INVESTORS' BEHAVIOUR AND THEIR PERCEPTIONS ON TRADITIONAL ACCOUNTING AND MODERN VALUE-BASED PERFORMANCE MEASURES: EVIDENCE FROM GREECE, PORTUGAL AND AUSTRIA

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Abstract

This study provides insight into investors' perceptions in Greece, Portugal and Austria, on: (a) the sources of information they use to develop their investment strategies and, (b) the importance they attach on traditional accounting and/or modern value-based performance measures for companies' evaluation. Six different groups (professional investors and individual investors from each country) have been examined through a questionnaire survey. The completed questionnaires were up to 434, out of 935 sent, giving a response rate of 46 per cent. Results show that individual investors in Greece and Portugal follow almost the same ways in selecting investment strategies and perform worse, while individual investors in Austria are more closely related to the methods followed by professional investors, revealing quite satisfactory financial performance. Moreover, value-based performance measures are regarded from all investors as an important tool to evaluate companies' strategies.

Key words: Investors Perceptions, Traditional Accounting Performance Measures, Modern Value-Based Performance Measures.

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1. INTRODUCTION

After the stormy fluctuation of the stock prices in the Athens Stock Exchange (ASE) during the years 1999 - 2002, the Composite Share Price Index (CSPI) dropped below the level of 2,000 units from that of close to 6,000 units, a new investing period started at year 2002. From this year onwards, the investors' interest decreased dramatically and the new legislation for transparency and dissemination of information applied for the listed companies in the ASE. Simultaneously, the authorities started a management audit for many listed and trading companies as well. This made the vast majority of investors more careful than they were in the previous years (most of them reported great losses) and led to a decrease in their investment interests. Although investor shares were more than 2,200,000, from the year 2002 onwards the active investor shares (making daily transactions) were less than 20,000. Only in the year 2005 did the ASE CSPI pass the hurdle of 3,000 units and the investor community gradually started to participate in the investment processing again (www.ase.gr).

In Portugal, after the entry to the EU in 1986, the 1990s was a period of economic convergence towards the parameters of more developed countries, which in turn catalysed a significant increase in the Portuguese Stock Market Index (PSMI) until 1999. However, the bursting of technology bubble made the period March 2000 to March 2003 one of the worse bear market ever recorded. The PSMI dropped dramatically to almost 5,800 units in 2002 from the level of 11,960 units during 1999. This caused great losses to investors, especially to individual ones. In 6th February of 2002 the Portuguese Stock Exchange changed its business name to EURONEXT Lisbon due to a merger with Euronext, N.V., a Dutch public company leading the Europe stock markets. EURONEXT Lisbon is now the managing body for both the spot market and the derivatives market as well as renders services to the repos and securities lending market. In 2006, the PSMI succeeded to surpass the 11,000-point mark again (www.euronext.pt).

On the other hand, the Austrian stock market (Wiener Börse) had not been influenced by the market decreases seen on the major international stock markets at the end of 2002. Investors were looking for alternatives and were discovering other investment practices. Austrian companies succeeded in positioning themselves well in Eastern Europe after the EU enlargement, which has had a positive influence on the price trends of the Austrian Traded Index (ATX) stocks. The revival of Wiener Börse attracted the attention of domestic and foreign investors. Since 2003, the cash market on Wiener Börse has undergone a strong

revival. Moreover, Wiener Börse boasts partnerships with eight exchanges in Southeast Europe (e.g. Bucharest, Zagreb, Belgrade, Sofia, Sarajevo, Montenegro, Banja Luka and Skopje). In 2005, Wiener Börse was the first exchange worldwide to enter into a concrete product cooperation agreement with the Shanghai Stock Exchange. At the end of 2005, the two exchanges started the joint publication of the CNX (China Traded Index), which contains 30 Chinese blue chips In July 2004, the ATX climbed over the 2,000-point mark for the first time which illustrated the upturn on the capital market and after breaking through the 4,000-point mark, in May 2006, the ATX hit its last all-time high of 4,344 points. Austrian private investors gradually began to notice the possibilities of investing in stocks. In 1990, stock ownership among the Austrian population was only one per cent. By 1997, the share had risen to four per cent. In the spring of 2006, some six per cent of Austrians owned stocks (www.wienerborse.at). Figure 1 shows the fluctuation of the ASE CSPI, the EURONEXT Lisbon PSMI, and the Wiener Börse ATX and Wiener Börse Index (WBI).



Figure 1: The fluctuation of: PSMI, CSPI, ATX and WBI.

2. THEORETICAL BACKGROUND AND RESEARCH QUESTIONS

2.1. Introduction

Investors have the opportunity to choose among a wide range of investment products, but up to now research on how they express their investment behaviours is still very limited. The exploration and understanding of these behavioural patterns and consistent and specific education and training are regarded as of high importance in order to assist them and their successful financial future. Since financial decisions have become increasingly complex and risky, investors have to protect themselves from all possible difficulties in the stock markets. Additionally, they have to be informed and trained on how all other investment groups are performing in capital markets (Clark-Murphy and Soutar, 2003).

A great deal of financial theory assumes investors are rational wealth maximisers (Peirson *et al.* 1998). They are acting following the basic financial rules and base their investment strategies on the risk-return consideration. However, the level of risk that investors are willing to undertake is not the same, depending mainly on their personal attitudes towards risk. Research in behavioural finance has been of high interest in recent years providing evidence that investors' financial decisions are also affected by internal and external behavioural factors (see: Shefrin, 2000; Shleifer, 2000). As an internal behaviour factor somebody can consider the way an investment decision is presented or framed.

A common analysis of companies' financial statements examines fundamentals to explain and predict their growth and value added potential, but in many cases, current fundamentalbased models fail to explain the past adequately, or predict the future reliably. Largely as a result of these failures, researchers have started to look beyond fundamentals to the role of other 'non-fundamentalist' influences on financial and stock markets including the approach to forecasting taken by practitioners. Goodhart (1998) found that the interaction between professional analysts relying for their views on fundamental analysis and those using the chartist approach influences the market outcome.

Traditional performance measurement systems were developed at a time when decisionmaking was focused at the center of the organisation and responsibilities for decision-making were very clearly defined. According to Knight (1998, p. 173) 'these performance measurement systems were designed to measure accountability to confirm that people *met their budget* and followed orders'. However, during the last two decades it was widely argued (see: Rappaport, 1986; Stewart, 1991) that most of the performance measurement systems failed to capture and encourage a corporation's strategy, producing mostly poor information leading to wrong decisions.

Value-Based Management gained recognition almost simultaneously with the recognition that accounting data were no longer providing sufficient information about the performance of the company. Stern (1974) was the first to present this recognition and to suggest that sophisticated investors should be focused on free cash flows (FCF). Later, academics and

corporate managers, researchers and practitioners, based on net present value (NPV) techniques, FCF, growth opportunities and capital asset pricing model (CAPM), developed the shareholder value (SHV⁴ approach (see: Rappaport, 1986; Stewart, 1991; Black, Wright and Bachman, 1998) and consequently the modern value-based performance measurement.

2.2. Research questions and the proposed model

First of all we try to explore the level of importance attached by investors (professional and individuals) in Greece, Portugal and Austria to different methods of stock valuation and selection. The main concern is to reveal the degree to what investors design their investment strategies based on: fundamental analysis (FA), technical analysis (TA), the combination of both (FA_TA), noise in the market (N), portfolio analysis (PA), newspapers/media (NP_M), instinct/experience (In_Ex), foreign markets (FM) and government policy (GP). Secondly, we focus on fundamentals and examine whether traditional accounting performance measures and/or modern value-based performance measures are appreciated by investors to evaluate companies' implemented and future strategies in Greece, Portugal and Austria. The first research question is a descriptive one while the second one is tested using regression analysis on the following set of equations (models).

Second research question (the model)

To investigate whether traditional accounting performance measures and/or modern valuebased performance measures are appreciated by investors to evaluate companies' implemented and future strategies in Greece, Portugal and Austria, we developed four equations associating the revealed performance to the use of the traditional accounting, and the value-based performance measures for the evaluation of the implemented or future strategies. As a dependent variable we employed the reported performance of the respondents, while as independent variables we used the answers given for the evaluation of the implemented and future strategies in terms of five point Likert (1932) scale.

This model will be tested separately for Greece, Portugal and Austria

$Performance_{t} = a_{0} + a_{1} IMPstrategy_ta_p_measures_{t} + u_{1}$	(1)
$Performance_t = b_0 + b_1 FUTstrategy_ta_p_measures_t + u_2$	(2)
$Performance_t = c_0 + c_1 IMPstrategy_vb_p_measures_t + u_3$	(3)
$Performance_t = d_0 + d_1 FUTstrategy_vb_p_measures_t + u_4$	(4)

⁴ Most well known modern value-based performance measures are Shareholder Value Added (SVA) developed by Rappaport (1986) and Economic Value Added (EVA) introduced by Stern Stewart and Co. in 1991.

whether

Performance_t is the dependent variable revealing the investors' performance

IMPstrategy_ta_p_measurest represents the use of traditional accounting performance measures for the evaluation of the companies' implemented strategies

- FUTstrategy_ta_p_measurest represents the use of the traditional accounting performance measures (ta_p_measures) for the evaluation of the companies' future strategies
- IMPstrategy_vb_p_measures_t represents the use of the value based performance measures (vb_p_measures) for the evaluation of the companies' implemented strategies
- FUTstrategy_vb_p_measurest represents the use of the value based performance measures (vb_p_measures) for the evaluation of the companies' future strategies

3. METHODOLOGY

This study uses the methodology of Maditinos, Šević, Theriou and Dimitriadis (2007) which examines the same research questions in the Greek context in a different time horizon. A questionnaire has been developed based on previous studies of Maditinos, Šević, and Theriou (2007), and Maditinos, Šević, Theriou and Dimitriadis (2007). The response rate is quite satisfactory exceeding the 43 per cent in each case. All research questions are examined using SPSS package. First research question is processed using descriptive statistics and uses mean values, ANOVA and Tukey tests, while the second one is tested using regression analysis where R^2 , F significance, and coefficient significance are examined.

The Sample

The sample is separated in six parts; two for each country under examination. Each part includes professional investors (PI) (e.g. Official Members of Stock Exchange, Mutual Fund Management Companies, Portfolio Investment Companies and, other Investment Companies) or a representative number of individual investors (ININ). The six parts are formed as follow: Greek Professional Investors (GR-PI), Greek Individual Investors (GR-ININ), Portuguese Professional Investors (PT-PI), Portuguese Individual Investors (PT-ININ), Austrian Professional Investors (AT-PI) and, Austrian Individual Investors (AT-ININ). The questionnaire was delivered to the potential respondents as follow: Concerning the professional investors, we contacted all the population (all companies) in the three countries. Therefore, we sent 145 questionnaires in Greece, 113 in Portugal and, 137 in Austria. We received back 79 completed questionnaires form Greece, 51 from Portugal and, 59 from Austria, revealing a response rate of 54.48, 45.13 and, 43.07 per cent respectively.

Concerning the individual investors⁵ we decided to send 20 questionnaires to the brokerage companies randomly selected from each region of the countries under investigation. Therefore, we sent 260 (13 regions X 20) questionnaires in Greece, 100 (5 regions X 20) in Portugal and, 180 (9 regions X 20) in Austria. The returned questionnaires were: 123 for Greece, 43 for Portugal and, 79 for Austria, revealing a response rate of 47.31, 43.00 and, 43.89 per cent respectively. The survey started in December 2006 and completed in February 2007. Table 1 shows the response rate.

	Population					
Country	Sent to PI	Received Question- naires	Response rate (%)	Sent to ININ	Received Question- naires	Response rate (%)
Greece	145	79	54.48%	260	123	47.31%
Portugal	113	51	45.13%	100	43	43.00%
Austria	137	59	43.07%	180	79	43.89%
	395	189	47.56%	540	245	44.73%

Table 1: Response Rate

Some other descriptive statistic results

Table 2 shows the professional investors' position within the company. As we can see most of the respondents are security analysts. Table 3 shows the educational background of professional investors. It is shown that the majority holds a University degree and especially an MSc. Table 4 reveals the educational background of Individual Investors. Respondents hold mostly a bachelor degree; however, the secondary school is also appreciated (higher mean values than MBA/MSc). As for the years of experience, all investors groups have an average trading experience of 11.8 years.

	GR-PI	GR-PI (%)	PT-PI	PT-PI (%)	AT-PI	AT-PI (%)	Average (%)
CEO	12	15.2	6	11.8	6	10.2	12.4
CFO	8	10.1	9	17.6	11	18.6	15.5
Analyst	53	67.1	29	56.9	39	66.1	63.4
Other	6	7.6	7	13.7	3	5.1	8.8
	79	100.0	51	100.0	59	100.0	100.0

Table 2: Professional investors' position within the company (%)

⁵ Only individual investors with trading history of more than 10 years and knowledge of value-based performance measures should answer the questionnaires

	GR-PI	GR-PI (%)	PT-PI	PT-PI (%)	AT-PI	AT-PI (%)	Average (%)
Secondary School	3	3.8	2	3.9	0	0.0	2.6
Diploma	9	11.4	6	11.8	4	6.8	10.0
BA/BSc	21	26.6	17	33.3	19	32.2	30.7
MBA/MSc	38	48.1	23	45.1	24	40.7	44.6
PhD	8	10.1	3	59	12	20.3	12.1
	79	100.0	51	100.0	59	100.0	100.0

 Table 3: Educational Background – Professional Investors

 Table 4: Educational Background – Individual Investors

	GR- ININ	GR- ININ (%)	PT- ININ	PT- ININ (%)	AT- ININ	AT- ININ (%)	Average (%)
Secondary School	37	30.1	16	37.2	15	19.0	28.8
Diploma	9	7.3	3	7.0	6	7.6	7.3
BA/BSc	49	39.8	14	32.6	33	41.8	38.1
MBA/MSc	25	20.3	8	18.6	19	24.1	21.0
PhD	3	2.4	2	4.7	6	7.6	4.9
	123	100.0	43	100.0	79	100.0	100.0

4. RESULTS

Firstly, we examined the level of financial performance of each user group, asking respondents to valuate their performance indicating their opinion on a ten point Likert (1932) scale in terms of 'unsuccessful' to 'successful'. Figure 2 shows that, Austrian professional investors (8.31) and Greek (7.57) and Portuguese (7.35) perform best, followed by Austrian individual investors (6.98). On the other hand, Portuguese (4.30) and Greek (4.43) individual investors are placed last with mean values lower than the average.

Figure 2: The financial performance of each group



4.1 First Research Question: Level of Importance Attached to Different Methods of all Groups

Table 5 shows the level of importance attached to different methods of all six groups (separately and on average). First of all it is shown that professional investors are acting almost in the same way with those from Austria to reveal the highest mean scores in fundamental analysis (4.88), foreign markets (4.51) and government policy (3.93). On the other hand we see that Greek and Portuguese individual investors are attaching almost the same source of information, while the Austrian ones, are closer to Greek and Portuguese professional investors' practices. This is perhaps an evidence for their successful performance in the Austrian stock market. However, ANOVA tests show there are significant differences amongst the six user groups. To examine which group consider each item in the same way, we performed the Tukey test for each item. Results are shown in table 6. Here we could also see that professional investors in Austria consider in higher degree the fundamental analysis and the foreign markets performance, while Austrian individual investors seems to act differently compared to those of Greece and Portugal.

4.2 Second Research Question: The dynamics

To reveal the dynamics of the traditional accounting and the value-based performance measures we asked respondents to indicate *to what degree they use the above measures/techniques for the evaluation of the companies' implemented and proposed (future) strategies.* As we discussed earlier, to investigate it we developed four equations associating the revealed performance to the use of the traditional accounting performance measures, or the value-based performance measures for the evaluation of the evaluation of the implemented or future strategies. Results are shown in table 7.

All regression models (1) to (4) are significant at 1 per cent with significantly high F values. The coefficients are all positive, thus, we can discuss the variations of R^2 in explaining investors' performance. Models (1) and (2) reveal that although traditional accounting performance measures are accepted as important performance measures, their use is almost the same regarding the evaluation of companies' implemented and future strategies. On the other hand, value-based performance measures, (3) and (4), reported higher R^2 both for the evaluation of implemented and future strategies. Thus, we can conclude that value-based performance measures should be considered by investors as significant tools for strategy evaluation and consequently for stock valuation. These results are consistent to those revealed by Maditinos, Šević and Theriou (2007) and, Maditinos, Šević, Theriou and Dimitriadis (2007).

	Item	GR_PI (79)	Rank	GR_ININ (123)	Rank	PT_PI (51)	Rank	PT_ININ (43)	Rank	AT_PI (59)	Rank	AT_ININ (79)	Rank	Mean whole sample (434)	Rank	F	ANOVA Sign. level
1	Fundamental analysis	4.66	1	3.19	1	4.22	1	3.30	1	4.88	1	4.20	1	4.00	1	108.877	0.000***
2	Technical analysis	3.37	6	2.60	8	3.10	5	2.23	8	2.69	6	2.76	7	2.80	7	21.913	0.000***
3	Both Fundamental and Technical	3.99	3	2.63	7	4.04	3	2.21	9	3.88	4	3.32	5	3.30	4	78.605	0.000***
4	Noise in the market	2.04	9	2.80	6	2.31	8	2.49	6	1.31	9	1.70	9	2.17	9	55.093	0.000***
	Portfolio analysis	3.39	5	2.53	9	2.90	7	2.42	7	3.76	5	3.43	4	3.05	5	39.386	0.000***
6	Newspapers / media	2.25	8	2.90	5	2.10	9	2.70	5	1.41	8	1.81	8	2.27	8	60.145	0.000***
	Instinct / Experience	3.37	7	3.13	2	3.06	6	3.05	3	2.46	7	2.80	6	3.00	6	14.637	0.000***
8	Foreign markets	4.38	2	3.11	3	4.16	2	3.09	2	4.51	2	4.10	2	3.83	2	74.313	0.000***
	Government policy	3.44	4	3.10	4	3.20	4	2.86	4	3.93	3	3.70	3	3.37	3	20.297	0.000***

 Table 5: Level of Importance Attached to Different Methods of all Groups

Evaluation is presented in terms of mean values

It is important to notice respondents' views during 1999-2002 in Greece and Portugal (especially the individual ones): Noise in the market, Newspapers / media and, Instinct / Experience were well appreciated with mean values higher than those reported in table 5.

Table 6: Tuke						
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Group		N 122	1 2 10	L	3	
GR_ININ		123	3.19			
PT_ININ		43	3.30	4.20		
AT_ININ		79 51		4.20		
PT_PI		51		4.22		
GR_PI		79			4.67	
AT_PI		59			4.88	_
Panel B Tech	nical Analys	is				
Group	Ν	1	2	3	4	
PT_ININ	43	2.23				
GR_ININ	123		2.60			
AT_PI	59		2.69			
AT_ININ	79		2.76	2.76		
PT_PI	51			3.10	3.10	
GR_PI	79				3.37	
Panel C Both	Fundament	al and Technical	Analysis			
Group	Ν	1	2	3	4	
PT ININ	43	2.21				
GR ININ	123		2.63			
AT ININ	79			3.32		
AT PI	59			0.02	3.88	
GR_PI	79				3.99	
PT PI	51				4.04	
<u>-</u>	01					
Panel D Noise			2	2	4 5	
Group AT PI	<u>N</u>	1	2	3	4 5	_
	59 70	1.31	1 70			
AT_ININ	79	1.31	1.70	2.04		
AT_ININ GR_PI	79 79	1.31	1.70	2.04	2.21	
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Table 6: Tukey HSD^{a,b} – Means for groups in homogeneous subsets are displayed

 Panel A Fundamental Analysis

Group	Ν	1	2	3	
AT_PI	59	2.46			
AT_ININ	79	2.80	2.80		
PT_ININ	43		3.05	3.05	
PT_PI	51		3.06	3.06	
GR_ININ	123		3.13	3.13	
GR_PI	79			3.37	-
Panel H Forei	gn Markets				
Group	Ν	1	2	3	
PT_ININ	43	3.09			
GR_ININ	123	3.11			
AT_ININ	79		4.10		
PT_PI	51		4.16		
GR_PI	79		4.38	4.38	
AT_PI	59			4.51	-
Panel I Gove	rnment Policy				
Group	Ν	1	2	3	4
PT_ININ	43	2.86			
GR_ININ	123	3.10	3.10		
PT_PI	51	3.20	3.20		
GR_PI	79		3.44	3.44	
AT_ININ	79			3.70	3.70
AT PI	59				3.93

Table 7:	Regressions of Performance to Implemented and Future Strategies	
Panel A		

 $\begin{array}{l} Regression \ model \ (1): \ Performance_t = a_0 + a_1 \ IMPstrategy_ta_p_measures_t + u_1 \\ Regression \ model \ (2): \ Performance_t = b_0 + b_1 \ FUTstrategy_ta_p_measures_t + u_2 \\ \end{array}$

Regression model	L	a ₀	a 1	b ₀	b ₁	R ²	F
	Coef.	3.758	0.820			0.107	
(1)	t	(10.218)***	(7.203)***				(51.880)***
	Sign.	[0.000]	[0.000]				[0.000]
	Coef.			3.885	0.843	0.112	
(2)	t			(11.358)***	(7.398)***		(54.724)***
	Sign.			[0.000]	[0.000]		[0.000]

Panel B

Regression model (3): Performance_t = $c_0 + c_1$ IMPstrategy_vb_p_measures_t + u_3 Regression model (4): Performance_t = $d_0 + d_1$ FUTstrategy_vb_p_measures_t + u_4

egression model		c ₀	c ₁	\mathbf{d}_{0}	\mathbf{d}_1	R ²	F
	Coef.	2.645	1.149			0.302	
(3)	t	(9.421)***	(13.676)***				(187.037)***
	Sign.	[0.000]	[0.000]				[0.000]
	Coef.			1.964	1.312	0.413	
(4)	t			(7.526)***	(17.422)***		(303.523)***
	Sign.			[0.000]	[0.000]		[0.000]

Finally, table 8 shows, among others, that in Greece (0.355) and Portugal (0.399) value based performance measures are considered as very important tool for evaluation of companies' future performance, while although in Austria it is considered as an important factor, the

mean value is significantly lower (0.139). This means perhaps that in Austria investors are combining more alternatives to evaluate companies and, they are not entirely focused on specific measures, which perhaps are considered as modern ones.

Mode		GR ALL	PT ALL	AT ALL
(1)	IMPstrategy_ta_p_measures	0.105	0.063	0.032
(2)	FUTstrategy_ta_p_measures	0.103	0.090	0.034
(3)	IMPstrategy_vb_p_measures	0.281	0.227	0.060
(4)	FUTstrategy_vb_p_measures	0.355	0.399	0.139

Table 8: Regressions of each country (all models)

Evaluation is presented in terms of mean values

5. CONCLUSIONS

Evidence provided from the present research revealed the following. Firstly, in general, professional investors in Greece, Portugal and Austria perform best followed by the Austrians individual investors. However, Greek and Portuguese individual investors' financial performance reported below average with significant losses. One important reason for this result is that during the years 1999-2002 the number of brokerage firms suddenly increased dramatically in these countries and were easily accessible in almost every part of the country. Many of those brokerage firms were managed by people who were almost totally uneducated or speculative and consequently led individual investors to wrong decisions. This result may suggest that individual investors in countries with the same characteristics as Greece and Portugal should follow the investment practices of Austrian individual investors who rely more on fundamental analysis, foreign markets performance and government policy and lesser on noise in the market, newspapers/media and technical analysis.

Since the stock markets are based on expectations, markets discount events that are going to happen in the future. It is proved that Greek and Portuguese capital markets (emerging markets) followed the market paradigm of countries that discounted such important expectations and events with considerable fluctuations of their stock returns. Thus, this study gives significant information to countries that are going to follow the monetary policy of Greece and Portugal (e.g. countries that are going to join the Euro zone) to avoid, if possible, the bad performance of their stock markets.

Finally, exploring the dynamics of the traditional accounting and value-based analysis we suggest that: (a) while traditional accounting performance measures are important tools for

the implemented and future companies' strategies, they do not outperform value-based performance measures and, (b) value-based performance measures are considered as important tools for the evaluation both of implemented and future companies' strategies, which reveal the instinctive force of these measures/techniques and the significant role they are going to play in the future. However, the degree of usage of these measures should be reconsidered.

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