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(Un)conventional rapports of the Italian stock exchange performance (FTSE MIB 40)

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Introduction

The analysis of the rapport between macroeconomic variables and the performance of the stock market has been a matter widely analysed during decades, especially considering the financial and economic implications of the subject. More recently, emerging markets have centred the attention of new research, helped with the appropriate econometric tools in the digital era. Among other facts, it has been assessed the relationship between the performance of the stock markets and the interest and exchange rates (OLWENY & OMONDI, 2011; WAHYU SANTOSA, 2019), the prices of raw materials and metals (KUMAR VERMA & BANSAL, 2021), with high relevance of petroleum (OSKENBAYEV, YILMAZ & CHAGIROV, 2011) and inflation (AKBAR, ALI & FAISAL KHAN, 2012; ONYINYECHI OMODERO & MLANGA, 2019). However, there may be other variables that can experiment a significant correlation with the performance of stock markets, and are less recognised by academia right now. First of all, criptocurrencies are becoming more integrated into the real economy, and this trend poses serious concerns; in fact, regulators are beginning to alert on the systemic risks that such relationships are entailing (ADRIAN, IYER & QURESHI, 2022). Secondly, popularity and influence of politicians can be assessed constantly over an area, thanks to search engine results data, and this information can be related to the performance of stock markets. Finally, recent research has evaluated that favourable results on football games implying a selection of important Italian teams can have positive consequences on the performance of individual stocks, a sort of emotional trend (BOŢOC, MIHANCEA & MOLCUŢ, 2019).

Main objectives

The main objective of this research is determining if criptocurrencies, popularity

of relevant politicians assessed at online level and football games are significant variables that affect, or at least are related, to the performance of the Italian main stock exchange, the FTSE MIB 40 (Borsa di Milano; onwards, MIB). Italy is the third largest economy of the European Union and member of the G7; thus, it is important to evaluate (and increase the awareness) on the relevance of such relationships over the mentioned stock market. The MIB is considered the indicator of growth of the Italian economy, and its analysis may uncover an explanation on the aggregate performance and expectations of large Italian companies, and in so doing of the Eurozone.

Method

The methodology used for this research is and econometric analysis based on thirty variables, where the daily performance of the MIB is the dependent variable, and the 30 independent variables are grouped into six broad categories. Overall, the econometric model relies on an ordinary least squares (OLS) multivariate analysis. The study comprehends approximately five years, from august 2019 to august 2024, and includes 1,219 observations from the daily stock quotations, appropriately selected. Thus, among other factors, this analysed period covers two important cycles of the course of Bitcoin and avoids the extreme volatility and high quotations of criptocurrencies of the months that bounded the 2025 presidential election in the US.

Categories of independent variables
Performance of other European stock markets and the *Spread* of bonds (BTP-Bund).
Performance of US stock markets, expectations of inflation (US) and €-$ exchange rate.
Performance of Asian stock markets and €-Yuan exchange rate.
Performance of commodities, including oil and precious metals.
Quotations of criptocurrencies (in US$).
Online searches of Italian politicians and matches won by Italian teams (selected).

The values of the categories A to E are characterised by units in euros, US dollars or basic points, depending on the type of the market. In contrast, quotations in the last category (F) have a specific idiosyncrasy. Online popularity of politicians has been assessed by the daily qualifications on Google Trends, a database that qualifies between 0 and 100 the intensity of searches on the Google search engine over a bounded period of time and territory. In this case, only two characters have been chosen for this analysis and inside the Italian context: Matteo Salvini and Georgia Meloni, considering their quite continuous presence on the country media during the last five years. On football results, data is provided as a dummy variable (0 or 1)

on the two days after Juventus or the Inter of Milan have won a match of their main masculine football team. Both clubs are at the top of the Italian football league in budget terms and have a strong popularity all over the country. For the analysis, if the cited players attain a victory, then 1 point is assigned to the team; in the case of defeat or draw, no point is registered.

Results and discussion

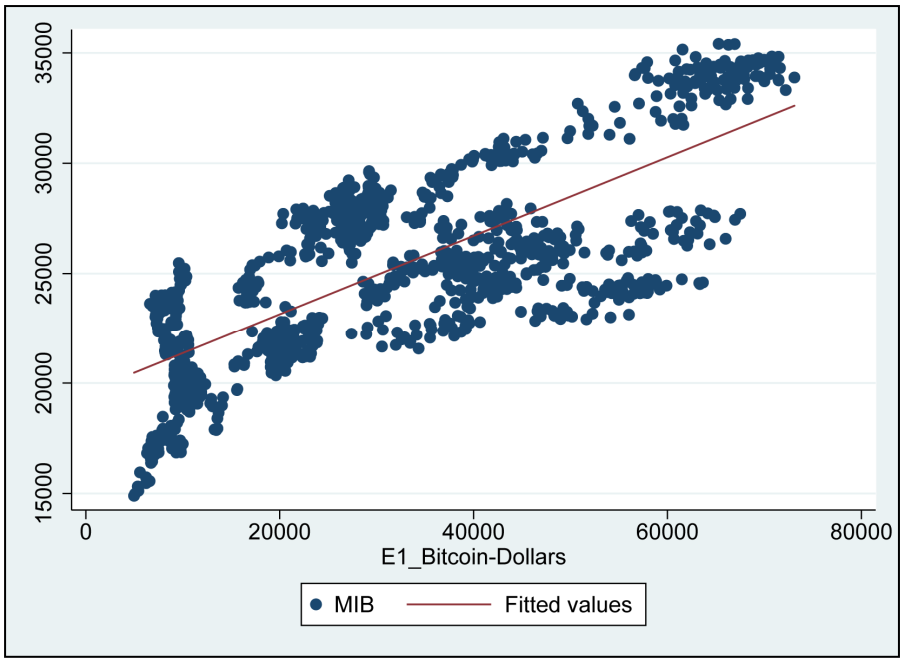
The multivariate econometric analysis has reached an R-squared coefficient of 0.9930 points, which reveals a reliable adjustment between the performance of the MIB and the estimation generated with 30 variables. 17 of them are considered to be statistically significant at a level of 1%, which is remarkable. The ones that attain the larger levels of significance are the performance of the stock exchanges of Paris (CAC 40) and Madrid (IBEX 35). Interestingly, Italy was partially ruled during large periods of time by France and Spain, and the stock exchange reveals even now important ties with such countries. Besides, the analysis has shown crucial correlations with the exchange rate of the euro and the Yuan, the Chinese currency (is it a persisting rapport with the so-called silk route?), even more than the transatlantic euro-dollar. Regarding correlations with stock exchanges outside of Europe, the MIB has a performance strongly connected with the Seoul stock exchange (KOSPI), which is curiously more intense compared to the S&P 500 and the NASDAQ; this fact illustrates an openness of Italy to the Far East more than to the United States, at least in terms of stock exchange quotations. Finally, the oil price (Brent, the European value) has revealed a significant negative association with the MIB levels, a conclusion that has been widely analysed on various stock exchanges all over the world during decades (among them and about Kazakhstan, OSKENBAYEV, YILMAZ & CHAGIROV, 2011).

On the area of «unconventional» variables, the Bitcoin exhibits the largest correlation in the category of criptocurrencies (see the graph below), where 1,000 dollars higher in the quotation of the Bitcoin imply, on average and ceteris paribus, an increase of the Italian stock exchange of approximately 30 points. In this analysis, Matteo Salvini is the only politician with a real rapport with the MIB (Georgia Meloni at least has not shown this in the studied period), and the correlation appears to be negative: 1 point more of intensity in searches at Google trends is translated on minus 2 points on the MIB stock quotations, on average and remaining the other factors constant. This finding would reveal that the mentioned public character has a popularity tied to moments of instability; the analysis is compatible with his role in the Ministry in charge of the public order, becoming more visible under harsher or uncertain circumstances. Finally, in terms of football results, Juventus is the only

team «connected» with the MIB results; a match won implies, on average and ceteris paribus, an increase of the stock performance of 63 points. Such results are coherent with the findings of BOŢOC, MIHANCEA and MOLCUŢ (2019), using a different methodology. On «unconventional» variables, Matteo Salvini and Juventus have levels of significance of 5%, not 1% like others, and their influence is thus assessed more broadly.

The main results of this paper are shown in the table below. The variables with the highest level of significance are highlighted using dark colours in blue and grey:The main results of this paper are shown in the table below. The variables with the highest level of significance are highlighted using dark colours in blue and grey:

Variable	Coefficient	Std. Err.	t	P>|t|	Sig.	[95% Confidence Interval]	
A1_Euro_Stoxx_50	0.821045	0.2349376	3.49	0.000	***	0.3601062	1.281984
A2_CAC40	1.843373	0.1075996	17.13	0.000	***	1.632267	2.054479
A3_DAX	0.250091	0.0603042	4.15	0.000	***	0.1317764	0.3684055
A4_FTSE_100	-0.3485235	0.1222142	-2.85	0.004	***	-0.5883033	-0.1087437
A5_IBEX_35	0.9088178	0.0589981	15.40	0.000	***	0.7930657	1.02457
A6_SMI	0.0425628	0.0714265	0.60	0.551	-	-0.0975733	0.1826989
A7_Spread	-5.762271	0.8546504	-6.74	0.000	***	-7.439063	-4.085479
B1_SP_500	0.4529822	0.2748402	1.65	0.100	*	-0.0862441	0.9922084
B2_NASDAQ_Comp	0.1565543	0.0577191	2.71	0.007	***	0.0433117	0.2697969
B3_Inflationexpec	-12.18573	136.4071	-0.09	0.929	-	-279.8115	255.44
B4_DollarsEuro	-4703.778	1042.619	-4.51	0.000	***	-6749.358	-2658.198
C1_EuroYuan	1059.9	129.4628	8.19	0.000	***	805.899	1313.901
C2_SSE	-0.4220809	0.1471316	-2.87	0.004	***	-0.7107477	-0.1334142
C3_HangSeng	0.0456526	0.016027	2.85	0.004	***	0.0142083	0.0770969
C4_Nikkei	0.007843	0.0138212	0.57	0.571	-	-0.0192735	0.0349596
C5_Kospi	-1.331364	0.16776	-7.94	0.000	***	-1.660503	-1.002226
D1_Oil_Brent	-4.405081	1.631617	-2.70	0.007	***	-7.606252	-1.203909
D2_Gold	-0.0470869	0.2234392	-0.21	0.833	-	-0.4854664	0.3912926
D3_Silver	0.0046984	0.0130712	0.36	0.719	-	-0.0209468	0.0303436
D4_Platinum	-0.4000623	0.3506973	-1.14	0.254	-	-1.088117	0.2879928
D5_Palladium	-0.257239	0.0671477	-3.83	0.000	***	-0.3889803	-0.1254976
D6_Aluminium	0.2112775	0.1100185	1.92	0.055	*	-0.0045746	0.4271297
D7_Copper	348.4323	89.73365	3.88	0.000	***	172.3782	524.4864
E1_BitcoinDollars	0.0299229	0.0031355	9.54	0.000	***	0.0237711	0.0360747
E2_EthereumDollars	-0.1154493	0.0559239	-2.06	0.039	**	-0.2251699	-0.0057288
E3_LitecoinDollars	-3.700152	0.774611	-4.78	0.000	***	-5.21991	-2.180394
F1_Salvini	-2.01382	0.8853252	-2.27	0.023	**	-3.750795	-0.2768445
F2_Meloni	-0.0173639	0.9185492	-0.02	0.985	-	-1.819523	1.784796
F3_Juventus	63.89019	27.10947	2.36	0.019	**	10.70241	117.078
F4_Inter	39.64442	27.33552	1.45	0.147	-	-13.98685	93.2757
Constant	-2714.171	1315.585	-2.06	0.039	-	-5295.3	-133.0422



Positive rapport between the performance of the MIB and the quotations in dollars of Bitcoin.

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Conclusions

The present paper has analysed the linear rapport between the quotations of the FTSE MIB 40, which is the main indicator of the Italian stock exchange, and 30 variables during a period of five years (August 2019 – August 2024). Such values are linked to other stock markets and public debt, exchange of currencies, commodities (including oil and precious metals), criptocurrencies, the online popularity of two persons with relevant public functions in Italy and two football teams with a large number of supporters in the country. Overall, although association does not mean causality, the MIB has revealed strong ties with the European stock markets, exhibiting strong bonds with France and Spain. Apparently, the Italian stock exchange seems to have a greater relationship with China and Korea than with the United States, and this is not surprising considering in the past the silk route and the more recent implications with the Belt and Road Initiative (BRI) fostered by the Chinese authorities. The quotation of petrol in Europe (Brent) has confirmed that the increases in oil prices reduce the expectations on the growth of the economy. Besides, the analysis has depicted a rapport of the MIB with three «unconventional» variables, which are the quotations of Bitcoin, the trends on Google searches of Matteo Salvini and the matches won by the Juventus main masculine football team. Rapports of the MIB with criptocurrencies invite to be attentive on the systemic risks

that the cryptosphere entails.

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Sources of statistical data have been deliberately omitted here because of the limited space available. Last consultation of all cited references on the 19th January 2025.

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