THE IMPACT OF MACROECONOMIC FACTORS ON THE PORTUGUESE STOCK MARKET

Mota. J., Santos J., Oliveira H., Moutinho V.[*]

Abstract: Macroeconomic factors impact both the stock markets and society. However, one generic research question remains unanswered: Do all macroeconomic factors impact all markets and all countries with the same strength? This study aims to contribute to the perception of how macroeconomic factors impact the Portuguese Stock Market. It also considers how the Portuguese Stock Market reacts to various factors compared to the North American and Japanese Stock Markets, focusing on the last decade. Using GARCH Models, the results document that the Portuguese Stock Market suffers significant impacts from the EUR-USD exchange rate. In turn, oil and gold prices also have a significant influence. The Japanese market, at first sight, looks more resilient to outside events, but it is also sensitive to gold price fluctuations and the EUR-JPY exchange rate. The North American market especially feels pressure from exchange rates from both the EUR and JPY and Brent.

Key words: macroeconomic factors, stock exchange markets, Portuguese Stock Exchange market

Introduction

Stock markets reflect worldwide events and trends. Situations like armed conflicts, political instability, and price-related issues are reflected in the country's economy and show how private companies react to external turbulence. Macroeconomic

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factors as a concept bring together a lot of indices and measures that have an impact on a country-level economy.

Besides the previous factors, some commodities that have a special impact on society and markets, the most obvious examples being oil and gold.

Six research questions were written to establish some guidelines concerning the study, its output, and its feedback.

Macroeconomic factors impact both the stock markets and society. Do all macroeconomic factors impact all markets and all countries with the same strength? Well, it is presumed not, and this research aims to contribute to the answer by establishing some relationships between a group of macroeconomic factors and the stock markets of the Portuguese PSI 20, the American NYSE, and the Japanese Nikkei 225.

Research questions:

Q1. According to the literature, is it common to relate Gold and Oil price fluctuations with stock market performance?

Q2. According to the literature, is it common to relate interest rate fluctuation with stock market performance?

Q3. According to the literature, is it common to use currency fluctuation when analyzing stock market performance?

Q4. According to the data, how dependable are the links between stock market performance and commodities?

Q5. According to the data, how dependent are stock market performances on interest rates?

Q6. According to the data, how do currencies and exchange rates affect stock market performances?

These six questions were posed to find answers in both the literature review and the data analysis.

This paper contributes to the existing body of literature on the relationships between financial markets, the oil price, and the gold price by examining the risk transmission effects that (endogenous) financial crises produce in financial and commodity markets. It also looks at how they contribute to growth.

Oil and gold are considered in this study because they are two of the most traded commodities in futures markets, and they are classified as some of the most important goods for the world economy. For this reason, they are often included by investors in their investment portfolios as a form of diversification.

In terms of methodologies, in the first stage, a systematic literature review was considered. In the second stage, in terms of econometric methodology, particular emphasis was given to the use of multivariate autoregressive conditional volatility models, which support the analysis of the interdependence and risk transmission relationships between financial markets and commodity markets.

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Literature Review

This literature review followed the Tranfield et al. (2003) systematic literature review (SLR) procedure using two major keywords to look for research in both SCOPUS and Science Direct databases, "Macroeconomic Factors" AND "Stock Market".

The results of this search were narrowed down by adding "EUROPE" OR "EUROPEAN" OR "EU" to exclusively look for articles concerning Europe, or European-related markets (e.g., the seminal papers of Gjerde and Sættem (1999), Ioannides et al. (2005), and Errunza and Hogan (1998b)).

The first search on the SCOPUS database used the words "Macroeconomic Factors AND Stock Market" which gave an output of 200 documents, a number that was narrowed by adding "AND Europe OR European OR UE" to the search, which gave a final output of 19 Articles.

Due to not all being fully available, 8 documents were removed from that output. This decision selected a semi-final result of 11.

From the SCOPUS output, it was realized that the research trend is consistent.

From Science Direct and using the same words and procedure to search for papers, "Macroeconomic Factors AND Stock Market" plus "AND Europe OR European OR UE", an output of 870 was obtained, from which only 81 were fully available in an open access way.
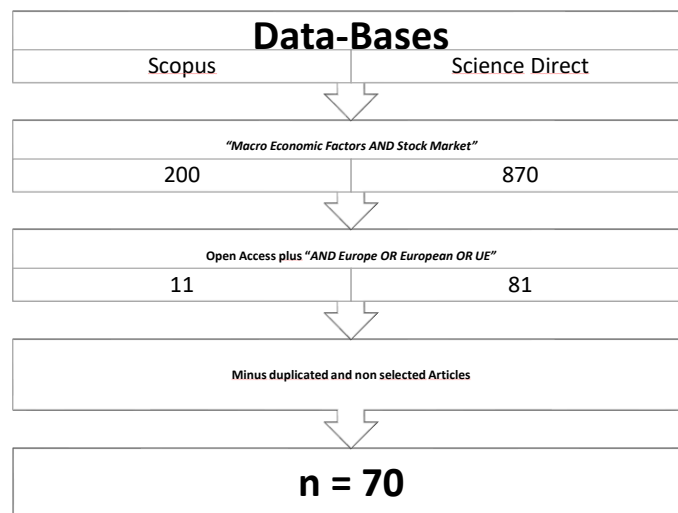
Data-Bases	
Scopus	Science Direct
"Macro Economic Factors AND Stock Market"	
200	870
Open Access plus "AND Europe OR European OR UE"	
11	81
Minus duplicated and non selected Articles	
n = 70	

Figure 1: Flow chart of the SLR Process.
Source: Own study

So, after all this adding and filtering, there was a list of 70 articles that were narrowed down to include only papers between the years 2015 and 2020. The final list included 36 papers organized into research domains, authors, and year of publishing.

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The information shown in Figure 2 made it possible to state that there is consistent research and curiosity concerning this topic.

Research domains, presented in Table 1, were built as aggregation concepts, mainly using keywords to describe and categorize the papers.

After this "clusterization" of the selected documents, the main findings of the domains were organized to establish some links and a nexus between them.

As stated before, the articles were categorized using the most representative keyword; then they were organized into eight domains: Accounting and Finance, Emerging Markets, Commodity and Stock Markets, Banking System, Stock Market Returns, Macroeconomic Factors Perception Forecasting or Impact, Momentum and Market Timing, and Capital and Money Markets.

Concerning the domain distribution, it was shown that from the eight domains, "Stock Market Returns" and "Commodity and Stock Market" are the most representative ones (with 48.6% of all the documents).
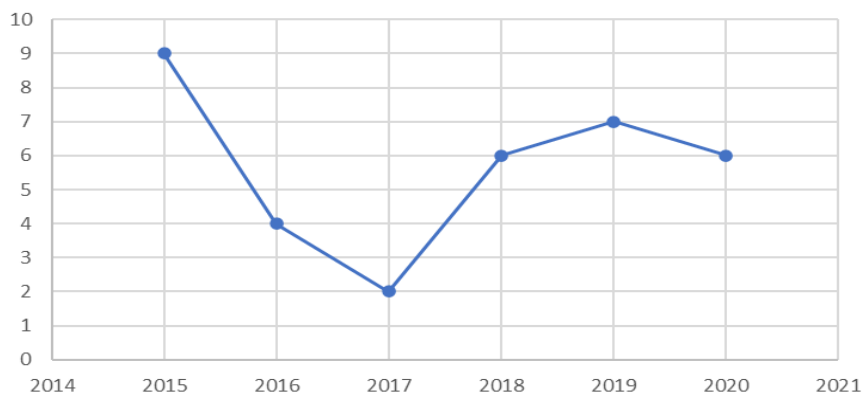

Figure 2: Articles per year.
Source: Own study

Table 1. Articles per Domain.

Domain	Number	Percent
Accounting and finance	4	12.1%
Banking system	2	6.1%
Capital and money market	3	9.1%
Commodity and stock market	9	27.3%
Emerging markets	2	6.1%
Macroeconomic factors perception, forecasting or impact	4	12.1%
Momentum and market timing	2	5.9%
Stock market returns	7	21.3%

Source: Own study

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Furthermore, to the new perspective presented after Table 1, it is important to add the time effect in a year-view mirror way, reflected in Table 2. This new point of view makes it possible to relate the domain with its impact through and over time, and for instance, the domains "Stock Market Returns" and "Commodity and Stock Market" can be highlighted due to their behavior between 2015 and 2019, a time when they both had a peak in interest as far as investigators as concerned. This trend was also followed by the "Macroeconomic Factors Perception, Forecasting, or Impact", with less impact.

Table 2. Articles per Domain over time

DOMAIN	AUTHORS
ACCOUNTING AND FINANCE	(Robu and Robu, 2015); (Aɪca et al., 2015); (Marx and Struweg, 2015); (El-Helaly et al., 2020)
BANKING SYSTEM	(Mpofu and Nikolaidou, 2018); (Rosati et al., 2020)
CAPITAL AND MONEY MARKETS	(Erdoğan et al., 2020); (Meluzín and Zinecker, 2015); (Chen et al., 2020)
COMODITY AND STOCK MARKETS	(Bildirici and Türkmen, 2015); (Azar and Chopurian, 2018); (Lin et al., 2019); (Grum and Govekar, 2016); (Gupta, 2016); (Ntim et al., 2015); (Karanasos et al., 2018); (Al-Maadid et al., 2017); (Yang et al., 2019)
EMERGING MARKETS	(Nguyen et al., 2018); (Kirikkaleli, 2020)
MACROECOMICS FACTORS PERCEPTION, FORECASTING, OR IMPACT	(Țițan, 2015); (Kotcharin and Maneenop, 2018); (Çelik et al., 2016); (Celebi and Hönig, 2019)
MOMENTUM AND MARKET TIMING	(Mohapatra and Misra, 2019); (Lobão and Azeredo, 2018)
STOCK MARKET RETURNS	(Caporale et al., 2019); (Moya-Martínez et al., 2015); (Meluzín and Zinecker, 2014); (Ng and Ariff, 2019); (Altinbas and Biskin, 2015); (Tiwari et al., 2016); (Prazák and Stavárek, 2017);

Source: Own study

Given the importance of the relationship between commodities and stock markets, as documented by the settled SLR domain, this relationship was deepened in the literature review.

Degiannakis et al. (2018) consider that oil price changes can transmit and affect the behavior of equity markets through four channels: the corporate asset valuation channel, the monetary policy channel, the aggregate output channel of the economy and the uncertainty channel. In turn, Rahman (2021) examined the impact of oil prices on aggregate equity indices, suggesting a negative relationship between these two markets. In oil-exporting countries, financial markets tend to react positively to oil price increases (Mokni, 2020; Alshehri et al., 2017; Nusair and Al-khasawneh, 2018, among others). Ferreira et al. (2019) analyzed the relationship between oil

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prices and equity markets in 20 countries before and after the 2007-2009 global financial crisis. The results suggest that most equity indices showed a low correlation with the oil price in the pre-crisis period, although there were significant cases. In the post-crisis period, most countries evidenced a positive and significant relationship. Rahman and Serletis (2019) examined the relationship between oil prices and US equity market variations. Their results suggest that positive oil price changes negatively and significantly affect equity market prices. This relationship tends to be more pronounced in periods of crisis. However, these results are not observed when the study focuses on net oil exporting countries. Nusair and Al-Khasawneh (2018) maintain that increases (decreases) in oil prices exert positive (negative) and significant effects on the stock market when it shows an upward (downward) trend, suggesting positive and significant co-movements. Economou (2016) analyzed the causes of the main oil price shocks over the period 1990-2015, highlighting that demand-related shocks are predominant and are associated with periods of economic expansion and contraction. Shocks that derive from geopolitical events are less common.

In a study concerning the Chinese market, Ming et al. (2020) consider that gold can be used as a hedging instrument only in the long run on the nexus between gold commodity and equity indices. Ghazali et al. (2020) consider that gold shows suitable hedging properties only in developed countries. These results are consistent with those obtained by Hussain Shahzad et al. (2020), who consider that gold constitutes an excellent hedging tool for the stock market indices of the G7 countries. However, the results of studies that focus on the role of gold in periods of crisis are varied. Abuzayed et al. (2022) report that gold presented itself as a good diversification opportunity in the UK during Brexit. However, compared to gold, oil presented greater hedging potential. More recently, Drake (2022) analyzed the periods of the 2007-2009 global financial crisis and the COVID-19 pandemic crisis, finding no evidence of a negative correlation between gold and equity markets, contradicting the belief that investors take refuge in gold in periods of economic stress. It found, however, that the relationship between gold and financial markets is positive in periods with negative real interest rates and that gold can be considered a safe asset for investors in periods of high market volatility and negative real interest rates, as when rates fall below zero investors move their savings into gold and financial markets.

There were research questions to be answered concerning the literature review. The first question was, "According to the literature, is it common to relate Gold and Oil price fluctuations with stock market performance?" and for this one, the answer is yes. Of 36 documents, 9 mention the link between those commodities and the stock market, focusing also on their impact on each other. A short note concerning gold. Most of the literature understands that a fluctuation in the price of gold directly reflects on the markets. If the market index is stable and growing, the gold price is also stable but slowly decreasing. On the other hand, if the market index is falling, then it will likely bring about a serious increase in the gold price.

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The other research question was about the effect of interest rates on the stock markets: "According to the literature, is it common to relate interest rate fluctuation with the stock market performance?" and like the first one, the answer is yes. A big slice of this literature review mentions interest rates in a macroeconomic factors context, relating them directly to the stock markets, or society (in how this index affects the consumer).

The final question considered here relates to currencies and markets. "According to the literature, is it common to use currency fluctuation when analyzing stock market performance?" The answer is also yes, not as relevant as the previous two; still it was mentioned in 5 of 36 articles of this systematic literature review.

Research Methodology and Data

After the literature review approach, the variables were related empirically, aiming to establish some relations, correlations, and a nexus between the chosen macroeconomic factors and their impact on the stock markets.

Quarterly closing prices of the leading stock indices were considered to capture the interdependence and transmission of information and volatility between markets, particularly the US, Japanese and Portuguese markets for 2010-2019. This process also captured the effects of the global financial crisis of 2007-2009, which created the enabling environment for the emergence of the sovereign debt crisis in 2010, in which several European countries received external aid due to their difficulties in paying off or refinancing their public debts.

This study investigates the interrelationships between individual countries' economic and financial conditions and the energy and asset markets, focusing on the store of value commodities, namely crude oil, and gold futures prices. The analysis aims to capture any dependencies between these factors. The main stock indexes of each country were considered: NYSE, NIKKEI 225, and PSI 20, to represent, respectively, the USA, Japan, and Portugal. Regarding commodities, oil prices are represented by the price of Brent futures contracts traded on the Intercontinental Exchange (ICE). The price of gold futures contracts represents the price of gold traded on the Chicago Mercantile Exchange (CME). The commodity prices were initially obtained in US dollars and are measured in US dollars per ounce for Gold and US dollars per barrel for Brent. All data were collected using a Bloomberg terminal to obtain reliable data with the best possible quality.

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Table 3. Data Structure

		Annual	Quarterly	Monthly
Stock Exchange Market Index	PSI 20	-	X	X
	NYSE Composite	-	X	X
	Nikkei 225	-	X	X
Commodities Price Index	Crude Oil Price Brent	-	X	X
	Crude Oil Price WTI	-	X	X
	Gold Price	-	X	x
GDP	Portugal	X	X	-
	USA	X	-	-
	Japan	X	-	-
Currencies	EUR-USD	-	X	X
	EUR-JPY	-	X	X

Source: Own study

In this study, for analyzing the temporal variation of the relationship between the price of oil and gold commodities and stock market performance, whose primary interest focuses on the temporal variation of the conditional variance of returns, the multivariate GARCH (Generalized Autoregressive Conditional Heteroskedasticity) models were used. In their generic form, these models are composed of two functions: a) conditional mean function; and b) conditional variance function of the dependent variable. The model specification is as follows:

$$y_t = \phi(\theta)_t + \varepsilon_t \tag{1}$$

where y_t represents the dependent variable, whose variance is intended to be modelled, $\phi(\theta)_t$ represents the functional relationship of the expected value of the dependent variable and θ the set of parameters to estimate from this function. The equation of the conditional variance of, *i.e.*, ε_t, is specified as

$$\sigma_t^2 = \alpha_0 + \sum_{j=1}^q \alpha_j \varepsilon_{t-j}^2 + \sum_{j=1}^p \beta_j \sigma_{t-j}^2 \tag{2}$$

where the following conditions must be observed: $\alpha_0 \geq 0$, $\alpha_j \geq 0$, $\beta_j \geq 0$. For the autoregressive process of the model to be stationary, it is necessary that the condition: $\sum_{j=1}^q \alpha_j + \sum_{j=1}^p \beta_j < 1$. In this model, the current conditional volatility (*i.e.*, σ_t^2) is explained by the long-run variance rate α_0 (*i.e.*, non-conditional variance), by the square of the past residuals, ε_{t-j}^2, and by the estimated past values of the conditional volatility, σ_{t-j}^2. That is, conditional volatility in the current period is a weighted average of the conditional volatility measures and the square of the prior errors.

The ARCH (captured by the coefficients a_{ii}) and GARCH (captured by the coefficients b_{jj}) of returns were applied, usually analyzed using the coefficients of the VAR model, where coefficients are estimated in the VAR model equations to measure the level of dependence of the returns of one variable with past returns of

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other variables. As the analysis of the behavior and interdependencies of financial markets, at the level of the first and second moments of the distribution of the rate of change of prices, is crucial for the decision-making process, both from the perspective of economic agents, in general, and of individual and institutional investors and market coordination and regulation authorities, in particular, it is crucial to investigate the spillover effects in financial and commodity markets.

Research Results

Using Stata, a general statistical overview is given in Table 4 that presents the maximum, minimum, mean, and standard deviation.

Table 4. Descriptive Statistics

Variable	**Mean**	**Std.Dev.**	**Min**	**Max**
Portuguese Real GDP	46157.65	3796.888	40735.4	54639.9
Price Consumer Index	99.8015	2.906174	92.19896	104.1509
Short-term Interest Rate	0.19148	0.5755891	-0.40297	1.562067
Long-term Interest Rate	4.747	3.391156	0.27	13.22
PSI-20	7.12E+13	6.97E+13	1.62E+13	2.96E+14
Brent (close)	8.03E+01	2.55E+01	36.77	118.84
Brent (Capitalization)	1.06E+09	2.40E+08	5.91E+08	1.47E+09
NYSE Composite	1.02E+04	1.96E+03	6911.873	13543.35
EUR-USD	1.230258	0.1136628	1.067567	1.4568
Nikkei 225	15848.07	4972.941	8626.117	23292.52
EUR-JPY	123.3638	11.60857	98.29333	144.4067
Gold (price per troy)	1346.937	176.1495	1107.143	1717.66

Source: Own study

For this data, due to the series, two different tests were done concerning the issue of unit roots. Those tests were the augmented Dickey–Fuller (ADF) and Phillips–Perron tests.

To find some connections between the data, three ARCH one lag models were used. The reason for this number of models is the number of stock market returns that were focused on; in other words, one model per market was chosen to make it possible to compare the outputs.

To help the data analysis, for each model, a correlation matrix was also performed. This matrix makes it possible to interpret the data from the ARCH model. Besides all this, it was also necessary to run a cointegration Johansen test.

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Table 5. Regression and correlation results for PSI-20

PSI- 20	Coef.	Std.Err.	z	P>|z|	[95%Conf.Interval]	
Short-Term Irate	3.95E+13	.	.	.	.	.
Long-Term Irate	7.63E+12	.	.	.	.	.
Brent	3.90E+11	.	.	.	.	.
Gold	-6.17E+09	.	.	.	.	.
EUR-USD	-2.75E+14	.	.	.	.	.
EUR-JPY	5.55E+12	.	.	.	.	.
C	-3.42E+14	.	.	.	.	.
arch						
L1.	-0.0257152	0.307112	-0.08	0.933	-0.62764	0.5762139
_cons	2.77E+27	.	.	.	.	.

PSI-20	PSI-20	Short-Term Irate	Long-Term Irate	Brent	Gold	EUR-USD	EUR-JPY
	1						
Short-Term Irate	-0.1012	1					
Long-Term Irate	-0.1676	0.8468	1				
Brent	-0.0161	0.7088	0.7596	1			
Gold	-0.3246	0.4951	0.7218	0.6684	1		
EUR-USD	0.0187	0.81	0.7017	0.8879	0.4564	1	
EUR-JPY	0.5736	-0.5104	-0.6477	-0.2865	-0.6819	-0.1921	1

Source: Own study

Table 6. Regression and correlation results for NIKKEI 225

Nikkei 225	Coef.	Std. Err.	z	P>|z|	[95%Conf.Interval]	
Short-Term Irate	-506.673	1004.799	-0.5	0.614	-2476.04	1462.697
Long-Term Irate	-599.667	145.3489	-4.13	0	-884.546	-314.7883
Brent	38.71912	24.63872	1.57	0.116	-9.57189	87.01012
Gold	11.17223	2.157442	5.18	0	6.943722	15.40074
EUR-USD	-25960.3	5679.377	-4.57	0	-37091.6	-14828.9
EUR-JPY	186.1831	30.22543	6.16	0	126.9423	245.4238
C	9636.043	6904.123	1.4	0.163	-3895.79	23167.87
arch						
L1.	1.097045	0.576389	1.9	0.057	-0.03266	2.226746
_cons	334185.3	411434.4	0.81	0.417	-472211	1140582

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Nikkei 225	Nikkei-225	Short-Term Irate	Long-Term Irate	Brent	Gold	EUR-USD	EUR-JPY
	1						
Short-Term Irate	-0.8712	1					
Long-Term Irate	-0.8692	0.8468	1				
Brent	-0.7014	0.7088	0.7596	1			
Gold	-0.5344	0.4951	0.7218	0.6684	1		
EUR-USD	-0.7636	0.81	0.7017	0.8879	0.4564	1	
EUR-JPY	0.6122	-0.5104	-0.6477	-0.2865	-0.6819	-0.1921	1

Source: Own study

The Portuguese Stock Market, according to the data, suffers a major impact from the EUR-USD exchange rate, and the price of oil and gold also has a significant impact. The results are exhibited in Table 5.

The Japanese market, at first sight, looks more resilient to outside events and impacts than the Portuguese. However, it is also sensitive to gold price fluctuations and the EUR-JPY exchange rate. The results are shown in Table 6.

Table 7. Regression and correlation results for NYSE

NYSE	Coef.	Std.Err.	z	P>|z|	[95%Conf.Interval]	
Short-Term Irate	-1487.25	122.9669	-12.09	0	-1728.26	-1246.236
Long-Term Irate	-252.401	29.59743	-8.53	0	-310.411	-194.3907
Brent	7.275782	4.327634	1.68	0.093	-1.20622	15.75779
Gold	6.715546	0.575893	11.66	0	5.586816	7.844276
EUR-USD	-2459.67	691.222	-3.56	0	-3814.44	-1104.894
EUR-JPY	51.16402	7.423127	6.89	0	36.61496	65.71308
C	-1151.99	1917.415	-0.6	0.548	-4910.06	2606.072
arch						
L1.	2.47369	0.752135	3.29	0.001	0.999532	3.947848
_cons	230.3678	4310.46	0.05	0.957	-8217.98	8678.713

NYSE	NYSE	Short-Term Irate	Long-Term Irate	Brent	Gold	EUR-USD	EUR-JPY
	1						
Short-Term Irate	-0.8481	1					
Long-Term Irate	-0.802	0.8468	1				

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Brent	-0.553	0.7088	0.7596	1			
Gold	-0.3704	0.4951	0.7218	0.6684	1		
EUR-USD	-0.6618	0.81	0.7017	0.8879	0.4564	1	
EUR-JPY	0.5722	-0.5104	-0.6477	-0.2865	-0.6819	-0.1921	1

Source: Own study

The North American market looks quite resistant to exogenous factors, results exhibited in table 7. However, it feels the exchange rate pressures from both the EUR and JPY and oil (Brent).

Table 8. Johansen Cointegration Tests

rank	parms	LL	eigenvalue	trace statistic	5% Critical value
0	156	-3171.23	.	591.7485*	.
1	179	-3086.16	0.98864	421.6032	277.71
2	200	-3025.44	0.95907	300.1571	233.13
3	219	-2976.59	0.92355	202.4554	192.89
4	236	-2941.11	0.84541	131.5105	156
5	251	-2913.91	0.76114	77.0998	124.24
6	264	-2900.49	0.50659	50.2561	94.15
7	275	-2890.43	0.41082	30.1533	68.52
8	284	-2882.87	0.32827	15.0334	47.21
9	291	-2877.28	0.25496	3.8494	29.68
10	296	-2875.37	0.09559	0.0314	15.41
11	299	-2875.36	0.00083	0	3.76
12	300	-2875.36	0		

Source: Own study

Discussion

A brief overview suggests that the Portuguese Stock Market is more vulnerable to outside influences and impacts than the North American and Japanese Stock Markets.

This journey was started with some empirical questions (Q4 to Q6), and in this final part, an opportunity is taken to point the way to find some answers.

The first research question concerning this empirical part (Q4) is related to the commodities: "According to the data, how dependable are the links between stock market performance and commodities?" The reply is yes, the markets are vulnerable

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to commodity price fluctuations. Still, the Portuguese one is most exposed regardless of the exchange rate, oil, and gold price pressure than the other two.

The following research question (Q5) relates the markets with interest rates "According to the data, how dependent are stock market performances on interest rates? And, despite having a considerable impact on the markets, interest rates are the variables with the least impact in all the markets.

The final question (Q6) focuses on currency issues: "According to the data, how do currencies and exchange rates affect stock market performances?" Foreign markets particularly feel the impact and influence of exchange rates, maybe due to mostly selling currency to European countries. The Portuguese market seems relatively more resistant.

Conclusion

The results of this research contribute to a better understanding of the risk transmission effects between financial markets and gold and oil commodities markets between 2010-2019, considering the period after the global financial crisis of 2007-2009, and including the sovereign debt crisis, which in the Portuguese case, is associated with the period 2010-2014. The results are of significant interest to the various economic agents, including private and institutional investors, risk managers, and policymakers, who should constantly be consuming information on risk transmission across markets to build efficient risk mitigation models and implement appropriate policies in periods of financial stress.

This research is limited by the scarcity of data after Covid-19, given that it is a crisis that is still ongoing and whose repercussions did not conclude at the end of 2021. Therefore, studies involving this crisis with a longer time horizon should continue to be carried out.

An exciting line of study in the future would be to analyze risk transmission between financial and commodity markets by comparing countries that applied severe measures to combat Covid-19, namely in the extent and duration of lockdowns, and countries where no measures impacting the movement of people were implemented, or which had a very straightforward application of such measures. It would also be of value to conduct the study only for one country/market during the Covid-19 period, analyzing individual periods when the country was in lockdown and periods considered normal in terms of economic activity.

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WPŁYW CZYNNIKÓW MAKROEKONOMICZNYCH NA PORTUGALSKI RYNEK AKCYJNY

Streszczenie: Czynniki makroekonomiczne wpływają zarówno na rynki akcji, jak i na społeczeństwo. Jednak jeden generyczny aspekt badawczy pozostaje bez odpowiedzi: Czy wszystkie czynniki makroekonomiczne wpływają na wszystkie rynki i wszystkie kraje w takim samym stopniu? Niniejsze opracowanie ma na celu przyczynienie się do postrzegania wpływu czynników makroekonomicznych na portugalski rynek akcyjny. Rozważono również, w jaki sposób portugalski rynek akcji reaguje na różne czynniki w porównaniu z północno amerykańskim i japońskim rynkiem akcji, koncentrując się na ostatniej dekadzie. Korzystając z modeli GARCH, wyniki dokumentują, że portugalski rynek akcji odczuwa znaczący wpływ kursu wymiany EUR-USD', podobnie jak ceny ropy naftowej i złota. Rynek japoński na pierwszy rzut oka wydaje się bardziej odporny na wydarzenia zewnętrzne, ale jest również wrażliwy na wahania cen złota i kurs wymiany EUR-JPY.

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Rynek północnoamerykański szczególnie odczuwa presję ze strony kursów wymiany zarówno EUR i JPY, jak i ropy Brent.

Słowa kluczowe: czynniki makroekonomiczne, rynki giełdowe, portugalski rynek akcyjny

宏观经济因素对葡萄牙股市的影响

摘要：宏观经济因素影响着股市和社会。 然而，一个普遍的研究问题仍未得到解答：是否所有宏观经济因素都以相同的强度影响所有市场和所有国家？ 本研究旨在帮助人们了解宏观经济因素如何影响葡萄牙股市。 它还考虑了与北美和日本股市相比，葡萄牙股市如何对各种因素做出反应，重点关注过去十年。 使用 GARCH 模型，结果证明葡萄牙股市受到欧元兑美元汇率的重大影响。 反过来，石油和黄金价格也有重大影响。 乍一看，日本市场似乎对外部事件更具弹性，但它对金价波动和欧元兑日元汇率也很敏感。 北美市场尤其感受到欧元、日元和布伦特原油汇率的压力。

关键词：宏观经济因素，证券交易市场，葡萄牙证券交易市场。