.9376)	(0.7034)		(0.8977)	(0.6110)
1M RETURN(-1)				-0.1599*	-0.1537*	-0.1281				-0.1159	-0.1081	-0.1316
				[-1.6815]	[-1.8167]	[-1.3843]				[-1.0848]	[-0.9682]	[-1.1240]
				(0.0971)	(0.0735)	(0.1707)				(0.2827)	(0.3372)	(0.2660)
C	0.0046	0.0068	0.0064	0.0057	0.0076	0.0071	0.0016	0.0014	0.0019	0.0032	0.0017	0.0025
	[0.9679]	[1.5363]	[1.3950]	[1.0382]	[1.5331]	[1.4177]	[0.2479]	[0.1920]	[0.2804]	[0.4195]	[0.2171]	[0.3297]
	(0.3363)	(0.1288)	(0.1674)	(0.3027)	(0.1297)	(0.1607)	(0.8051)	(0.8485)	(0.7802)	(0.6765)	(0.8289)	(0.7429)
Adjusted R^2	0.0192	0.0525	0.0580	0.0296	0.0626	0.0602	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

The dependent variable is the one month return. The time period looked upon is 2000-2014. Italy suffers from one crisis and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A24: SPAIN, OLS, SEPARATE PERIODS

	Crisis 1, September 2000-September 2002, 37 obs.						Crisis 2,October 2007-February 2009, 30 obs.					
PURERSENT	-0.1459		-0.6021*	-0.1284		-0.6075*	0.2248**		-0.4795**	0.1819*		-0.5369**
	[-1.2021]		[-1.9571]	[-0.9761]		[-1.8290]	[2.1967]		[-2.1398]	[1.9332]		[-2.2031]
	(0.2374)		(0.0588)	(0.3361)		(0.0767)	(0.0365)		(0.0419)	(0.0642)		(0.0370)
PURERSENT(-1)		0.0578	0.5636		0.0476	0.5700		0.3954***	0.8002***		0.3959***	0.8216***
		[0.3824]	[1.5734]		[0.3098]	[1.4918]		[3.9428]	[3.4116]		[3.8926]	[3.4152]
		(0.7045)	(0.1252)		(0.7586)	(0.1455)		(0.0005)	(0.0021)		(0.0006)	(0.0022)
1M RETURN(-1)				-0.0744	-0.0675	0.0123				0.0349	-0.0019	0.0971
				[-0.7842]	[-0.6814]	[0.1254]				[0.3440]	[-0.0216]	[1.1718]
				(0.4385)	(0.5004)	(0.9010)				(0.7336)	(0.9830)	(0.2523)
C	-0.0167*	-0.0147	-0.0177*	-0.0172*	-0.0158*	-0.0175*	-0.0143*	-0.0180***	-0.01994***	-0.0160*	-0.0181***	-0.0185***
	[-1.9224]	[-1.6275]	[-1.9507]	[-1.8081]	[-1.7568]	[-1.9691]	[-1.8194]	[-3.0689]	[-2.9657]	[-1.9648]	[-2.9860]	[-2.8792]
	(0.0627)	(0.1129)	(0.0596)	(0.0797)	(0.0882)	(0.0577)	(0.0796)	(0.0048)	(0.0064)	(0.0602)	(0.0061)	(0.0081)
Adjusted R^2	0.0000	0.0000	0.0560	0.0000	0.0000	0.0267	0.0166	0.1251	0.1626	0.0000	0.0915	0.1378
	Non-Crisis 1, 33 obs.						Non-Crisis 2, 58 obs.					
PURERSENT	0.1668		0.5873***	0.1721		0.5672***	0.1129		0.2958	0.1126		0.2868
	[0.8308]		[3.3479]	[0.7949]		[3.2137]	[1.1360]		[1.5110]	[1.0012]		[1.4121]
	(0.4125)		(0.0023)	(0.4331)		(0.0033)	(0.2608)		(0.1366)	(0.3212)		(0.1638)
PURERSENT(-1)		-0.0854	-0.5360**		-0.0758	-0.5134**		-0.0020	-0.2401		0.0141	-0.2174
		[-0.4783]	[-2.6554]		[-0.3883]	[-2.3887]		[-0.0199]	[-1.2265]		[0.1287]	[-1.0604]
		(0.6359)	(0.0127)		(0.7007)	(0.0239)		(0.9842)	(0.2253)		(0.8980)	(0.2938)
1M RETURN(-1)				-0.1549	-0.1546	-0.1127				-0.1567	-0.1510	-0.1447
				[-0.7795]	[-0.7958]	[-0.5156]				[-1.3742]	[-1.2994]	[-1.2198]
				(0.4420)	(0.4326)	(0.6102)				(0.1751)	(0.1993)	(0.2279)
C	0.0235**	0.0112	0.0141	0.0255*	0.0140	0.0160	-0.0029	0.0010	-0.0011	-0.0035	0.0007	-0.0014
	[2.1080]	[0.9646]	[1.1961]	[2.0043]	[1.1126]	[1.2489]	[-0.3012]	[0.1148]	[-0.1208]	[-0.3273]	[0.0726]	[-0.1290]
	(0.0432)	(0.3424)	(0.2413)	(0.0545)	(0.2750)	(0.2220)	(0.7644)	(0.9090)	(0.9043)	(0.7447)	(0.9424)	(0.8978)
Adjusted R^2	0.0000	0.0000	0.0905	0.0000	0.0000	0.0719	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

The dependent variable is the one month return. The time period looked upon is 2000-2014. Spain suffers from two crises and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A25: SWEDEN, OLS, SEPARATE PERIODS

	Crisis 1, August 2000-June 2002, 37 obs.						Crisis 2
PURERSENT	0.0020		-0.1409	-0.0537		-0.1473	
	[0.0147]		[-0.4844]	[-0.4397]		[-0.4818]	
	(0.9883)		(0.6313)	(0.6630)		(0.6332)	
PURERSENT(-1)		0.0089	0.1165		0.0094	0.1221	
		[0.0552]	[0.3548]		[0.0589]	[0.3595]	
		(0.9563)	(0.7250)		(0.9534)	(0.7216)	
1M RETURN(-1)				0.0396	0.0372	0.0457	
				[0.3043]	[0.2858]	[0.3272]	
				(0.7628)	(0.7768)	(0.7457)	
C	-0.0219*	-0.0240**	-0.0248**	-0.0232*	-0.0232*	-0.0239**	
	[-1.8165]	[-2.1117]	[-2.2344]	[-1.9660]	[-1.9597]	[-2.0899]	
	(0.0779)	(0.0421)	(0.0323)	(0.0578)	(0.0585)	(0.0447)	
Adjusted R^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	Non-Crisis 1, 132 obs.						Non-Crisis 2
PURERSENT	0.0044		0.2804	0.0070		0.2775	
	[0.0395]		[1.3716]	[0.0644]		[1.2309]	
	(0.9685)		(0.1726)	(0.9488)		(0.2206)	
PURERSENT(-1)		-0.0974	-0.3272		-0.0975	-0.3248	
		[-0.6963]	[-1.3441]		[-0.7135]	[-1.2278]	
		(0.4875)	(0.1813)		(0.4769)	(0.2218)	
1M RETURN(-1)				0.0409	0.0422	0.0075	
				[0.5129]	[0.5046]	[0.0807]	
				(0.6089)	(0.6147)	(0.9358)	
C	0.0076	0.0076	0.0073	0.0070	0.0072	0.0072	
	[1.5454]	[1.5140]	[1.5119]	[1.3800]	[1.3834]	[1.4035]	
	(0.1247)	(0.1325)	(0.1330)	(0.1700)	(0.1689)	(0.1629)	
Adjusted R^2	0.0000	0.0018	0.0202	0.0000	0.0000	0.0126	

The dependent variable is the one month return. The time period looked upon is 2000-2014. Sweden suffers from one crisis and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A26: UNITED KINGDOM, OLS, SEPARATE PERIODS

	Crisis 1, August 2000-July 2002, 37 obs.						Crisis 2,October 2007-October 2008, 29 obs.					
PURERSENT	0.0440		0.0154	0.0035		0.0239	0.2604*		-0.2134	0.2544*		-0.2030
	[0.2704]		[0.0920]	[0.0202]		[0.1453]	[1.8363]		[-0.9181]	[1.8255]		[-0.8391]
	(0.7885)		(0.9273)	(0.9840)		(0.8854)	(0.0773)		(0.3674)	(0.0799)		(0.4097)
PURERSENT(-1)		-0.0282	-0.0361		-0.0273	-0.0396		0.3971**	0.5683**		0.4196**	0.5799**
		[-0.1529]	[-0.1845]		[-0.1426]	[-0.2003]		[2.5001]	[2.2189]		[2.6066]	[2.2135]
		(0.8794)	(0.8547)		(0.8875)	(0.8425)		(0.0191)	(0.0358)		(0.0152)	(0.0366)
1M RETURN(-1)				-0.0583	-0.0575	-0.0600				-0.0487	-0.0905	-0.0805
				[-0.4775]	[-0.4943]	[-0.5033]				[-0.3623]	[-0.8399]	[-0.7000]
				(0.6361)	(0.6243)	(0.6182)				(0.7202)	(0.4089)	(0.4907)
C	-0.0186**	-0.0146*	-0.0149	-0.0167*	-0.0155*	-0.0160	-0.0109*	-0.0114**	-0.0123**	-0.0128*	-0.0122**	-0.0130**
	[-2.2655]	[-1.7059]	[-1.5532]	[-1.8507]	[-1.7292]	[-1.5801]	[-1.7524]	[-2.3797]	[-2.3127]	[-1.8283]	[-2.1689]	[-2.1718]
	(0.0298)	(0.0972)	(0.1299)	(0.0732)	(0.0931)	(0.1239)	(0.0911)	(0.0249)	(0.0293)	(0.0795)	(0.0398)	(0.0400)
Adjusted R^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0333	0.1253	0.1078	0.0000	0.0986	0.0774
	Non-Crisis 1, 33 obs.						Non-Crisis 2, 56 obs.					
PURERSENT	0.2124		0.3377	0.3926**		0.4902**	-0.0026		0.0707	0.0040		0.1615
	[1.4740]		[1.5015]	[2.2785]		[2.5118]	[-0.0321]		[0.2258]	[0.0478]		[0.5338]
	(0.1506)		(0.1440)	(0.0302)		(0.0181)	(0.9745)		(0.8223)	(0.9621)		(0.5958)
PURERSENT(-1)		0.0372	-0.1754		0.1320	-0.1568		-0.0228	-0.0884		-0.0196	-0.1693
		[0.3077]	[-0.9195]		[0.8230]	[-0.8449]		[-0.2949]	[-0.2839]		[-0.2304]	[-0.5565]
		(0.7604)	(0.3654)		(0.4172)	(0.4053)		(0.7692)	(0.7776)		(0.8187)	(0.5803)
1M RETURN(-1)				-0.5271***	-0.4329**	-0.5234***				-0.2623**	-0.2618**	-0.2694**
				[-3.2411]	[-2.4407]	[-3.2870]				[-2.4851]	[-2.4366]	[-2.5063]
				(0.0030)	(0.0210)	(0.0027)				(0.0162)	(0.0183)	(0.0154)
C	0.0039	0.0088*	0.0061	0.0051	0.0103*	0.0066	0.0052	0.0044	0.0045	0.0064	0.0060	0.0062
	[0.8675]	[1.8861]	[1.3079]	[1.1645]	[1.8602]	[1.2954]	[1.3936]	[1.1544]	[1.1893]	[1.3805]	[1.2695]	[1.3328]
	(0.3924)	(0.0690)	(0.2012)	(0.2537)	(0.0730)	(0.2058)	(0.1691)	(0.2535)	(0.2397)	(0.1734)	(0.2099)	(0.1885)
Adjusted R^2	0.0143	0.0000	0.0061	0.2541	0.1232	0.2438	0.0000	0.0000	0.0000	0.0329	0.0333	0.0181

The dependent variable is the one month return. The time period looked upon is 2000-2014. United Kingdom suffers from two crises and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.

TABLE A27: UNITED STATES, OLS, SEPARATE PERIODS

	Crisis 1, August 2000-July 2002, 33 obs.						Crisis 2, October 2007-October 2008, 29 obs.					
PURERSENT	0.1305		0.4876*	0.1637		0.5274*	0.1402		-0.2297	0.1345		-0.0082
	[0.6272]		[1.7937]	[0.6898]		[1.9986]	[0.8378]		[-0.3284]	[1.0323]		[-0.0121]
	(0.5351)		(0.0833)	(0.4958)		(0.0554)	(0.4095)		(0.7453)	(0.3118)		(0.9904)
PURERSENT(-1)		-0.0793	-0.4516		-0.0725	-0.4715**		0.1838	0.3826		0.1549	0.1621
		[-0.4360]	[-1.6611]		[-0.3688]	[-2.2421]		[1.4865]	[0.5774]		[1.3808]	[0.2459]
		(0.6660)	(0.1075)		(0.7150)	(0.0331)		(0.1492)	(0.5688)		(0.1796)	(0.8078)
1M RETURN(-1)				-0.1352	-0.1054	-0.1603*				0.3662***	0.3409***	0.3395**
				[-1.1367]	[-1.1690]	[-1.9980]				[2.9738]	[2.8596]	[2.0784]
				(0.2650)	(0.2519)	(0.0555)				(0.0064)	(0.0084)	(0.0485)
C	-0.0262	-0.0072	-0.0142	-0.0287	-0.0092	-0.0178	-0.0176	-0.0193	-0.0205	-0.0132	-0.0140	-0.0141
	[-1.1789]	[-0.3953]	[-0.7870]	[-1.1008]	[-0.4521]	[-0.7645]	[-1.3569]	[-1.5857]	[-1.6051]	[-1.5175]	[-1.6580]	[-1.4500]
	(0.2474)	(0.6954)	(0.4377)	(0.2800)	(0.6545)	(0.4510)	(0.1860)	(0.1249)	(0.1210)	(0.1417)	(0.1098)	(0.1600)
R^2	0.0000	0.0000	0.0439	0.0000	0.0000	0.0373	0.0000	0.0000	0.0000	0.0747	0.0811	0.0428
	Non-Crisis 1, 37 obs.						Non-Crisis 2, 56 obs.					
PURERSENT	0.1247		0.2849**	0.1851		0.3706**	0.1215		0.4630*	0.1196		0.4138*
	[0.9482]		[2.6329]	[1.1130]		[2.6428]	[0.8273]		[1.8838]	[0.6981]		[1.7039]
	(0.3495)		(0.0128)	(0.2738)		(0.0126)	(0.4117)		(0.0652)	(0.4882)		(0.0945)
PURERSENT(-1)		-0.1193	-0.2882*		-0.0965	-0.3056		-0.0548	-0.4258**		-0.0278	-0.3664**
		[-0.7004]	[-1.7020]		[-0.5205]	[-1.5817]		[-0.4034]	[-2.2963]		[-0.1876]	[-2.4063]
		(0.4885)	(0.0982)		(0.6062)	(0.1236)		(0.6883)	(0.0257)		(0.8519)	(0.0198)
1M RETURN(-1)				-0.2434	-0.1769	-0.2580				-0.1987	-0.1962	-0.1449
				[-1.5379]	[-1.1992]	[-1.5810]				[-1.3968]	[-1.3974]	[-1.1438]
				(0.1336)	(0.2390)	(0.1237)				(0.1684)	(0.1682)	(0.2580)
C	0.0065**	0.0095**	0.0080**	0.0077**	0.0105**	0.0091**	0.0157***	0.0095***	0.0121***	0.0178***	0.0128***	0.0145***
	[2.2101]	[2.5782]	[2.4668]	[2.2019]	[2.6248]	[2.4845]	[3.1772]	[2.7656]	[2.7578]	[3.0150]	[2.8183]	[2.8575]
	(0.0337)	(0.0144)	(0.0190)	(0.0348)	(0.0130)	(0.0184)	(0.0025)	(0.0078)	(0.0080)	(0.0040)	(0.0068)	(0.0062)
R^2	0.0000	0.0000	0.0103	0.0109	0.0000	0.0458	0.0000	0.0000	0.0443	0.0179	0.0039	0.0465

The dependent variable is the one month return. The time period looked upon is 2000-2014. United States suffers from two crises and two non-crisis periods during this period. Coefficients are followed by t-statistics in brackets and p-values in parentheses. ***,**,* indicate the significance levels 0.01, 0.05 and 0.1.