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ournal of economic behavior

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EDITORIAL

What do we know about the structure of economic behavior? After decades of studies and theory building a cleavage is still persisting between the neoclassical approach to economics, which assumes that decisions are guided by rationality and related to the prospect of future rewards, and approaches that recognize the social and psychological bases of economic behavior, since decisions are made by humans, individually or as part of organizations.

The economic perspective assumes that decision-makers are rational and consistent with the objective of maximizing a subjectively expected utility; the behavioral perspective adds more realistic parameters related to the influence of social norms, emotions, environmental factors, taking into account that humans' powers of computation and cogitation are limited, and people are not consistent.

Terminology itself should be clarified: the concepts of "utility", "rationality", "trust", and also "intelligence", do not have universal meanings depending on the influence of ethics, social rules, physiological factors and even "visceral factors"¹ (e.g. hunger, thirst, sexual desire, anger, fear).

Of course, when interpreting economic phenomena, the assumption of purely rational and coherent behavior is unlikely to be realistic. Adam Smith, who prior to introducing the concept of the "invisible hand" published in 1759 a book entitled "The Theory of Moral Sentiments"², stated that to make economy improve, philosophers are required.

To understand the economic behavior, a multidimensional, interdisciplinary approach becomes necessary, the distance between different research communities must be reduced and opportunities from the integration of research methodologies must be pursued. Sociology, political sciences, psychology, neurosciences, biology, anthropology, can contribute in completing the analytical perspectives that are needed for the exploration of human behavior.

The papers collected in this issue of The International Journal of Economic Behavior (IJEB) contribute in continuing the construction of the complex mosaic of concepts and tools that is necessary for the study of economic behavior. A special thanks goes to Elena Druica and Viorel Cornescu, former Editors-in-Chief of the Journal, for the intuition they had in starting this challenging initiative, of which I have the honor of holding the reins.

Mlambo's paper focuses on expectations, analyzing merits and demerits of the two main expectations formation hypotheses, adaptive and rational expectations. The author concludes that the adaptive expectations hypothesis can be considered more appropriate for short-term

¹ Loewenstein G. (1996), "Out of Control: Visceral influences on Behavior", *Organizational Behavior and Human Decision Processes*, 65(5003), March, pp. 272-92.

² Smith, A. (1759/1892). *The Theory of Moral Sentiments*. New York: Prometheus Books.

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analysis when data and information are scarce. Rational expectations, being based on broader and longer learning experience and data, can be considered appropriate for more comprehensive and longer-term planning.

The paper of Omran, Abdulbagei and Gebril help us to understand which are the critical success factors for the construction industry, in order to address investment choices in this sector. Based on the case of the Libyan construction industry, a quantitative analysis highlights ten critical factors, some of which are objective and some subjective, that impact on construction projects.

In Omran, Bazeabez, Gebril and Wahm's work, a study on the characteristics of managers is presented. Based on an empirical research on project managers, the article analyses and ranks a series of characteristics related to personality, attitudes and skills.

The measurement of service quality is the subject of Oyeniyi and Abiodun's paper, who conducted an empirical research on department stores in Nigeria. They found a combination of subjective and objective key factors affecting customers' satisfaction, among which are reliability, personal interaction, problem solving and physical appearance of the store.

Del Baldo and Aureli focused their study on the mechanisms of cooperation among small and medium-sized enterprises for internationalization strategies. They analyzed a particular form of cooperation recently adopted in Italy, the "network contract". Results indicate that the network contract is not the most suitable instrument to promote the internationalization of smaller firms, although internationalization may emerge as a secondary result of this type of inter-firm relationship.

Sokolova's paper provides an efficiency analysis of policies of interest rate reduction launched by the authorities of many Western countries in response to the global economic crisis of 2008. Results show that interest rates adjustments can be harmful for the whole economy, and in particular for financial institutions.

Finally, Erfani and Islam examine how European Union (EU) membership impacted the financial performance of firms within ten new EU members states of Central and Eastern Europe. Econometric methods were used to determine the efficiency and profitability of these companies. The paper empirically demonstrates that firms' profitability has increased since their countries joined the EU.

Heartfelt thanks are due to the Authors, Reviewers and the members of our Editorial Board for contributing with their competencies and efforts to the completion of this issue.

Fabio Musso Editor-in-Chief

ADAPTIVE AND RATIONAL EXPECTATIONS HYPOTHESES: REVIEWING THE CRITIQUES

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Abstract

The pervasiveness of expectations in economic analysis has created significant discussion on the merits and demerits of the two main expectations formation hypotheses, adaptive and rational expectations. This paper gives concise outlines of the two hypotheses and reviews their respective critiques to assess their validity. We outline that the two hypotheses have essentially been regarded as antitheses of each other in economic discourse. In this discourse, exaggerated theoretical intents and criticisms are evident. Inconsistencies among the advocates of rational expectations are also evident, with many of these inconsistencies manifesting themselves in spirited attempts to defend the hypothesis. In the end rational expectations and adaptive expectations are both based on some historical data and learning from experience. While evidence on the usefulness of the models is mixed, it is concluded that both models are beneficial. The adaptive expectations hypothesis may be considered an ad hoc approach, more appropriate for short-term expedient analysis when data and information are scanty. Rational expectations, being based on broader and longer learning experience and data, may be considered appropriate for more comprehensive and longer-term planning. It remains that the rational expectations hypothesis is not per se a model of expectations formation, but a concept pointing to the need for more systematic modeling.

Keywords: Adaptive expectations; rational expectations; forecasting; belief; uncertainty

1. Introduction

Expectations have become central and pervasive to economic analysis (Gertchev, 2007; Figlewski and Wachtel, 1981). This is partly due to the role they play in current decisions. Modeling of expectations has also gained in importance especially in contemporary macroeconomics. Expectations are unobservable – they exist or are formed in the mind and are abstract. Expectations formation models are arbitrary assumptions and their use is categorized as a 'positivism' approach. This methodology does not seek the truth about a hypothesis (assumption or model), but whether or not it works. There are various expectations models; however, the two most common ones are adaptive expectations and rational expectations, with the latter being the standard in mainstream economics. There was a radical shift of inclination in

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economic discourse from adaptive expectations hypothesis to rational expectations hypothesis, which started in the 1970s when the latter was incorporated into the new classical economics, and continued in the 1980s under the new Keynesian macroeconomics (Vercelli, n.d.). The fact that the rational expectations hypothesis is a 'received doctrine' is also stated by Lovell (1986, 110).

To test models of expectations formation some kind of measured expectations surveys need to be conducted (Figlewski and Wachtel, 1981). Such surveys that yielded individual responses were conducted by Joseph Livingston over a period of over thirty years. Application of Livingston's data in applied studies as well as in the actual testing of expectations models has yielded mixed results regarding what the data shows of expectations formation, with some concluding that it supports rational expectations, some adaptive, yet some extrapolative expectations. Figlewski and Wachtel attribute the contradictory results to the fact that most studies did not utilize individual expectations responses, but average expectations, which ignore the distribution of responses across respondents leading to specification bias.

There is significant discussion on the merits and demerits of the two main expectations formation hypotheses. Critiques have touched both the theoretical constructs and empirical evidence. Each of the hypotheses has a significant share of strong advocates. The purpose of this paper is to give a brief outline of the theoretical constructs, review the main theoretical and empirical arguments for and against the hypotheses and assess the validity of those arguments. The paper shows that the two hypotheses have stood in opposition to each other in economic discourse, the question being: which one is the better model in explaining expectations formation? However, it is also clear that in this discourse some authors have gone beyond initial intent to ascribe greater purpose to these hypotheses than they theoretically could claim.

2. An Outline of the Adaptive and Rational Expectations Hypotheses

2.1 Adaptive Expectations

In simple terms, we may define adaptive expectations as the way of forming expectations in which the future value of the variable of interest is solely dependent on its past values. From the diversity of literature on adaptive expectations (for example Chow, 2011; Gertchev, 2007; Gujarati, 1988; Pearce, 1986), we may formulate this hypothesis in three equivalent forms, which are given by equations (1) to (3):

$$p_{t}^{e} = p_{t-1}^{e} + \delta \left(p_{t} - p_{t-1}^{e} \right) \tag{1}$$

$$p_t^e = \delta p_t + (1 - \delta) p_{t-1}^e \tag{2}$$

$$p_{t}^{e} = \delta p_{t} + \delta (1 - \delta) p_{t-1} + \delta (1 - \delta)^{2} p_{t-2} + \delta (1 - \delta)^{3} p_{t-3} + \delta (1 - \delta)^{4} p_{t-4} + \delta (1 - \delta)^{5} p_{t-5} + \dots$$
(3)

where p_t is actual current price (we shall use price as the variable of interest in this section for demonstration purposes), p_t^e is the future expected price (price expectations) held in the current period (t) and δ is the coefficient of revision of expectations (or just coefficient of 📲 ournal of economic behavior = vol. 2, 2012 =

expectation) that is normally assumed to lie between 0 and 1 (the denotation here is consistent with Gujarati, 1988). Below, the author demonstrates the equivalence of the three equations.

Expanding the RHS of (1) and factoring out the lagged expected price variable we get equation (2):

$$p_t^e = \delta p_t + (1 - \delta) p_{t-1}^e \tag{2}$$

We successively substitute for the lagged expectation variable on the RHS of (2):

$$p_{t}^{e} = \delta p_{t} + (1-\delta) [\delta p_{t-1} + (1-\delta) p_{t-2}^{e}]$$

$$\therefore p_{t}^{e} = \delta p_{t} + \delta (1-\delta) p_{t-1} + (1-\delta)^{2} p_{t-2}^{e}$$

$$p_{t}^{e} = \delta p_{t} + \delta (1-\delta) p_{t-1} + (1-\delta)^{2} [\delta p_{t-2} + (1-\delta) p_{t-3}^{e}]$$

$$\therefore p_{t}^{e} = \delta p_{t} + \delta (1-\delta) p_{t-1} + \delta (1-\delta)^{2} p_{t-2} + (1-\delta)^{3} p_{t-3}^{e}$$

$$p_{t}^{e} = \delta p_{t} + \delta (1-\delta) p_{t-1} + \delta (1-\delta)^{2} p_{t-2} + (1-\delta)^{3} [\delta p_{t-3} + (1-\delta) p_{t-4}^{e}]$$

$$\therefore p_{t}^{e} = \delta p_{t} + \delta (1-\delta) p_{t-1} + \delta (1-\delta)^{2} p_{t-2} + \delta (1-\delta)^{3} p_{t-3} + (1-\delta)^{4} p_{t-4}^{e}$$

Thus:

$$p_{t}^{e} = \delta p_{t} + \delta (1 - \delta) p_{t-1} + \delta (1 - \delta)^{2} p_{t-2} + \delta (1 - \delta)^{3} p_{t-3} + \delta (1 - \delta)^{4} p_{t-4} + \delta (1 - \delta)^{5} p_{t-5} + \dots$$
(3)

The equivalence of the three adaptive expectations equations can also be proved (in reverse) by applying the Koyck transformation process to equation (3).

Thus, under adaptive expectations the expected value can be viewed as a sum of the immediate past expectation and the weighted expectational error (equation 1). In this formulation, it is clear that the individual is making his new expectations by using his current observed expectational errors to revise his previous expectations (Gertchev, 2007); hence, Gujarati (1988) also calls the adaptive expectations hypothesis progressive expectation or error learning hypothesis. Note that this formulation implies that if there was perfect foresight in the previous period's forecast (that is, zero expectational error), the previous forecast would be maintained (Lovell, 1986) perpetually until there are changes in exogenous factors affecting actual price. Thus, (as with rational expectations) this hypothesis implicitly argues that fulfilled expectations portend equilibrium. Equation (2) defines adaptive expectations as the weighted sum of the current value and the previous expectation (what it was expected to be), with the weights adding to unit. Equation (3) defines adaptive expectations as a process in which the expected value is formed as a weighted sum of all the past values of the variable, with the weights geometrically decreasing as we look further into the past. The economic agent in this hypothesis thus forms their expectation as a sample mean of historical values (Chow, 2011).

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The derivation process for equation (3) shows that all past expectations and past values of the variable of interest are embodied in its current expectations, a rather different and more reasonable view than Gertchev (2007)'s view that it implies the agent is sensitive to all historical prices. It is impossible for the agent to be sensitive to all the past prices individually; rather it is that the past prices are already embodied in the current expectations through previous expectations. It may be argued that the key relationship issue is the value of the coefficient of expectation, since it is the one that relates both past prices and past expectations to current expectations.

Using equation (2), variants of adaptive expectations can be obtained by assuming that the coefficient of expectation is zero, 1 or lies between the two limits. Thus, we have:

Autonomous expectations: when $\delta = 0$, $p_t^e = p_{t-1}^e$ (4)

Static expectations: when $\delta = 1$, $p_t^e = p_t$

Induced expectations: when $0 < \delta < 1$, $p_t^e = \delta p_t + (1 - \delta) p_{t-1}^e$ (2)

(5)

Induced expectations are the general formulation of adaptive expectations, and therefore the rest of the paper shall use adaptive expectations to refer to induced expectations.

2.2 Rational Expectations

Unlike adaptive expectations, it is not simple to construct a definition of rational expectations that captures all the variations of the concept in economic discourse. Conceptual diversity is as pervasive as the popularity of the hypothesis in mainstream economics. An attempt to define it would be, the expectation formation process in which optimal (rational and efficient) use is made of all available and relevant information that eventually eliminates systematic forecasting errors. This then makes expectations correct and equivalent to the prediction of the relevant theory (Pearce, 1986; Alejandro, 2008; Lane, n.d.). Thus, unlike adaptive expectations, rational expectations use information on all relevant variables.

Assuming that, besides the variable of interest (say, Y), other relevant (related) variables are X and Z. A mathematical outline of this hypothesis would be (Lane, n.d.; Agba, n.d.):

$$Y_t = a_0 + a_1 Y_{t-1} + a_2 X_{t-1} + a_3 Z_{t-1} + U_t$$
(6)

where U_t is a random variable. The values of all the lagged variables are known at the time of forecasting, which is at the end of period t-1, while the value of the random variable is only known at the end of period t.

Taking mathematical expectations of (6)

$$E_{t-1}(Y_t) = a_0 + a_1 Y_{t-1} + a_2 X_{t-1} + a_3 Z_{t-1} + E_{t-1}(U_t)$$
⁽⁷⁾

 $E_{t-1}(U_t) = 0$, if U is truly random. Thus:

$$E_{t-1}(Y_t) = a_0 + a_1 Y_{t-1} + a_2 X_{t-1} + a_3 Z_{t-1}$$
(8)

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Thus, rational expectations are the true mathematical expectation of the variable of interest conditional on information on all other related variables known (Lane, n.d.; Muth, 1961, as cited in Agba, n.d.). Muth (1961, 316) contends that since expectations are "informed predictions of future events, (as a first approximation, they) are essentially the same as the predictions of the relevant economic theory". A more precise rephrasing would be, "expectations of firms (or, more generally, the subjective probability distribution of outcomes) tend to be distributed, for the same information set, about the prediction of the theory (or the 'objective' probability distribution of outcomes)" (Muth, 1961, 316). Indeed, the RHS of (8) is a simple predictive model. Subtracting (8) from (6) gives the random variable, which is independent of the other variables (Lane, n.d.; Muth, 1961, as cited in Lane, n.d.), and represents surprises or news (something that agents did not anticipate). Its value is actually equal to the expectational error. That is:

$$Y_{t} - E_{t-1}(Y_{t}) = U_{t}$$
(9)

The rational expectations hypothesis does not argue that the random variable will always have a value of zero – that is, there is not always perfect foresight (Lane, n.d.; see Levine, 2012a and Muth, 1961). However, because the expected value of the random variable is zero, it means that on average the expectations will be correct. (Lane, n.d.) argues that the random variable has the least variance compared to other forecasting models, which makes rational expectations hypothesis the most efficient expectations formation process. It may be noted that the hypothesis implies that expectational errors can be eliminated by more information, hence the argument that theories based on rationality are inconsistent with actual phenomenon to the extent that they do not incorporate enough rationality (Muth, 1961). If the extreme assumption were made that there is complete information, then we would have perfect foresight (Pearce, 1986).

There are three major variations of the rational expectations concept (Gertchev, 2007). These are, first, that the individuals' expectations are heterogeneous, but on average equate to what the relevant economic model would predict. Two, the individuals' subjective probability distributions concerning the future are homogeneous and equal to the objective distribution. Three, in expectations formation, agents seek to maximize the total net benefit of obtaining and processing information by acquiring and processing information up to the point where the marginal cost of doing so is equal to the information's marginal benefit. Variation three, without claiming that equivalence between expectations and model prediction will be achieved, leaves it as a possibility, so that this may be identified as the common feature of the three and the main defining characteristic of rational expectations.

Three rationalizations or justifications of the rational expectations hypothesis have been advanced (Gertchev, 2007). The first one is an extension of human rationality, and argues that systematic expectational errors are eliminated over time because rationality embodies individual purposeful behavior or intentionality. That is, "If the same errors repeat over time, the individual could not be considered fully rational" (p.318). The second rationalization, which is associated with Lucas (1983a) (as cited in Gertchev, 2007), seeks to make rational expectations an imperative for rational economic agents. It states that a rational economic agent, in making decisions affecting his/her present and future, must in regard to unknown random

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variables, formulate a subjective joint probability distribution. The implication of this position is that situations of risk can be handled in economic theory by applying Muth's hypothesis, and that uncertainties render economic theory of no value in explaining social phenomena. The third rationalization states that rational expectations are always fulfilled, and the fulfillment of expectations is an equilibrium state.

3. Reviewing the Critiques of the Hypotheses

3.1 Adaptive Expectations Critique

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The single most significant merit of the adaptive expectations hypothesis is that it is easy to handle (Pearce, 1986), since it requires only past data on the variable of interest and not on any other variables. However, this very assumption that expectations are formed based on historical data on the variable of interest has been found to be less logically satisfactory than alternative assumptions that have formed the basis of the competing hypothesis of rational expectations. Gertchev (2007) notes that for the criticism that adaptive expectations do not fully account for individual's rationality, the hypothesis of rational expectations has gained predominance over it.

Gertchev (2007) argues that essentially adaptive expectations boil down to historical data, so that to assume that they affect reality is simply to assume that history, and not expectations, affects reality, which removes the forward-looking attitude. However, this criticism loses its validity in two respects. Expectations are thoughts, and thoughts cannot be divorced from experience. This criticism also looks at expectations as a process of influencing the future rather than a process of estimating the future. Expectations formation models focus on how the information gap represented by a future that is yet to become actual is filled, not how the future is formed. To argue otherwise is to say that when expectations about the future are gloomy rational economic agents have purposed to achieve a gloomy future.

However, two very valid criticisms of adaptive expectations are highlighted by Gertchev (2007). First, the formulation of adaptive expectations is *ad hoc* in that it exogenously postitulates the coefficient of expectation. It may be noted that there is no objective reason to postulate that the value of δ lies between 0 and 1, and that it is a constant. Gertchev notes in a footnote that in Khan (1977) a model with adaptive expectations in which the coefficient of expectation is variable is presented. It has also been shown empirically that values of the coefficient may not be the same for various groups of economic agents (Mlambo, 2011), individuals (Figlewski and Wachtel, 1981) and over time (Figlewski and Wachtel, 1981). Second, some have noted that the errors of expectation may be correlated and the expectations may lag behind actual phenomenon when trends change. Changes in the trend of a variable of interest may emanate from the behavior of related variables, which variables may be affected by broader factors, for example, the recent global financial crisis. Thus, the expected value of a variable will not only depend on its own past values, but also on the past, present and expected future values of other related variables.

Strong empirical arguments for adaptive expectations (versus rational expectations) are advanced by Chow (2011). Chow believes that the rejection of adaptive expectations in favor of rational expectations in mainstream economics has no empirical basis. He sets out to show that the adaptive expectations hypothesis is supported by theoretical statistical reason and econometric evidence. The statistical reasoning is that, in time series data, a mean in which observations that are more recent are given greater weights is used to estimate a future value 📕 ournal of economic behavior = vol. 2, 2012 =

of the variable. Thus, the adaptive expectations hypothesis is simply assuming that "economic agents behave like good statisticians" (Chow, 2011, 5). However, this argument apparently has little merit because it is based on the assumption that statistical methods cannot be questioned, and that on average economic agents are experts in statistics.

In advancing the empirical argument, Chow (2011) uses an applied econometric study of stock prices for blue chip stocks in Taiwan over three decades (1971-2010). He estimates the model in which log stock price is a linear function of log dividend and expected rate of growth of dividends. He uses the mean of the rates of growth over the last three years for the expected rate of dividend growth. The results obtained (by retrospective prediction) are found to be consistent with actual Taiwan data for more than 50 companies over the three decades. Chow (2011) refers to four other studies (in Chow, 1989 and 2007, both cited in Chow, 2011) on stock price modeling, all of which strongly support adaptive expectations. However, the induced adaptive expectations in Chow (1989) have limited lags, which makes them differ significantly from an infinite sum as generally represented by equation (3).

Mills (1961) argues that the position taken by Muth (1961) that it is best to assume economic agents know the probability distribution of the variable to be predicted is an extreme position. Using a variable's past values to predict its future values is a more moderate position, for example adaptive expectations. In summarizing Mills' views, any stability model applying adaptive expectations will result in an expectation time path that is similar in dynamic characteristics to that of the actual values. Second, if the initial expectations and the initial actual value coincide (that is, there is initial equilibrium) the expectations and the actual path will also coincide. Third, the time path of expectational errors from this application also exhibits the same dynamics. Fourth, the time path of expectational errors has a mean of zero – if the actual time path is converge, but towards the intertemporal equilibrium, the expectational error path will also converge, but towards zero. In the adaptive expectations model, this implies, when the market is in disequilibrium, expectations are wrong in a clear systematic way. An intelligent agent can identify the pattern and then adjust his expectations accordingly.

In summary, the paper makes a number of findings regarding the adaptive expectations critique. The mathematical derivation of equation (3) of adaptive expectations clearly demonstrates how present expectations are linked to past expectations and eventually to past values. It is clearly shown that all past expectations and past values of the variable are embodied in present expectations, but does not imply that the agent is sensitive to them individually as suggested by some literature. Some critics have regarded expectations as a process of influencing rather than of estimating the future (the latter is the case). This has created unnecessary criticism of the adaptive expectations as merely a statement that history affects reality. The argument of adaptive expectations is, instead, that history affects thoughts or beliefs about the future. The restriction of the coefficient of expectation to between 0 and 1 implies that adaptive expectations are at maximum equal to static expectations. However, there is no objective reason to postulate such a limit. This suggests the need to allow the value of the coefficient of expectation to vary freely. Adaptive expectations have been supported from a theoretical perspective by the argument that they are consistent with the way statisticians estimate future values from a time-series of past values. Besides assuming that all agents are good statisticians, this argument also assumes without testing that conventional statistical methods of estimating the future are a correct representation of the forward-looking behavior of agents.

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3.2 Rational Expectations Critique

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Muellbauer (1981) concludes that employment decisions are consistent with rational expectations and not adaptive expectations. Empirical support is also found in the study of the agricultural market by Goodwin and Sheffrin (1982), in which they apply Muth (1961)'s rationality in the estimation of supply and demand for chicken broiler. However, cumulative empirical evidence from several studies reviewed by Lovell (1981) does not support the hypothesis ahead of other expectations formation hypotheses, as some evidence is supportive while some clearly show violation of the hypothesis. Several authors have tested rational expectations using Joseph Livingston's data (Figlewski and Wachtel, 1981). Figlewski and Wachtel use the formulation of inflation rational expectations given by equation (10) (the denotations have been changed slightly). They then use regression equation (11) to test if the

forecasts are unbiased (that is, if $E(u_t) = 0$), which would indicate rationality:

$$\pi_t = \pi_{t-1}^e + \epsilon_t \tag{10}$$

$$\pi_t = a + b\pi_{t-1}^e + u_t \tag{11}$$

where π_t is actual inflation in period t, π_{t-1}^e is expected inflation held in period t-1 for

period t, \in_t and u_t are random error terms. Equation (10) is indicating that rational expectations are essentially the same as the actual values except for some random error. To test for rational expectations, they test for the joint hypothesis that a = 0 and b = 1 in the regression equation. Using average expectations data the rational expectations hypothesis is rejected. When individual responses are used and panel data approaches applied, still they conclude existence of forecast bias. They go on to test whether readily available and relevant information was used in expectations formulation (as the second test of rationality) using the regression:

$$\pi_{i,t-1}^{e} - \pi_{t} = \beta_{0} + \beta_{1} \left(\pi_{i,t-2}^{e} - \pi_{t-1} \right)$$
(12)

They find the coefficients in (12) to be significant; meaning the information on past errors was not fully used. Figlewski and Wachtel (1981) conclude that adaptive expectations best explain inflation expectations.

This section has so far shown that empirical evidence on rational expectations has been inconclusive. However, much debate is centred on theoretical arguments. There are contradictions in the understanding of the concept of rational expectations among its advocates. For example, the general understanding that rational expectations is an optimal process that eventually eliminates systematic errors does not seem to be consistent with the other view in Levine (2012a and b) that rational expectations are born out of uncertainty. The question that arises is: can systematic errors be eliminated where uncertainty is pervasive? The acknowledgement that uncertainty is a pervasive feature of economics carries the implication that it is perpetual.

The presentation of rational expectations in Levine (2012a and b) sounds like error learning hypothesis, for learning involves making errors and learning from them. Thus, it is next to adaptive expectations, differing only in: (a) the length of learning time and the frequency of

adaptations; and (b) the variable scope. In adaptive expectations, the learning time is shorter and adaptations are more frequent, while rational expectations may be regarded as more long-term adaptive processes. Lane (n.d.) argues that agents do not automatically know the variable generating process, but learn it through experience over some period and eventually know it so that the hypothesis is best regarded as a long-run concept. However, because of different learning abilities and starting points some agents will be in the long-run while others will be in the short-run. At any given point in time, some expectations will be rational while others will be non-rational. The average of rational and non-rational expectations is not exactly equal to rational expectations. This is further complicated by the fact that rationality itself, hence the optimality of outcomes, are subjective (vary from individual to individual and from group to group).

Muth (1961) asserts that average expectations should be the same as the predictors of economic theory, or there will be information arbitrage. However, we may note that arbitrage between the professional forecaster and the average firm is never complete. This is evidenced by the fact that price-forecasting services continue to exist in the form of business and economic consultancies. The argument of the equivalence of expectations to the predictions of economic theory apparently turns every individual in the economy into an economist. That is, it assumes that on average economic agents can analyze the complex economic relationships among various economic variables consciously or subconsciously and produce the same results that a trained economist would produce using economic models. If this were true, there would be no value in economic training. This is refuted by the fact that such training continues to exist.

The premise behind the theory's assertion that there will always be equilibrium (that expectations will always be correct) has been refuted in that such correctness cannot always exist for two reasons - it is an 'eventual' outcome of learning from systematic errors, and same errors may be repeated because of changed conditions (Gertchev, 2007). However, Gertchev's argument that correctness of expectations is not necessarily equilibrium would imply that rational expectations, which by definition are optimal, do not result in optimal outcomes, even when they are correct. This apparently would amount to saying that correct and optimal expectations are not important in making optimal decisions, and by extension, in achieving optimal economic outcomes. This is contrary to the essence of holding expectations in general, and correct expectations in particular. Expectations are information, or more precisely, an attempt to fill an information gap in current decision-making process, and like any information used in planning, accuracy matters for optimality of decisions and outcomes. If on average agents are correct in all expectations (all variables that they are forecasting), equilibrium must be inevitable. Lack of equilibrium must be an indication that expectations were not rational enough.

Levine (2012a) simplified the rational expectations hypothesis to, 'if people believe this forecast it will be true'. However, we may note that in this formulation the hypothesis is merely the argument that belief is self-fulfilling. While expectations are thoughts and indeed beliefs, it defeats the whole idea of expectations modeling, if all that will be required is to hold just any belief we want. Why then, as rational economic agents, do we not just agree to believe the best to achieve the best? Such formulation has resulted in Gertchev (2007)'s criticism that the advocates of the rational expectations hypothesis ultimately claim that thoughts become reality ("whatever individuals think will happen does happen", p.324; "subjective beliefs alone determine objective reality", p.325). In such reasoning expectations essentially become

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equivalent to intentions.

Avalid criticism is that the rational expectations hypothesis has little to contribute to economic discourse in that at the end it hinges upon the existence of some other model that describes objective reality – the actual model that does the prediction, which means that economic theory itself is developed independently of expectations (Gertchev, 2007). If all that the hypothesis says is that the future will conform to the predictions of the relevant economic model, what does the hypothesis itself really add to our understanding of expectations formation? Does it not become redundant, since the relevant model implicitly makes the same claim? Where we have two competing models, the hypothesis does not tell us which one is better.

The rational expectations hypothesis is also critiqued by Elliot (1986), who alleges that in the rational expectations context equilibrium is maintained in the face of changes (in policy) because the changes are assumed to be anticipated accurately so that behavior adjusts accordingly. He argues that uncertainty which faces agents in free markets, dynamism of the market and the existence of competition make the achievement of equilibrium an impossibility – certainly, some agents' plans will not be realized and there will be readjustments (disequilibrium). A market in disequilibrium cannot convey the correct information and this further frustrates rational expectations. Thus, with rational expectations assumed, for policy to be effective (that is, for change to happen), the policy maker must make it impossible for agents to anticipate policy, that is, to keep them guessing, which ultimately means no optimal policy is made. The policy maker must not only anticipate the actions (responses) of other agents but also their anticipations of him or her, and so on. In such a situation, there will be incentive on the part of each individual to hold non-rational expectations. The effect of public predictions that are believed can be viewed similarly with those of policy announced in advance of implementation (see Muth, 1961; Levin, 2012a).

Lane (n.d.) comes out as a strong defender of the rational expectations hypothesis. He argues that since expectations play a major part in economic decisions, which decisions are assumed rational, they must themselves be rational (see also Muth, 1961). The question he seeks to answer is whether the rational expectations hypothesis is the best way to model expectations. When we talk of the best way to model an actual phenomenon, of which expectations is one, we are in the positive side of economics. We are not asking if it would be the best way to describe how they actually formulate expectations. Lane responds to a number of criticisms leveled against the rational expectations hypothesis.

Regarding the criticism that the hypothesis assumes all economic agents are endowed with the ability to understand and use complicated economic models to formulate their expectations, Lane argues that Muth did not propose that same models are used by trained economists and economic agents, though the hypothesis still argues that the two groups arrive at the same expectations. However, it is difficult to imagine how two agents, not skilled to the same level and with differential access to relevant information, can process whatever information they have to arrive at an identical expectation outcome. The question is if the agents are not using, for example, the statistician's model, which model are they using to achieve the statistician's outcome? Rational intentions do not necessarily translate into ability.

It is further argued (by Lane) that the hypothesis is not claiming that every individual will gather information and formulate expectations. Many have it done for them by others, and

those who do it for them, for example the Central Bank, trade union appointees, specialists and consultants, have full information. However, this makes the unreasonable assumption that professional forecasters have full information. This is also an acknowledgement that economic agents are not as good as relevant economic models, and that there is room for professional forecasters to sell information. All this seems to go against the fundamental claims of the hypothesis, or at least show that there is no unity in the understanding of the hypothesis among its advocates.

Lane defends the rationality of rational expectations as being consistent with the core argument of economics that individuals are rational. However, the criticism against the hypothesis is not on its claim that people are rational, but that rationality is bounded by constraints of expertise and information. Rationality speaks of intention only, not also ability. That people seek the best does not mean that they achieve it, as individuals or on average.

We may summarize the main findings of this section as follows. A significant part of the criticism against the theoretical construct of the rational expectations hypothesis remains valid and much of the defense against the criticism amounts to claiming that the critics have misconstrued its claims. The latter argument may be regarded as an indication of lack of clear consensus on the claims of the hypothesis among its advocates.

We note that the argument by Muth that average expectations will be the same as the predictions of economic theory and that any discrepancy will be eliminated by arbitrage is refuted by the fact that price-forecasting consultancy services continue to exist. This implies that arbitrage is never complete. An implicit acknowledgement of this fact is the argument by some advocates that not every individual needs to gather information and formulate expectations since many have it done for them by Central Banks, trade unions, specialists and consultants.

The assumed eventual equivalence of expectations to predictions implies that at some point economic training becomes of no value, which is refuted by the fact that such training continues. The learning of the variable generating process assumed by rational expectations implies that, because of different learning abilities and starting points, some agents will be in the long-run while others will be in the short-run, and some expectations will be rational while others will be non-rational. The average of rational and non-rational expectations is not exactly rational expectations.

The reduction of the hypothesis to the statement that if a model is believed it becomes correct is too simplistic. It implies that rational expectations are at best just a belief, regardless of the basis of belief. Thus, correctness (or lack of it) is no longer an intrinsic attribute of the object of belief (the model) but one of any belief about it. While the hypothesis relies on the existence of other relevant models that explain variable formation process, in cases where there is more than one relevant model, the hypothesis does not tell us which one is best.

While the paper finds unacceptable the argument that expectations are always correct, it argues that since they are assumed optimal forecasts, their fulfillment (correctness) must inevitably be an optimal outcome that is consistent with equilibrium. However, because such fulfillment remains a rare outcome, rational expectations equilibrium is best regarded as an ideal.

4. General Conclusion

It is concluded that in practical estimation of models with adaptive expectations, the

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coefficient of expectations, besides being allowed to vary between individuals and over time, should be allowed to vary among groups of economic agents (for example, buyers and sellers) and to vary without an upper bound. This would allow the characterization of expectations by groups and would allow the extremes in which the coefficient of expectation may be more than 1 to manifest. While, statistical models can be very useful, care must be taken to test each model for its validity rather than assume that all statistical models are correct representations of forward looking behavior.

There is need for clear consensus on the claims of rational expectations, as the ambiguities and inconsistencies can easily hamper practical application. Instead of assuming that rational expectations will always be correct, it is important to consider ways of making correctness a function of available information and skill level. Thus, there must be consideration of levels of rationality in rational expectations as a compromise between the extreme assumption of rational expectations (which almost amounts to perfect foresight) and the obvious limitations of a pure adaptive expectations approach. This would bring the claims of rational expectations closer to the reality of information deficiency, skills deficiency and lack of perfect equilibrium in the real world. In studies of expectations there is need to benchmark the learning process and to consider surveys and models that take the existence of various points on the learning curve and their distribution into account rather than regard experience as uniform among all agencies. It would also be necessary to understand the various perceptions of agents of the concept of rationality and optimality rather than assume them to be uniform.

In the end, rational expectations and adaptive expectations share two things: (1) they both assume some high level of analytical abilities on the part of economic agents; and (2) they both make use of historical data and learning from experience. The long time needed to learn the variable generating process makes the rational expectations hypothesis some form of long-term concept, while the adaptive expectations hypothesis is a short-term concept. That is, in the short-term there is the tendency to look at few past values of the variable of interest, while in the long-term a more holistic understanding of processes must develop. Thus, both models are useful, but differently - adaptive expectations hypothesis is a short-term and *ad hoc* approach appropriate where there is scanty information, while its antithesis is a suitable pointer for the need for more comprehensive economic modeling in long-term planning.

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AN EVALUATION OF THE CRITICAL SUCCESS FACTORS FOR CONSTRUCTION PROJECTS IN LIBYA

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Abstract

The construction industry is one of the more important economic activities that contribute towards the economic growth of any nation. The construction industry in Libya faces serious challenges and difficulties due to fast developments and dependence on foreign experts. The current capacity of the Libyan construction industry in order to meet national housing supply needs. Recently, the country is witnessing a new construction boom that will bypass all other construction activity of the past decades. New houses, airports, ports, railways, and roads need to be built and upgraded. Hotels, office buildings and resorts are required to meet the needs of an expanding tourism industry. The main reason for conducting this study was to evaluate which critical success factors are most important in phases of construction projects. This study was in the Wadi Alhaya region in southern part of Libya. A quantitative approach was selected. As conclusion, this paper identifies ten critical success factors that are important and will impact positively on construction projects if they are focused on by all the stakeholders and it can be concluded that the critical success factors found to be most influential in this study could be utilized in future work which examines different situations and environments.

Keywords: Evaluation, Critical success factors, Construction projects, Libya.

1. Introduction

The construction industry has been characterized as dynamic in nature as a result the increasing uncertainties in technology, budgets, and development processes. In recent time, building projects are becoming much more complex and require a careful integrated process management tools and techniques.

Research on the critical success factors (CSFs) are considered to be a means to improve the effectiveness of project and to achieve project objectives. According to Morrison (2009) critical success factor (CSF) an element of organizational activity which is central to its future success. Critical success factors (CSFs) may change over time, and may include items such as product quality, employee attitudes, manufacturing flexibility, and brand awareness. Critical Success Factor any of the aspects of a business that are identified as vital for successful targets to be reached and maintained. Critical success factors (CSFs) are identified in such areas as production processes, employee and organization skills, functions, techniques, and technologies.

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The identification and strengthening of such factors may be similar. According to Sandivo et al., (1992) identified the following as most critical factors that needs special and continuous attention for a successful project: the first category of factors is a well-organized, cohesive facility team to manage, plan, design, construct, and operate the facility. The second is a series of contracts that allows and encourages the various specialists to behave as a team without conflicts of interest and differing goals. The third is experience in the management, planning, design, construction, and operations of similar facilities. And the fourth is timely, valuable optimization information from the owner, user, designer, contractor, and operator in the planning and design phases of the facility. Jaselskis and Ashley (1991) indicated that the application of management tools would enable the project managers to plan and execute their construction projects to maximize the project's chances of success. Variables in project managementrelated critical success factor include adequate communication, control mechanisms, feedback capabilities, troubleshooting, coordination effectiveness, decision making effectiveness, monitoring, project organization structure, plan and schedule followed, and related previous management experience (Walker and Vines 2000). Attributes under this critical factors that can impact on success of project include the communication system, control mechanism, feedback capabilities, planning effort, organization structure, safety and quality assurance program, control of subcontractors' works, and finally the overall managerial actions (Chan et al., 2004). With regard to the procurement related factors, they play an important role in the success of construction projects (Kumaraswamy and Chan, 1999). These factors consist of methods used in selecting the design team, contractor as well as the procedure adopted in selecting project team (Sagib et al., 2008). Another factor which plays an important role is client related factors. However, the characteristics of client such as client type, experience, and knowledge, a well defined project scope and project financing enable a significant contribution to the success of a project (Dissanayaka and Kumaraswamy 1999).

Project participants (capability of client key personnel, competency of client proposed team, client team turnover rate, client top management support, client track record, client level of service. Contractor related a factor is also a considerable factor which has an important role in evaluating the critical success factors in the construction industry. It can be stated here that Contractor's experience, an effective site management and cost control, cash flow, management of sub-contractor and a proper supervision of work on site are all associated with contractor related factors that can impact on the success of construction project (Dissanayaka and Kumaraswamy, 1999). In addition, qualification such as financial strength, past experience, business plan, work capacity, quality and experience of the technical personnel as well as project characteristics consisting of work schedule, type, value, duration, complexity, location of a project, contract type and variation between the contractor's bid price and the next lowest bidder's price have been associate with the capability of a contractor Al-Sobiei et al., (2005).

Delays in project completion time and increases in cost of construction projects are have been closely related to specifications and contractors' contractors' qualification such as financial, technical, experience (Koushki et al., 2005). Another significant factor plays a role in the development process is the design team related factors. According to Chan (2004), these factors and their participation commence from inception till completion of the construction. Further, Chan and Kumaraswamy (1997) stated that design team-related factors consist of project design complexity, design team experience, and mistakes/delays in producing design

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documents. The authors categorized construction in to three phases: project design, project conception and project construction. Several approaches and studies agreed with that project manager related factors have also a significant aim in evaluating the success for any project in the construction industry. For instance, competency of a project manager is an important quality which has been found as influencing factor on success of construction projects. The reason is that competency is an attribute of an effective project planning, scheduling and a well structured communication (Belassi and Tukel, 1996). Other success factors associated with project manager that can impact on the project success are his or her commitment, experience and authority (Chua et al., 1999). Additionally, the ability of a project manager to facilitate team building among project players is an important factor that impacts positively on project success (Hassan, 1995). In term of work environment related factors. Walker and Vines (2000), project environment plays a significant influence on project success.

Environment has been described as all external factors that will influence construction process such as social, political, and technical system. Project environment can therefore be characterized as economic environment, social environment, political environment, and physical environment (Akinsola et al., 1997). In a research which examines environmental factors and work performance of a project manager in construction projects, Pheng and Chuan (2006) categorised working environment related critical success factors in five: Personal variables related factors, job condition related factors, project characteristics related factors, environmental related factors and organizational related factors. Factors such as materials, labour and productivity have also an important role in evaluating the success in the construction industry.

According to Pheng and Chuan (2006), an adequate material management can significantly impact on labour productivity. For example, work time can become no-productive or idle time due to lack or shortage of materials and tools at the right time and in the right place. In addition, double handling due to distance of storage can affect availability of materials. Materials quality and availability therefore can impact critically on the project success. As per labour and productivity related factors, a United Nations report (1995) stated that in ordinary situations two major sets of factors affect the site labour productivity requirements: organisational continuity and execution continuity. Organisational continuity encompasses physical components of work, specification requirements, design details etc. Execution continuity relates to the work environment and how effectively a job is organised and managed. Management aspects include weather, material and equipment availability, congestion, and out-of-sequence work. External related factors are also amongst the factors that have a great influence in the success for any projects. These factors included the nature of the industry, construction client knowledge of construction procedure, weather, and level of economic development. Failing of any success factors caused by project participants are demarcated as external causes.

Following are the identified factors that arise from the external factors, particularly from the work of (Aibinu and Odeyinka, 2006; Sembasivam and Soon, 2006; Chen and Kumarsamy, 1997). The external factors could be inclement weather condition, act of Allah, price fluctuation, slow process of Building permit, government neighbour, problem with neighbour, unforeseen site condition and civil disturbance. Those factors should be taken in account in order to avoid any problem within construction project process. Thus, this paper is focused on determining the CSFs in Wadi Alhaya region which is located in the southern part of Libya.

2. Research Methodology

The study was carried out in the Province of Wadi Alhaya in Libya as shown in Figure 1. Additionally, the geographical areas selected include the locations where construction activities are high. Questionnaire survey was adapted from Saqib et al., (2008) and used as a technique for collecting the data. The distribution of the survey instrument commenced on 1st August 2010 in Wadi Alhaya Province in Libya and the survey was completed on 25th December 2010.

The questionnaires were in prepared in English language and then the researchers have translated it into Arabic language to ensure getting enough feedback because most of the contactors who are running their business there are mostly speaking the local language (Arabic language). Moreover, the data were collected by firstly using close ended self-administered questionnaires. And then, this study was employed survey method to obtain the perceptions of the respondents toward the critical success factors for construction projects in Libya. Out of the 80 administered and only 44 useable questionnaires were returned, which produced 52.5% responds rate which is a quite high when compared with previous studies. The collected data were analyzed with aid of Statistical Package for Social Science (SPSS) version 17.0. The data were analyzed in the following order. First, the demographic profile of firms and respondents were analyzed using descriptive statistics. Followed by, indices the Relative Importance Index (RII).



Figure 1 – Map shows the study area

3. Analysis and Discussion

3.1 Respondents background

The first part of the questionnaire was designed for the purpose of eliciting information of the respondents' background where out of 44 employs who participated in this study, 72.3% were working in public sector while 27.7% were working in private sector. In term

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of qualification, Figure 2 illustrated that 2 (4.5%) had a Diploma or certificate degree. Respectively, 17(38.6%) had bachelor or equivalent degree, 23 (52.2%) had Master or above degree. while 2 (2.4%) had no certificate.



Figure 2 – Respondents Qualification

The information of the respondents' years of workers' experience was also elicited. The data shows that most workers had experience from 6-10 years. Figure 3 indicates that 9 (20.5 %) had been working between 1-5 years, 27 (47.7 %) illustrated that they had been working from 6-10 years, while 13 (29.5 %) had worked for 11-15 years and just 1 (2.3 %) had worked more than 20 years.



Figure 3 – Working Experience of Years Respondents

3.2 Critical Success Factors for Construction Projects in Libya

The data used for analysis of evaluate critical success factors were obtained from the questionnaire survey. Ten main categories of factors were included in questionnaire were critical success factors which relates to project management consist of twelve items in the questionnaire. The result of the RII shows that eight items are very important to success of a project in Libya. Feedback capabilities is ranked first with 0.682, followed by project monitoring, coordination effectiveness and design adequate organization structure which are ranked second with 0.659. Decision making effectiveness and plan and schedule are ranked third with 0.636. Training team work to skilled is ranked fourth with 0.630. Control and mechanisms is ranked fifth. The sixth critical success factor relates to procurement and consists of four items in the research

questionnaire.

The most important among these items is client experience which ranked first at 0.722. Next is project contact mechanism which was ranked second at 0.653. The third important item is evaluating and determining the priority to the requirements of project which was ranked at 0.631. The item with least importance is project bidding method which was ranked at 0.574. The third critical success factor which relates to Client consists of twelve items in the questionnaire. The most important factors resulting from the RII are five. The most important among these five items are identified. First, allow adequate time to project and client's ability to make decision and has 0.721. Client experience is next with 0.688. Providing information to team work was scored 0.682, followed by client's knowledge of construction project organization which was scored 0.670. Client's ability to define roles was scored 0.665. The fourth critical success factor relates to contractor and consists of seven items. Five from these items were scored higher than the others.

The most important is the highest which is contractor experience having 0.784. The second is supervision having 0.682, followed by speed of information which was scored 0.670. Next is effectiveness of cost control system having 0.631 and followed by site management having the least importance and is scored 0.597. The fifth critical success factor relates design team and consists of four items in the research questionnaire. All the items were scored high. The most important is quality relationship between team having 0.75. Next is design team experience which was scored 0.693, followed by mistake and delays in producing design documents was scored 0.625. The item with the least important is project design complexity which was scored 0.608. The second success factor relating to project manager consists of eight items in the questionnaire. The most important items for success of project in Libya are identified. Leadership skill by the Project Manager is ranked first with 0.761. The second important item is Project Manager's efficiency ranked second with 0.756. The third is Project Manager's experience ranked third with 0.75. Sufficient salary of Project managers is ranked fourth with 0.733. Project Manager Commitment to quality cost and time is ranked fifth with 0.705. The eight critical success factors which relate to work environment consist of seven items in the survey questionnaire. Five out of these seven are scored high by the respondent. The most important item in the factor is adequacy of funding ranked at 0.744, followed by political environment which was ranked at 0.670. Next is commitment of all parties to the project which was ranked at 0.664, followed by the availability of skilled labour ranked at 0.648, lastly, technology availability was ranked at 0.636. The ninth critical success which relates to materials consists of two items in the questionnaire. All items were scored high by respondents.

The most important item in this factor was the shortage in materials where it was scored 0.75, followed by quality of materials which was scored 0.739. The seven critical success factors were related to labour and productivity and it was consisted of three items in the questionnaire. The entire three items were scored high but the most important item amongst them was the labour productivity which was scored 0.761. Subsequently, is labour supply which was scored 0.733, and the least important was scored 0.563. The tenth critical success factor related to external factors and consisted of four items. All these items were scored high. The highest amongst them was the regulatory code and building code, it had scored 0.568. The second was weather conditions and it was scored 0.466 while the third item was scored 0.449. Table 1 illustrates these factors with their ranks in term of their priorities.

Critical Success Factors	RII	Ranking
Critical Success factors Related to Project Management		
Feedback capabilities	0.682	1
Project monitoring, Coordination effectiveness & Adequate organization	0.659	2
Decision making effectiveness and Put plan and schedule	0.636	3
Training team work to skilled	0.630	4
Control and mechanisms	0.619	5
Critical Success Factors Related to Procurement		
Client experience	0.722	1
Project contract mechanism	0.653	2
Evaluate and determine the priority to the requirements of the project	0.631	3
Project bidding method	0.574	4
Critical Success Factors Related To Client		
Allow adequate time to project& Client's ability to make decision	0.721	1
Client's experience	0.688	2
Provide information to team work	0.682	3
Client's knowledge of construction project organization	0.670	4
Client's ability to define roles	0.665	5
Critical Success Factor Related To Contractor		
Contractor experience	0.784	1
Supervision	0.682	2
Speed of information flow	0.670	3
Effectiveness of cost control system	0.631	4
Site management	0.597	5
Critical Success Factors Related to Design Team		
Quality of relationship between team	0.75	1
Design team experience	0.693	2
mistakes and delays in (producing) design documents	0.625	3
Project design complexity	0.608	4
Critical Success Factors Related To Project Manager		
Leadership skills of project manager	0.761	1
Project manager's efficiency	0.756	2
Project manager's experience	0.75	3
Comfortable salary to project manager	0.733	4
Project manager's commitment to meet quality, Cost & Time	0.705	5
Critical Success Factors Related To Work Environment		
Adequacy of funding	0.744	1
Political environment	0.670	2

Table 1 – Critical Success Factors for Construction Projects in Libya

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Commitment of all parties to the project	0.664	3	
Human Skill availability	0.648	4	
Technology availability	0.636	5	
Critical Success Factors Related To Materials			
Shortage in materials	0.750	1	
Quality of materials	0.739	2	
Critical Success Factors Related to Labour and productivity			
Labour productivity	0.761	1	
Labour supply	0.733	2	
Equipment availability and failure	0.563	3	
Critical Success Factors Related To External Factors			
Regulatory changes and building Code	0.568	1	
Weather condition	0.466	2	
Problems with neighbours& Unforeseen ground conditions	0.449	3	

4. Conclusions and Recommendations

This paper identifies ten critical success factors that are important and will impact positively on construction projects if they are focused on by all the stakeholders and it can be concluded that the critical success factors found to be most influential in this study could be utilized in future work which examines different situations and environments. For example one could look specifically at industrial facilities, or private sector projects. This study has also recommended that the methodology used in this research should be applied to other areas or cities in Libya so that more influential and impact factors can be discovered which will improve the construction industry development in Libya or even in the other Arab countries.

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DEVELOPING COMPETENCY MODEL FOR THE PROJECT MANAGER IN THE LIBYAN CONSTRUCTION INDUSTRY

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Abstract

Managers are more likely to perform better or to stay longer in their position if their personal characteristics meet the requirements of the position. The importance of project manager's competency to construction derived from the nature of changing business circumstances of the industry. Developing the requisite competency on project manager is to ensure efficient performance that will bring to successful of a project. PEAKS framework was adapted and applied in order to determine the competency of the construction project managers within the Libyan construction industry. Two objectives which are following (i) to identify the construction project manager's perceptions on the level of importance of the competencies against their personality; and (ii) to determine the level of competencies of construction project managers were proposed to be achieved. Quantitative approach was implemented in this study whereby 50 questionnaires were sent out. However, of these, only 41 questionnaires were returned and analyzed. As result, it can be concluded that our project managers today are at the high level of competent.

Keyword: Competency, Project manager, Construction industry, Model, Libya.

1. Introduction

The unique structure of the construction industry, coupled with the challenges of global competitiveness, and changing regulatory requirements have created great demand for highly educated and competence construction project managers. The construction project managers have never had a tougher job. Companies are always in transition now remodeling and reorganizing to meet the latest global challenges. Competition is keen and only the flexible will survive. These business conditions translate directly to greater demand for efficient and effective management of an entire spectrum of projects.

Within such a changing construction project managers increasingly find themselves confronting with the new issues and undertaking additional roles have traditionally not been part of their responsibility. To ensure their continued relevance in the industry, construction project managers rely on various learning activities that help them to fulfill the needs of a project, both construction specific and non-construction specific functions. Identifying the routes and mechanisms by which these construction project managers acquires such requisite skills should provide in addressing the training needs of future construction project managers (Ryssell et al., 1997). Rater their management knowledge skill gains from their working experience, mostly

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through real-estate or construction-related careers. Their role and responsibility in delivering the client s development needs directly reflects their application of the project management knowledge for their job competency in this industry. The project management competency refers to the capability to manage projects professionally by applying best practices with regards to the design of the project management process and the application of project management methods. Project management competencies require knowledge and experience in the subject, which enables the project to meet its deadlines and objectives (Garish and Huemann, 1999).

2. Defining Competence

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According to the Cambridge Advanced Learner's Dictionary "competence is the ability to do something well". Among the many definitions provided by the Oxford English Dictionary, one with a similar meaning would be that competence is "sufficiency of qualification; capacity to deal adequately with a subject". Both definitions offer a general explanation which is quite representative of the common understanding of the word. However, as noted by Robothan and Jubb (1996) the concept has evolved incorporating different meanings, it has also become one of the most used terms in organizational literature. A good definition of competence is presented by Berglund (1999) in Glader (2001):

"Competence is used to accomplish something. It includes knowledge in all their shapes, but it also includes personality traits and abilities, such as social competence, persistence, stress tolerance and so on. Competence is at first an individual based term, but is however not impossible to also talk about organisational competence. One can then refer back to the complete competence at the individuals in the organisation, or the stored knowledge concerning systems, techniques or the culture".

By analyzing this definition it can be understood that competence can be looked at from an individual perspective and also from an organizational point of view. In the organizational perspective the firm possesses competence as an institution. This perspective is presented by Söderlund's (2005), who looks at project competence in terms of organizational capability. In his view the organization is deemed to posses' project manager competence if it is able to generate/select and implement/execute projects in a skillful manner. These two different views are not contradicting, after all an organization is an inanimate character that exists only through its people. Therefore, for an organization to have competence, it is essential that the people inside are competent. Nevertheless, there is a difference on how competence is approached; one perspective looks at the individual parts and the other at the whole. For this study intends to look into the competences of project managers in the Libyan construction firms.

3. Project Management and Competency Theory

The importance of project managers leads to the concern of their training and development. As the first, step, and people need to know what constitutes a good project manager. Then proper training and development programs can be developed to provide the necessary training to those who want to become project managers.

Performance measurement of existing of project managers should also be developed in order to provide insight into the effectiveness of training program, as well areas that may need further development in the form of CPD. All of this can be embraced by the competency models. Edum-Fotwe and McCaffer (2000) stated that professional competency in project management is attained by the combination of knowledge acquired during training, its subsequent application and other skills developed in the course of practice. They notice that

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although academic programmers cover a significant proportion of knowledge area, what required in practice by project manager is much wider in context. Thus, they suggest that modern project management demands other general and management knowledge, together with skills that extend beyond the technical aspects of traditional engineering areas.

4. Research Methodology

The target of this research is to determine the importance level of core competency of construction project managers and the level of competencies of the construction project managers within construction industry in the city of Murzeq (Libya). PEAKS model of project managers established by Hilson and Muray (2002) were selected. Basically, the paper is concentrated on four components which are categorized as Personal Characteristic, Attitudes, Knowledge Competence and Skills Competence (Figure 1). Relative Importance Index (RII) was used to determine the effectiveness of leadership needs for the project leader.

The most important factors influencing leadership needs was further analyzed using the 'relative importance index' as adopted by (Kometa et al., 1994). The 5 Likert scales was converted to relative importance index for each factor, which made it possible to cross-compare the relative importance of each of the factors as perceived by the respondents. The relative importance index was formulated using the following statistical expression (Lim & Alum, 1995):

Relative importance index (RII) = $\frac{4n1 + 3n2 + 2n3 + 1n4 + 0n5}{4N}$ (0 < RII < 1)

Where N = Total number of respondent, 4= highest weighted score (0, 1, 2, 3, 4) on scale of agreement (whereas n1 = number of respondents for Strongly Disagree, n2 = respondents for Disagree, n3 = respondents for Neutral, n4= respondents for Agree and n5 = respondents for Strongly Agree).



Figure 1 – Conceptual Framework of Project Management Competences

5. Results and Analysis

5.1 Respondents background

The analysis has shown that the presence of female in the industry is relatively less and their contribution of respondent (Figure 2). It can be said that the presence of female in the industry is relatively less and their contribution in this survey is only 19.5% if compare to the male respondent is 80.5%.



Figure 2 – Distribution of Respondent's Gender

From the data collection, most of the respondents are middle age project manager. The maturity age of respondent will give a better and more consistent results due to their exposure is much more compare to the young age of project manager. It was found from the analysis that the highest percentage of 51.2% who were aged between (30-40 years old), followed by the eldest aged ground between (41-50 years old) with 31.7%. Figure 3 shows the rest of the results



Figure 3 – Distribution of Respondent's Age

With regard to the educational background, it can be seen in Figure (6), most of the respondents were obtained Bachelor degree (33.6%). And twenty fifth percent are holding (25.1%) High diploma degrees, followed by 22.9% as Master holders. Other respondents with different holding degrees are shown in Figure (4).



Figure 4 – Respondent's Education Qualification

As per job description / position, it can be seen from the data analysis that managing director represented 41.5% of the total, follow by Project Director 22%, others (Site Manager, project Engineer) achieve of 10% (See Table 1).

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Table 1 – Respondent's Job description / position

Job Description	Frequency (%)
Project Director	9 (22%)
Senior Project Manager	5 (12.2%)
Managing Director	17 (41.5%)
Others	10 (24.4%)
	100%

In term of the working experience, Table 2 depicts the years of experience accumulated by the respondents in the construction industry. The data reveals that their years of experience ranged from 1 to 5 are predominant of the respondents. The subsequence percentage is follow by 31.7%, being 6 to 10 years experience in the construction industry.

Table 2 – Respondent's years of experience

Years of Experience	Frequency (%)
1 to 5	16 (39%)
6 to 10	13 (31.7%)
11 to 15	7 (17.1%)
More than 16	5 (12.2%)
	100%

From data shows in Table 3, it is clear that the number of current project handled by the project manager is ranged between 2-3 projects. There is also 17.1% of project managers had handled between 4-5 projects and similar percentage (17.1%) having more than 5 projects in the present position.

Numbers	of	Frequency (%)
current project responsible for		
1 Project		8 (19.5%)
2-3 project		19 (46.3%)
4-5 project		7 (17.1%)
More than 5 projects		7 (17.1%)
		100%

Table 3 – Numbers of current project under respondent's responsibility

5.2 Personal Characteristic Competence Variables

Table 4 depicts the competency level for personal characteristic competence of our project manager in the Construction Industry in the city of Murzeq today. As can be seen, there are there are 2 competencies are considered under this section. These are a) Self reflection and b) Leadership/ team management. In the part A), the top priorities ranked factor was "Sustained energy & enthusiasm" as a factor number one (RII=0.682). This is followed by "Need to deliver

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results/ achievement oriented" as the second ranked factor (RII=0.663). It is not surprisingly found that the factor "enjoys problems" was ranked as the last important factor in term of its priorities where RII was recorded as (0.292). The other ranked factors can be seen in Table (4). Part (b) in Table (4) shows the results for the personal characteristic competency on the leadership /team management. From the results, the highest ranked factor was "integrity" and it was recorded as (RII=0.663). This can be agreeable that this factor has been an ideal personal characteristic for our project manager today. The lowest ranked factor was "Seeks out face communication", where RII value was recorded as (0.595). Table 4 presents these results clearly.

Personal Characteristic	RII	Ranking	
A. Self reflection			
Seeks out and is comfortable with change	0.429	11	
Aptitude to uncertainty	0.526	8	
Enjoys problems	0.292	12	
At ease with prioritisation & decision making	0.585	7	
Critical thinking	0.517	9	
Need to be organized	0.595	6	
Need to deliver results/ achievement oriented	0.663	2	
Pragmatic	0.595	6	
Self driven & tenacious	0.478	10	
Self confidence	0.629	4	
Sustained energy & enthusiasm	0.682	1	
Self- controlled	0.604	5	
Self- awareness & regulation	0.643	3	
Leadership / Team Management			
Seeks out face communication	0.595	4	
Charismatic & inspirational	0.629	2	
Intuitive & sensitive to the needs of others	0.609	3	
Adaptable	0.609	3	
Integrity	0.663	1	

 Table 4 – Personal characteristics

5.3 Attitudes Competence Variables

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Table 5 displays the statistic results of competency level for attitudes competence of our project manager today. There are total 2 constituents namely (i) personal values and (ii) organization/ project. From section (a), it can be seen that the factor "concern for ethical behavior/courteous" was ranked by the respondents as the top priorities factors amongst the listed factors for attitude competencies (RII=0.702). The other important factor was "team approach", this is ranked as the second factor (RII=0.678). Other important factors can be seen in Table (4). With refering to the section (b) in the below Table, it can be observed from the results that the most important ranked factor was "concern to learn from experience", which

is the highest score (RII=0.731), while the less important one was "prepared to serve the aspirations of the organization regardless personal agenda" with a RII=0.478.

Attitudes	RII	Ranking
A. Personal Values		
Concern for ethical behavior/courteous	0.702	1
Team approach	0.678	2
Prepared to take appropriate risk	0.600	6
Prepared to take responsibility	0.565	4
Maturity	0.668	3
B. Organization / Project		
Concern for stakeholder needs	0.600	4
Concern for safety & quality	0.720	2
Concern to learn from experience	0.731	1
Willing to play at organizational politics	0.692	3
Prepared to serve the aspirations of the organization regardless	0.478	5
personal agenda		

 Table 5 - The competencies' attitude of the project managers in Libya

5.4 Knowledge Competence Variables

Table 6 shows the statistic results of competency level for knowledge competence of our project manager today. There are total 4 constituents (as listed below) and 17 subs-constituents have been analyzed: a) Organizational Context; b) Scope, Quality, Risk and Value; c) Time and Cost; and d) Human Material Resources and procurement Management. For organizational context, the most important factors was "organize completion & handover activities" and it was recorded as a factor number for the organizational context and RII vale was (0.668). As per section (b), the results have shown that "Project strategic planning" as the most important one amongst the listed factors where, Relative Important Index shows that value as (RII=0.687). With regard to section (c) the results for the knowledge competency are shown that "budgeting & cost management" was recorded as (RII=0.639), which is the highest score amongst the included factors in this study. While, section (d) shows that most important factor for the knowledge competency on the human material resources. However, it was ranked as a factor number one with RII value as (0.668). Overall, the results for all the factors in each section are presented clearly in Table 6 as shows below.

Knowledge Competence	RII	Ranking	
A. Organizational Context			
Identify project environment & context	0.648	4	
Coordinate project development processes & phases	0.653	2	
Establish project organization structure & role	0.629	5	

Table 6 - Knowledge competence of the Project managers in Libya

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Programme project management	0.653	2	
Organize completion & handover activities	0.668	1	
B. Scope, Quality, Risk & Value			
Project strategic planning	0.687	1	
Quality & regulatory management	0.668	4	
Decide & identify risk management	0.678	2	
Process review and value engineering knowledge	0.570	3	
C. Time and Cost	,		
Appraisal techniques for evaluating options	0.570	4	
Time & cost estimating	0.619	3	
Time scheduling & phasing management	0.629	2	
Budgeting & cost management	0.639	1	
D. Human, Material Resources & Procurement Management			
Manage internal & external project material resources	0.668	1	
Acquire, develop & manage project team	0.629	2	
Plan &evaluate contracts	0.629	2	
Perform contract close-out	0.570	3	

5.5 Skills Competence Factors

Table 7 shows the statistic results of competency level for skills competence of our project manager in Libya. There are total 3 constituents (as listed below) and 17 subs-constituents have been analyzed: a) project Process; b) communication; and c) Leadership. For section (a) the digest RII value of 0.687 was recorded on the factor "Monitoring & controlling projects". Followed by "develop projects resources & capacity planning" as the second important one (RII=0.653). In term of section (b), the results showed that the most important factor for the skills competency on the communication components is "facilitate & resolve conflicts". From the results presented in Table (6), it can be seen that this factor is obtained a RII value (0.648). The final section is refers to the leadership factors. However, a factor like "ability to complete project on time" is appeared the highest ranked value and it was recorded as a factor number one (RII=0.702) and the lowest ranked factor was "ability to manage legal issues" and ranked as the sixth factor with RII=0.619 (Table 7).

Skills Competence	RII	Ranking
A. Project Process		
Define project requirement	0.609	4
Develop projects Resources & Capacity planning	0.653	2
Manage project execution	0.648	3
Monitoring & controlling projects	0.687	1
Close project	0.590	5

Table 7 - The Competence skills for the project managers in Libya
B. Communication		
Project communication needs & methods	0.599	5
Communicate in writing at all levels.	0.609	2
Communicate verbally at all levels.	0.600	4
(presentation / public speaking)	0.604	3
Facilitate & resolve conflicts	0.648	1
C. Leadership		
Managing information (gathering, assessing, integrating, organizing	0.634	4
and documenting)		
Negotiation and delegation of project information and process	0.624	5
Critical thinking and rational decision making	0.624	5
Building, leading and motivating teams to ensure commitment, respect	0.668	2
and loyalty		
Transfer knowledge (coaching, mentoring, and training)	0.658	3
Ability to manage legal issues	0.619	6
Ability to listen	0.624	5
Ability to complete project on time	0.702	1

6. Conclusion and Recommendations

The first objective was to identify the construction project managers' perceptions on the level of importance for core competency. However, this objective has successfully achieved as following:

Regarding the personal characteristic competency, a self reflection of the project manager was found as more influenced by "Sustained energy & enthusiasm", as the most important factor, followed by "Need to deliver results/ achievement oriented" as the second ranked one and regarding for the personal characteristic competency on the leadership / team management. From the results, the highest ranked factor is "integrity". Attitudes competence has play an important role in any level of job position because it reveals a personality value of a person who contact with. From the results, it is clear that the "concern for ethical behavior/courteous" as a fit factor for personal values. As for the organization and project, the attitudes of concern to learn from experience" is the priority of importance for a project manager. The second objective was to identify the level of competencies of construction project managers. However, from the results, it can be concluded that our project manager today is at the high level of competent. Finally, this study provides a competency model consisting of a list of competencies needed at this position level, therefore an effective job description for the Construction project manager position level in organization should include the required competencies.

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MEASURING RETAIL SERVICE QUALITY IN NIGERIAN DEPARTMENTAL STORES

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Abstract

The Nigerian economy is experiencing a boom in the retail sector of Departmental Stores. The sector is becoming increasingly competitive with the entry of foreign and multinational retail stores. Extant literature indicates that loyalty of the customers can be maintained with service quality. Consequently, the current study attempts to measure service quality among Nigerian departmental stores using Dabholkar, Thorpe & Renz (1996) Retail Service Quality Scale (RSQS) instrument to gauge customers' satisfaction with the retail service quality in the Nigerian Retail sector. Four hundred and seventy eight customers of three major departmental stores in central Lagos, Nigeria were used for the study. Data generated was analyzed using factor analysis, correlation and hierarchical regression analysis to test the relationships of the five dimensions of RSQS and customer satisfaction. The study found RSQS to be a useful tool for evaluating retail service quality in retail sector of departmental stores. Physical dimension, reliability, personal interaction and problem solving were also found to significantly affect customers' satisfaction, while policy was found not to have similar effect within the Nigerian environment.

Keywords: Retailing, Service quality, Retail Service Quality Scale, Departmental Stores, Reliability, Customers Satisfaction, Personal Interaction, Service Performance Scale, Physical Aspect

1. Introduction

Retail business in Nigeria is largely informal and fragmented. The informal retailing is growing faster in number and investment largely because of the seemingly reluctance of the populace to change from the traditional ways of trading and partly because growing number of unemployed youths taking to retailing as a means of survival. Consequently, Retailing has remained one of the easiest ways to be gainfully employed. However, in recent decades the Nigerian economy has been experiencing increasing relevance of formal retailing (departmental retail shops, chain stores and supermarkets). This can be inferred from several retail outlets coming into the competitive retail market including foreign retail outlets. Several retail outlets had sprang up in the last decade especially after the failure of departmental stores in the 1960s and 1970s.

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Today there are various types of retail outlets some of which are specialized outlets; general merchant retail outlets; wholly indigenous retail outlets; and foreign outlets. Of the 10 major outlets (most of whom are chain stores) about a quarter of them are foreign retail stores. The Increasing importance of the departmental retail outlets may be attributed to increase in wages (minimum wages in Nigeria has been increased statutorily from N7500 to N18000 a month, N150 is equivalent to \$1); increase in number of working parents particularly women and the emergence of middle class within the Nigerian society. Despite the increase in number of retail outlets and their seemingly importance, consumer satisfaction of their service quality had not been tested or verified extensively in Nigeria. The application of service quality scale (SERVQUAL) and service performance scale (SERVPERF) instruments are essentially limited to developed countries with limited applications in retail outlets and developing countries particularly Nigeria. There are a few indications of measuring service quality in Nigerian retail banks (Ogunnaike, 2010), telecommunication industries (Ojo, 2009), but very little research had been done in retailing in Nigeria. The current study attempts to fill this gap in literature.

2. Literature Review

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The use of service quality to gauge the level of consumers' satisfaction with service provision has been on the increase in the last decades, particularly since the development of Service Ouality Scale (SERVOUAL) by Parasuraman, Zeithaml & Berry (1988), SERVOUAL rests on measuring the difference between customer expectation and perceptions of service performance. This instrument had been widely applied in several service dimensions: hospitals (Babakus & Mangold, 1989), dental clinic and business school placement (Carman, 1990), utility company (Lassar, Manolis & Winsor, 2000), internet retailing (Long & McMellon, 2004). Despite its wide application SERVQUAL has also attracted several criticisms on its theoretical foundation ((Cronin & Taylor, 1992, 1994), usefulness and generalisation (Siu & Cheung, 2001). Despite these criticisms SERVQUAL has been identified as very useful tool in measuring service quality and in add value to customer and ensuring satisfaction (Das, Saha & Banik, 2008). One of the ways to ensure consumer loyalty with a service is through service quality (Wong & Sohal, 2003). Several other benefits of service quality had been identified in literature including customer satisfaction (Sivadas & Baker-Prewitt, 2000), positioning of service in a competitive environment (Mehta, Lalwani & Han, 2000), retention and patronage (Yavas, Bilgin & Shenwell, 1997). However, it is difficult to measure service quality in nonpure service sector with the use of SERVQUAL. This necessitated the development of Retail Service Quality Scale (RSQS) by Dabholkar, Thorpe & Renz (1996).

Service quality measurement in retailing is different from other service products (Mehta, Lalwani & Han, 2000; Finn, 2004), this is as a result of its unique characteristics. Therefore measuring service quality in retail setting cannot be undertaken in similar ways as other service products. One major requirement of measuring service quality in retailing is the need to ascertain quality from the perspective of both goods and services (Mehta, Lalwani & Han, 2000)

Service quality is an attempt to measure the gap between expectations and perceptions of service performance Parasuraman, Zeithaml and Berry (1988). SERVQUAL conceptually verify the gap i.e the extent to which service obtained is related to service expectations. Expectations and performance are expected to be measured to determine the gap. However, other researchers are of the opinion that measurement of performance is a more superior way of obtaining service quality (Carman, 1990; Angur, Nataraajan & Jahera, 1999). This



measures the gap between consumer expectations and performance SERVPERF is limited to performance dimensions of service quality.

The various applications of SERVQUAL have not proven its appropriateness for retailing. The inadequacies of SERVOUAL and SERVPERF to capture properly service quality in retailing led Dabholkar, Thorpe & Rentz (1996) to develop the retail service quality scale (RSQS) specifically to measure service quality in retailing. Dabholkar, Thorpe & Renz (1996) RSOS is a hierarchical factor structure scale with five-dimensional structure namely: physical aspect, reliability, personal interaction, problem-solving and policy. Three of these dimensions have two sub-dimensions each. RSQS scale had been replicated in various other studies to verify and validate the scale. Dabholkar, Thorpe & Renz (1996) replicated their own scale and discovered that all the dimensions of RSQS are valid within the US environment. In a similar study by Mehta, Lalwani & Han (2000) in Singapore the RSQS scale was also validated in that environment. In a comparative study in US and Korea Kim and Jin (2002) found support for four out of five dimensions of RSQS. RSQS scale has also been found to be appropriate in departmental stores in South Africa. Siu and Cheung (2001) applied RSOS in departmental retail setting in Hon Kong and the five dimensions were found valid. Applying the RSQS on hypermarket shoppers Christo & Terbianche (1997) found reasonable fit of the five dimensions of RSQS scale in South Africa. However, RSQS using confirmatory factor analysis was not valid in India retail setting (Kaul, 2005). In all of these studies none had been known to cover the appropriateness of the RSQS within the Nigerian business environment. This study attempts to validate the RSQS scale within the Nigerian business environment.

One of the ways by which customer satisfaction and retention can be achieved in retail stores is service quality (Thenmozhi & Dhanpal, 2011; Sivadas & Baker-Prewitt, 2000). More importantly, customer loyalty is crucial to the financial success and increase in market share of most retail outlets as satisfied customers will not only make a repurchase but also recommend the product to others (Siu & Cheung 2001; Srinivasan, Anderson & Ponnavolu, 2002). A lot of retail stores in Nigeria strive for customers' attention and increase market share.

Retail service quality dimensions are measured through reliability, validity and component structures of the scale. RSQS is hierarchical model requiring three levels of evaluation.

The first order dimensions of RSQS are: physical aspects, reliability, personal interaction, problem solving and policy. The measurement of physical facilities is done using appearance of the physical facilities and convenience the layout of the physical facilities provides. Customers of retail shops place a high premium on store appearance as well as convenience of the physical facilities (Baker, Dhruv & Parasuraman, 1994; Hummel & Savitt, 1988). This explains why appearance and convenience are physical aspects sub-dimensions. Reliability is the extent to which customers can rely on promises made by the retail outlet and whether merchandise will be available when they are required by the consumers (Dabholkar, Thorpe & Rentz, 1996). Therefore, the sub-dimensions needed to gauge reliability are promises and doing it right. The third dimension is personal interaction which covers such variables as friendliness, courtesy, being helpful. The essence is to capture the consumer confidence and providing an environment of shopping without pressurized. The sub-dimensions for this measurement are inspiring confidence and courteous and helpfulness. Problem solving is the fourth dimensions of RSQS. Service failure and its recovery are essential parts of service quality. Quality can

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be improved as customers are noted to be sensitive to how service providers attend to service failure and complaints (Kelley & Davis, 1994). This Dimension has no sub-dimension. The last dimension is policy which is related directly to management policy of the store. This will include policy on convenience hours of shopping, credit facilities, and availability of parking space (Kaul, 2007)

3. Methods and Material

This study tests the application of RSQS in the Nigerian retail industry for the determination of service quality. The study was conducted in Lagos. Lagos has emerged as Nigeria's largest and most important commercial city, accounting for more than 45% of the country Gross Domestic Product, GDP less petroleum. Lagos is also among the first cities where large formal departmental stores were established and as such it is expected to have a greater degree of customer expectation of service quality than other cities.

The population of the study comprises of all retail shoppers of the sampled organizations, this is in line with how Dabholkar, Thorpe & Renz (1996) and Kim & Jin (2002) defined such population. The sample organizations were selected partly because of their relative size (they are in terms of sales the largest departmental stores in Lagos) and partly of their locations (they are located in the choice areas of Lagos city and as such attract large numbers of patronage) and lastly because they are one of the oldest of the new stock of departmental stores that sprang up in recent years.

Quota sampling technique was used based on customer's age, income and gender. These variables had been noted in literature to impact positively on the perception of service quality by customers (Gagliano & Hothcole, 1994; Kaul, 2007). The sample is divided among specific income group i.e. N30, 000-N1, 000, 000 (N150= \$1and Nigerian minimum wage is N18, 000 a month), gender (men and women) and age group (18-45 years). Eighteen years is statutory regarded in Nigeria as adults and mature enough to undertake his own shopping with little or no parental guidance or influence, The other age group is 25 and above. The average age of a Nigerian graduate is between 22 and 24 years. At 25 years all things being equal he is expected to be working, independent financially and make independent shopping decisions.

Established RSQS developed by Dabholkar, Thorpe & Rentz, (1996) was used with some modifications to suit the Nigerian environment. A general review of Dabholkar, Thorpe & Rentz, (1996) shows two questions that are not related to Nigerian business environment. These are items under policy dimensions: acceptance of credit cards and offering of credit cards by the stores. The use of credit card and offering of credit through credit cards as a mean of exchange is its infancy stage. As such these two items are removed in the final draft of instrument being used. The second item deleted from the scale is 'telephonic interaction with customers'. Cost of telephone despite the use of mobile phone is high in Nigeria and there is low tele-interaction with customers as this not really used in Nigeria. This indicates that other items in the RSQS are adopted for the purpose of this study.

The items were measured on a five-point Likert scale from "1-strongly agree" to "5-strongly disagree. Dabholkar, Thorpe & Renz (1996) proposed five dimensions (physical aspects, reliability, personal interaction, problem solving and policy). The first three dimensions also have sub-dimensions: physical aspects (appearance and convenience), reliability (promises and doing-it-right) and personal interactions (inspiring and courtesy). Physical appearance indicates physical facilities, convenience of the store layout as well as the aesthetic beauty of the store

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that may be valued by the customers (Parikskh, 2006). The reliability dimensions attempts to capture how reliable are the promises made by the outlet and whether merchandise required can be found in the store (Dabholkar, Thorpe & Renz, 1996). The third dimension measures the relationships that exist or should exist between employees and the workers. It sub-dimension include whether the workers inspire confidence and are courteous. Problem solving deals with how complaints, goods returned and exchanges are handled. This dimension actually involves service recovery which is also an indication of service quality. The last dimension captures store policy in terms of opening hours, it convenience and whether the policy is responsive to customer's desire.

The questionnaire was self-administered with the assistance of research assistant, who has been trained and instructed on what to do and are also expected to help the shoppers to properly fill the questionnaire. Respondents are approached and expected to fill the questionnaire. The choice of this method is based on the fact that shoppers evaluate service quality easily in the shopping environment than elsewhere (Dabholkar, Thorpe & Renz 1996). Five hundred (500) copies of questionnaire were administered while 478 were returned properly filled. Three departmental stores were chosen labeled A, B and C. Store A in an indigenously owned top brand, while store B and store C are notable foreign owned departmental stores. The questionnaire was structured and consisted of two parts. The profile of the respondents was captured in section A and section B consists of items that were meant to evaluate service quality in the retailing industry. Research Assistants were used additionally to assist shoppers to fill the questionnaire. This was made possible with the prior permission of the Managers before the commencement of the distribution.

4. Data Analysis

The reliability test for the instrument was conducted using Cronbach's Alpha coefficient (α). The result of the reliability test is shown in Table 1. The result shows the overall reliability 0.865, which falls within acceptable limits of 0.70 (Nunnally, 1978). The item by item Cronbach's Alpha shows significant level of reliability and it ranges from 0.856 to 0.865. However, a number of the dimensions have Cronbach's Alpha of less than 0.70. For example, problem solving (alpha=0.648) and policy (alpha=0.648). The sub-dimensions of reliability: doing-it-right had alpha of 0.626. These results compared to those of Boshoff & Terblanche (1997) and Mehta, et al (2000). Boshoff & Terblanche (1997) and Das, Saha & Banik (2008) found overall alpha of 0.93 and 0.88 respectively.

Dimensions	Items	α	Sub-Dimensions	Items	α
Overall	28	0.865			
1. Physical Aspect	6	0.814	1.1 Appearance 1.2 Convenience	4 2	0.814 0.721
2. Reliability	5	0.712	2.1 Promises2.2 Doing-it-right	2 3	0.839 0.626
3. Personal Interactions	9	0.814	3.1 Confidence3.2 Courteousness	3 6	0.709 0.781
4. Problem solving	3	0.648	Customer Satisfaction	5	0.765
5. Policy	5	0.648			

Table 1 – Cronbach's Alpha for RQSC Dimensions and its Sub-dimensions

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Furthermore, Das, Saha & Banik (2008) alpha for reliability is 0.60 and its sub-dimension promises (0.68) and doing-it-right (0.63). In similar manner, Mehta, Lalwani & Han (2000) Cronbach's Alpha for reliability, problem solving and policy dimensions are 0.52, 0.68 and 0.54 respectively.

Question Item	Cronbach's Alpha (α)	Question Item	Cronbach's Alpha (α)	Question Item	Cronbach's Alpha (α)
Overall Cronb	ach's Alpha = 0.865		1 ()	<u>,</u>	
Q1	.865	Q10	.858	Q19	.857
Q2	.865	Q11	.862	Q20	.859
Q3	.864	Q12	.859	Q21	.858
Q4	.862	Q13	.858	Q22	.858
Q5	.862	Q14	.857	Q23	.860
Q6	.862	Q15	.857	Q24	.861
Q7	.862	Q16	.856	Q25	.859
Q8	.863	Q17	.860	Q26	.860
Q9	.858	Q18	.856		

Table 2 – Question Items Cronbach's Alpha Results

The content validity of the instrument is assured as the instrument is adopted from previous study where it was developed through extensive review of literature. The instrument was evaluated for it face validity by two academics that are very knowledgeable in the area. Part of their suggestions led to the removal of two question items from the original scale under the policy dimension. Adequacy of factor analysis for the data is tested with Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Barlett's Test of Sphericity. Both KMO and Barlett's Test of Shericity fall within acceptable limits (KMO ≥ 0.6) and Barlett's Test of Sphericity ≤ 0.05). The result of this study is KMO=0.822 and Barlett's Test of Sphericity=0.000. The relationships among the various dimensions of RSQS were measured with correlation analysis (see Table 3).

					14010 5	een eranons
	1	2	3	4	5	6
Physical	1					
Reliability	.843**	1				
Personal	.783**	.742**	1			
Problem	.739**	.727**	.781**	1		
Policy	.885**	.860**	.791**	.803**	1	
Customer Satisfaction	.638**	.685**	.670**	.662**	.663**	1

Table 3 – Correlations

** Correlation is significant at the 0.01 level (2-tailed).

A review of the table shows reasonable level of relationships among the dimension and the customer satisfaction index. Correlation values, r, varies between 0.638 and 0.885 (p=0.01) which are within acceptable limit.

The impact of RSQS on customer satisfaction was measured using hierarchical multiple regression analysis. The results of the multiple regression is shown in Table 4.

RSQS Dimensions	R	R2	Adjusted R2	R2 Change	F Change	β	t- Statistics	ANOVA (F)	VIF	Р
Physical Aspect	0.638	0.407	0.404	0.407	136.129	0.638	11.66	136.129	3.453	0.000
Reliability	0.694	0.482	0.477	0.075	28.474	0.508	5.33	91.746	4.423	0.000
Personal interactions	0.726	0.528	0.521	0.046	18.907	0.354	4.34	73.026	2.745	0.000
Problem Solving	0.738	0.545	0.536	0.017	7.463	0.228	2.74	58.441	2.991	0.005
Policy	0.738	0.545	5.336	0.000	0.002	-0.006	-0.46	46.514	7.006	0.964

Table 4 – Hierarchical Multiple Regression Results

Hierarchical regression was employed to determine the relative importance of the 5 dimensions of RSQS on customer satisfaction. The result was transformed to reduce the level of outliers, and improves normality and linearity of residuals. As such no outliers among the cases were identified. No cases had missing data and no suppressor variables were found, N = 478. The significance of the bivariate relationship between customer satisfaction and physical aspect is assessed at the end of step one of the hierarchical regression F(1, 198) = 136.13, p < 0.001. The bivariate correlation is 0.64 accounting for 40.7% variance. Reliability dimension input is indicated as F (2, 28) = 28.47, p < 0.001. Personal interaction values are F (3, 196) = 18.91, p < 0.001. However, the values of policy and problem solving dimensions area not significant are such may be interpreted as positively affecting customer satisfaction. Table 4 shows the results of R, R^2 , and adjusted R^2 after entry of the five dimensions (independent variables). R was significantly different from zero at the end of each step. After the entry of the last independent variable (policy) $R^2 = 0.55$, while the adjusted R^2 of 0.53 is an indication that more than half of customer satisfaction in sampled departmental stores can be attributed to the level of retail service quality practiced by the organizations, after taking cognizance of the nonsignificant level of problem solving and policy. There are significant increments in the level of R^2 as each dimension is included in the hierarchical model for example physical aspect = 0.407; reliability = 0.482; personal interactions = 0.528 and problem solving = 0.545. The addition of policy did not really improve R². The pattern suggests an improvement in the level of customer satisfaction by the level of physical aspects available in the departmental stores, how reliable is the promises made to the customers, the level of personal interaction with the customers and prompt response to customers' problems.

5. Conclusions and managerial implications

The measurement of service quality has become useful tool in gauging the level of competitive advantage that can be attained by a servicing organization. More importantly is the measurement of service quality in the not too pure service context (retailing). The study attempts to further the frontier of application of retail service quality scale particularly its scanty application in a developing country like Nigeria. The results of the study showed that conceptually RSQS is a useful tool in measuring service quality in retail setting. Overall, RSQS scale confirmed that service quality affect customer satisfaction. However hierarchical regression of dimension by dimension analysis of the effect of each showed remarkable influence of four

of the dimensions on customer satisfaction. As within the Nigerian cultural setting managers of retail outlets should pay attention to service quality dimension that continually influence consumers' satisfaction.

The retail service quality dimension of physical aspect has the most significant effect on customers' satisfaction. Manager should endeavour to emphasis physical facilities of the stores, ensure convenience layout of the floors and store appearance. In ensuring customers' satisfaction manager should ensure high level of reliability on the promises made to customers in terms of doing the right things and ensuring that what is promised is delivered. The level of training that is offered to the staff in terms of their dispositions to the customer is an important yardstick in measuring personal interactions. The current study confirms Dabholkar, Thorpe & Renz (1996) original findings of the importance of staff friendliness, courtesy and ability to provide helps to needy customers.

The respondents' reactions to problem solving dimension is an indication to managers of retail outlets to develop appropriate strategies in service failure recovery. This is because customers are sensitive to how complaints and problems arising from transactions are handled. Service failure recovery strategies are not only necessary to ensure satisfaction they are equally important as retention strategy. The dimension that is not significant is policy. Customers' response to this dimension indicate that within the Nigerian retail cultural setting issues such as parking space, opening at convenient hours and the use of credit cards and credit facilities are not too valued. Not surprisingly, this response is in line with practical reality of the Nigerian business operation Nigeria (i.e. between 8.00am and latest 10.00pm). This is partly due to security issues in Nigeria and partly because as a developing country business operating on 24 hours or "odd" hours is not common because of inadequate facilities and security implications of such practices.

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NETWORKS' CONTRIBUTION TO SMALL-SIZED FIRMS' INTERNATIONALIZATION¹

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Abstract

This paper analyzes a new legislative instrument called "network contract" designed to support inter-firm cooperation. It aims to verify whether this type of formal cooperation is used by small firms to support their international strategies. Results indicate that internationalization is not the primary goal for firms who participate in network contracts: Italian small and medium-sized firms use this instrument to achieve different strategies of growth and longterm objectives. While we found that some firms have indeed increased their business activity abroad after joining the network, we also found that those with an international dimension do not seem to have changed their approach towards internationalization. Consequently, we argue that the network contract is not the most suitable tool for promoting internationalization among domestic firms, although internationalization may emerge as a by-product of inter-firm relationships.

Keywords: network contract; networking strategies; internationalization; inter-firm relationships; Italian small and medium-sized firms

1. Introduction

Globalization, increasing competition, and the recent financial crisis have severely distressed small and medium-sized enterprises (SMEs). Today more than ever, SMEs need to rethink their strategies and organizational structures in order to be competitive and survive long term. In this context, and especially in Italy, networking still appears to be the most viable way to mitigate SMEs' shortage of capabilities and financial resources, to expand their product lines, and to expand internationally. In short, networking thus helps firms escape from domestic market constraints and search for new opportunities for growth.

Past studies have already established the positive influence of network relationships (*latu sensu*) in smaller firms' internationalization processes, while also reviewing the traditional step-stage development models. Many include the network perspective (Welch, 1992;

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McDougall et al., 1994; Bell, 1995; Jones, 2001), although a minority has argued that interorganizational relationships do not always have a positive impact (Coviello & Munro, 1997; Ritter & Gemünden, 2003).

Among the different types of networks that companies can establish, we decided to focus our research on formal networks, namely the network contract: this is a new legislative tool introduced in 2009 by the Italian government to support company innovation and competitiveness.

We believe that firms' network commitments (somehow implied by the creation of a common entity and the establishment of specific functioning rules as indicated by the law) and their related formal links may have a greater influence on single firms' strategies than loose relationships characterizing other types of organizational networks, or even industrial districts (Kontinen & Ojala, 2011).

We chose this instrument because national data indicate that it is widespread among SMEs (Rapporto Unicredit, 2011) and not exclusive to large corporations: 75% of firms involved have less than 50 employees. Moreover, in a previous research (Aureli et al., 2011) we found that it is a flexible and dynamic instrument, which can be used to undertake a plurality of strategic objectives such as international expansion. The increase in contracts between SMEs in all sectors, as well as the plurality of planned objectives and programs as recorded by Cafaggi et al. (2012), is testament to this.

Consequently, this paper aims to analyze whether and how SMEs' involvement in formal networks contribute to starting or augmenting their international expansion.

First, we reviewed the national and international literature on SMEs' international strategy and networking. Second, we examined the formal objectives associated with existing network contracts. Third, we shifted our basic unit of analysis from networks to single nodes by submitting a semi-structured questionnaire to 231 Italian firms (which correspond to members of the first 39 formal networks). The data obtained from respondents were then used to evaluate the effectiveness (and the limitations) of this new tool in starting or improving small firms internationalization.

The first contribution of this paper is its description of the internationalization patterns of small-scale Italian businesses willing to cooperate through the network contract. It reveals whether they focus more on upstream or downstream market expansion, preferred modes of entry into foreign markets, relevance, geographic scope, and duration of international activity. Second, it compares the usage of the network contract for the development of international strategies with other purposes that may have led small firms to undertake this form of formal cooperation. Lastly, but most importantly, it illustrates in which cases companies belonging to a formal network have succeed in starting or improving their international expansion. Information about the size of the company, the network's dimension, the goals associated with the contract, and pre-existing inter-firms relationships are also provided.

2. Literature review

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2.1. Theories on small business internationalization

Internationalization refers to the process of increasing involvement in international operations (Welch & Luostarinen, 1988). It can be viewed as a reactive strategy to escape from concentrated and fragmented sectors, or as the outcome of specific intensions to expand internationally (i.e. Saporta, 1986). Three main perspectives or interpretative models may help

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explain firms' international expansion.

The first is the so-called "eclectic theory" (Dunning, 1980; Buckley & Casson, 1993). This theory considers internationalization as a strategy, generated by a rational decision-making process, for optimizing the company's production structure, penetrating new markets, obtaining access to inputs, and operating in more favourable conditions. The second is the "stage-model" approach (Aharoni, 1966; Johanson & Vahlne, 1977; Luostarinen, 1979), which describes internationalization as an incremental process based on learning. The third is the "network perspective" (Johanson & Mattsson, 1988; Axelsson & Easton, 1992), which interprets inter-firm relationships as the main driving force to internationalization. This last perspective also incorporates the learning theory (Coviello & McAuley, 1999).

All three models apply to SMEs whose internationalization processes have usually been depicted as different from those undertaken by larger companies (Lau, 1992; Calof, 1993; Coviello & Munro, 1997; Julien, 1997; Fletcher & Vyakarnam, 1999; Gankema et al., 2000; Wolf & Pett, 2000; Dimitratos & Jones, 2005; Kabbara, 2007), although some opposing findings exist (Kalantaridis & Vassilev, 2011).

However, the second and third perspectives seem to better describe SMEs' international development process (Caroli, 2002; Lipparini, 2002), given that they both provide a more complex view and consider the importance of learning processes that small firms usually activate when they do not directly possess the resources necessary to cross national borders. Specifically, the stage model emphasizes firms' organizational learning and incremental logic, which are central factors in SMEs' formation and implementation of strategies; although it has been criticized as SMEs may have different behaviours and may not develop gradually (Dalli, 1995) as demonstrated by the presence of many firms that are "born global" (Bell, 1995; Zucchella, 2001; Knight & Cavusgil, 2004; Zucchella et al., 2008).

The stage model has been used by Luostarinen & Hellman (1994), who deepen the concept of internationalization. Taking consideration of both upstream and downstream flows, they stress the importance of the learning process along with internationalization's advancement steps.

The first stage corresponds to inward flows as the international purchase of raw materials, intangible and tangible resources, or technology. The second stage regards outward flows through export, creation of international subsidiaries, subcontracting, job orders, licensing, establishment of production sites abroad, and collaboration with foreign partners. Lastly, in the third stage, international development mainly occurs via inter-firm collaboration regarding production, supply, and R&D activities.

This model distinguishes each stage of internationalization by the specific organizational functions involved (i.e. purchase, marketing, production, R&D), the extent of the company's investment (i.e. indirect export, direct export, foreign direct investment), and the type of product exchanged (from goods to services and know-how). This highlights three key aspects of SMEs' behaviour: learning is a key activity; SMEs usually are familiarized with the international dimension through their initial stages of importation, and the most frequent form of internationalization is the export of goods. There is actually a wide agreement in the literature about the fact that exporting is the preferred mode of entry in SMEs' international strategies (Namiki, 1988; Aerts, 1992; Pope, 2002).

Among the different export-related theories of internationalization, it is interesting to note Donkels et al. (1998)'s Interstratos model, which identifies six stages of internationalization

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based on exogenous and endogenous variables, including the firm's degree of cooperation. A similar perspective has also been used by Caroli (2002), who studied the nature and intensity of inter-firm relationships employed (or employable) by Italian SMEs, which were capable of influencing international orientation, in addition to other factors.

As changes in business practices occurred, and the importance of networks in international strategies emerged, inter-firm relationships have actually become a central theme in academic literature (Dimitratos & Jones, 2005; Coviello, 2006). Describing internationalization as an evolutionary process, the Uppsala Model, developed by Johanson & Vahlne (1977), also has been revisited in light of theoretical advances that view the business environment as a web of relationships (Johanson & Vahlne, 1990; 2009; 2011). Authors pointed out two new factors in the model's change mechanisms: trust-building and knowledge creation in inter-firm relationships.

The network represents a key factor for network theorists who interpret the internationalization of businesses as a natural development of network relationships. Some look at networks established with foreign individuals and firms (Johanson & Mattsson, 1988; Welch, 1992), while others examine the relationships established inside the industrial district (Grandinetti, 1999). Sometimes internationalization is seen as opportunity-seeking efforts made by the focal firm in order to improve or defend its position in a network or networks. This is especially true for the internationalization of Italian SMEs, which are usually dependent on larger companies and belong to industrial districts. In the first case, the small firm is pushed to internationalize because of its relations (usually as a sub-contractor) with a larger organization, which already operates globally (Lipparini, 2002). In the second case, informal relationships developed inside the industrial district stimulate the crossing of national borders (Brown & Bell, 2001; Maccarini et al., 2003) as they provide tangible and intangible resources that may allow small firms to create simple, as well as complex forms of internationalization.

2.2. The role of networks

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The "network" is a broad concept that can describe many types of interconnected relationships occurring among firms, economic entities and/or individual subjects. Networks may be interpersonal or organizational; thy may be limited to bilateral (or dyadic) relations, or they might assume the form of true networks (a combination of multiple sub-systems of links). They range from informal relationships to formal agreements, strategic alliances, constellations, consortiums, industrial districts and groups (Lorenzoni, 1992; Ferrero, 2001).

Such inter-organizational relationships seem to be more important for SMEs than for their larger counterparts (Golden & Dollinger, 1993): by collaborating, small firms can share and reduce costs; obtain complementary resources, knowledge and capital; improve learning; and, consequently, increase their competitiveness and profitability (BarNir & Smith, 2002). Moreover, the network may provide firms with the opportunity and motivation to internationalize (Bonaccorsi, 1992; Welch, 1992; Borch, 1994; Coviello & Murno, 1995; Wright et al., 2007). This is clearly confirmed for cases of formal alliance (Hansen et al., 1994; Hara & Kanai, 1994).

Regardless of the theoretical perspective used, inter-organizational links emerge as facilitators of international expansion in several studies.

The cost argument suggests that networks help individual firms overcome their financial and personnel constraints, which hinder internationalization, while also providing the best alternative to both international transaction costs and coordination costs associated with foreign direct investments (Williamson, 1991).

The resource-based explanation (Grant, 1991) attributes a firm's access to international markets to distribution channels, infrastructures, or other resources owned and shared by a partner. In addition, knowledge of foreign markets is a key resource that can be shared and captured by other firms through collaboration (Cohen & Levinthal, 1990): in this case, the firm acquires outside knowledge that allows it to do something new and different (a process called the "double loop," which generates learning).

Lastly, according to the network theory perspective (Johanson & Mattsson, 1988), a firm's international strategy (the decision to go abroad, the choice of the markets, and the mode of entry) is linked to the opportunities that emerge from network relations more so than to merely the strategic decisions made by the entrepreneur (Bell, 1995; Coviello & Munro, 1997; Holmlund & Kock, 1998). This approach assumes that international business takes place in a network setting where business actors are linked to each other through business relationships. Thus, a firm's strategies are influenced by a variety of network relationships (with customers, suppliers, distributors, regulatory and public agencies as well as other market actors). In particular, the firm's position within the network, and the presence of strong business relationships with certain actors, can exert great influence upon the firm's strategic decision-making (Johanson & Mattson, 1993; Ruzzier et al., 2006).

This is especially true for smaller firms that jointly operate with large corporations (Dana & Wright, 2004). For example, Coviello & Murno (1995) discovered that small businesses' international marketing activities were impacted by larger network partners, whereas no connection has been detected between relationships created inside an industrial district and firms' behaviour toward entry mode selection (Musso & Francioni, 2012).

When dealing with SMEs, we also have to consider the existence of less visible relationships related to entrepreneurs' and managers' personal and social relations, which usually generate more loosely coupled networks compared to inter-organizational ones. They are quite common in SMEs, which have a simple, centralized organizational structure, and a directorial style centred on direct relations promoted by the owner-entrepreneur. As noted by Johanson & Vahlne (1990; 2009), they can be important in small or emerging companies, and serve as a catalyst for the formation of formal inter-organizational relationships. They facilitate the establishment of firm alliances (BarNir & Smith, 2002), and provide a platform for internationalization (Hara & Kanai, 1994). Although there is no strong evidence for their direct influence on internationalization, we contend that they should not be underestimated.

Lastly, it is important to note that networks can also be interpreted as a means of increasing SMEs' recognition of international opportunities (Zahra et al., 2005), which can be defined as the "discovery, enactment, evaluation, and exploitation of opportunities across national borders" (Oviatt & McDougall, 2005, p. 540).

Kontinen & Ojala (2011), for example, distinguish business ties from informal ties (with friends) to assess the different level of activeness and alertness of SMEs recognition of international opportunities. Other scholars emphasize the importance of the entrepreneur's contacts with other people (Ellis, 2000; Singh, 2000; Crick & Spence, 2005), suggesting that opportunity recognition is positively related to an entrepreneur's social network. Social ties serve as conduits for the spread of information concerning new opportunities (Granovetter, 1973; Burt, 2000). In fact, Ozgen & Baron (2007) discovered that the greater the extent of

social ties with mentors and informal industry networks, the more positive are the effects on opportunity recognition.

3. Methodology

Given the research question, we aim to verify whether domestic SMEs start to operate internationally after the implementation of the network contract, and/or if the contract contributes to an increase in the international activities of SMEs who have previous experience in foreign markets. Moreover, we aim to investigate whether the network's participation may modify a firm's approach to internationalization (i.e. its preferred mode of entry in a foreign market), and if it eventually increases the entrepreneurial capacity to recognize the opportunities in both international markets and in other business aspects.

This study draws upon theoretical frameworks that consider the network as an important element in influencing the international expansion of SMEs. The theoretical framework is used to interpret data from the following empirical analysis, which is as important as the deductive construction of the theories. The so-called "adductive approach" combines the deductive and inductive models of proposition development and theory construction (Denzin, 1978).

This methodological orientation is particularly appropriate for the study of small businesses (Ferraris Franceschi, 1998) as they have specific characteristics (i.e. scarce resources, concurrence of ownership and control) which generate different behaviours from those of their larger counterparts.

We made use of different sources of data (public documents and questionnaires) and different methods of analysis (document analysis and descriptive statistics).

First, we mapped all network contracts signed by April 30, 2011, which correspond to the first-built 39 contracts involving 231 firms (nodes). The date was chosen in order to be sure that companies had a minimum of one year of experience with the network contract at the time of the study (April, 2012), and to increase the possibility of finding changes in firms' strategic decisions toward internationalization after months of supposed reciprocal experiential learning and increased commitment.

Thanks to the national system of the Chambers of Commerce, it was possible to examine the content of those written agreements and to identify their strategic objectives and network programs. This helped us discover the networks with a formally stated international scope. 21 contracts (54%), which correspond to 119 out of 231 nodes, have officially scheduled some common activities to be performed in foreign markets.

Next, a survey questionnaire was sent by e-mail to all 231 businesses, which represent the population to study, followed by a telephone call to remind them to complete the questionnaire. The questions were addressed to the primary actor involved in the establishment and/or the functioning of the network (usually the entrepreneur or the company director). Approximately three-quarters of the questions were closed and coded, whereas the remaining were open-ended.

The questionnaire is divided into four sections: company information, the company's internationalization strategies before and after joining the network contract, motives for networking and, lastly, the type and impact of common activities undertaken during the alliance.

The questionnaire was sent to all 231 firms in order to verify whether businesses involved in contracts with no international aims (as revealed during the documentary analysis), were undertaking some common international activity anyway. Only 27 questionnaires were returned (about 12% response rate), which correspond to 27 firms belonging to 20 different network

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contracts. Only 7 out of 20 network contracts formally foreseen internationalization as common activity of the network.

We are aware of the small size of the sample, which hinders generalization. Since we know some features of the population, we performed parametric tests on them that confirmed the representativity of the sample.

4. Empirical results

4.1. The sample

Regard to year 2011 the sample's 27 companies count on average 19 employees, ranging from 0 to 65 units. The average turnover is about \notin 7 million, with a minimum amount of \notin 50,000. Thus, our sample is coherent with national data that indicate that the network contract is used mainly by SMEs (Rapporto Unicredit, 2011; Cafaggi et al., 2012).

Respondents belong to 20 network contracts that mainly involve companies located in the same territory: 55% regard organizations located in the same region (sometimes even in the same province). This distribution is perfectly in line with national data provided by Unioncamere (De Pace, 2011), and with results obtained by a previous explorative study (Aureli et al., 2011), which revealed that the network contract is often used by firms belonging to the same industrial district and seldom contributed to creating trans-regional clusters.

Network contracts here examined counts 8 nodes on average, with a minimum amount of 2 nodes and a maximum of 19. Similar characteristics may be found in the 39 contracts representing our population: they record 6 nodes on average with a dimension ranging from 2 to 19 nodes.

Variable	Mean	Standard deviation	Median
Turnover 2010	6.585.800	6.751.500	3.990.400
Turnover 2011	6.911.574	7.773.200	2.254.500
N. of employees 2010	20,286	18,012	16
N. of employees 2011	19,286	18,012	15
Total asset 2010	7.074.400	6.822.200	6.243.200
N. of nodes	7,9	5,4570	6

Table 1 – Basic descriptive statistics of the sample

Companies of the sample belong to the manufacturing sector (mainly mechanics), followed by the service and then agriculture sectors. Most of them are located in the north of Italy (Graph 1): 23% are situated in Emilia Romagna, 14% in Lombardia, 11% in Veneto, succeeded by Abruzzo (10%) and Basilicata (10%).

At the national level, the manufacturing sector represents almost the entire phenomena (70% of total network contracts), and distribution is concentrated in Emilia Romagna and Lombardia, with the Northern part of Italy counting for about half of all companies involved in a network contract.



Graph. 1 – Italian regions with the highest number of network contracts

4.2. Network's contribution to internationalization

Regarding domestic companies, our results indicate that building formal alliances such as the network contract did not largely promote internationalization for the individual nodes interviewed (Tab. 2). Data show that only 4 out of 18 firms (22%) have begun to internationalize after signing the network contract.

The most common activities reported are: finding an export manager and/or foreign market sales representatives, participating in international trade shows, approaching some potential foreign partners, and direct export. In addition, 2 other companies have specified that, while internationalization processes and activities are underway, they have still not experienced any tangible effects.

The 14 remaining firms indicate that the network contract has not produced any new initiatives regarding internationalization.

	Network's contribution to ITZ		
	YES	NO	
Internationalized	Α	В	
firms	33%	67%	
(n. 9)	(n. 3firms)	(n. 6 firms)	
	C	D	
Domestic firms	22%	78%	
(n. 18)	(n. 4firms)	(n. 14firms)	
Tot.	26%	74%	

Table 2 – Firms that have developed international activities

Similar results emerged among the 9 firms who already had prior experience in foreign markets (33% of the responding firms). The majority of them (67%, corresponding to 6 companies) state that the network contract has not contributed to any increase in existing international operations (Tab. 2). When the network contract has impacted international activities (in just 3 cases), companies indicate that cooperation has increased participation in international fairs and exhibitions, augmented export, and raised the number of foreign market representatives.

Particularly relevant is the fact that 89% of selected companies do not believe the network contract is capable of influencing their individual international strategy—i.e., the processes or modes of market entry chosen. The only company affirming that the network contract has changed its approach to internationalization describes the adoption of a collective strategy to enter new foreign markets.

Focusing on the 9 firms which have been performing some international activities, we noticed that they are larger than the domestic ones and have been operating over national boundaries for 10 years on average (indicating a long-lasting international involvement).

Direct exportation is the most recurrent form of internationalization (56%, which correspond to 4 firms), and is usually performed through sole and multi-firm agents. Moreover, the companies surveyed export indirectly by selling their products and services to other Italian firms that operate internationally (44%), or through Italian exporters (33%). Less common is international expansion through alliances or other forms of cooperation (33%), which represents the third stage of development of Luostarinen's model (Fig. 1). Cooperation is sometimes informal (based on a "gentlemen's agreement") and never assumes the form of a joint venture or a franchising contract.



Figure 1 – Forms of internationalization

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In line with traditional SMEs' preference for simple forms of internationalization, we found that none of the companies analyzed receive foreign subsidiaries for commercialization. Foreign direct investments (FDI) are cited by only 2 companies, who utilize them for production purposes only. None of the companies investigated perform R&D activities at the international level

Regarding upstream internationalization, we noticed that only 1/3 of the 9 companies with an international orientation purchase inputs aboard; in these cases, they are mainly raw materials and components. Purchasing is usually made directly (83%), while only a minority use intermediaries or forms of international cooperation.

However, these 9 firms have a fairly large international scope: 89% work in three or more countries and 75% have international relationships outside Europe. Their propensity for international business is also demonstrated by the level of international turnover. On average, 23% of total sales are made abroad, while sometimes (for companies belonging to the mechanical sector) it peaks at 60%.

We also investigated the main reasons businesses gave for internationalization. All 9 respondents have moved beyond national borders to increase their turnover (100%), while more than half intended to avoid domestic market constraints (56%). Less important were risk reduction or market diversification through international expansion (33%). Lastly, only 11% of respondents were trying to decrease production costs. Interestingly, none of the companies analyzed decided to internationalize due to fiscal reasons (Fig. 2).





4.3. Firms' motives for networking and contract's objectives

In order to better understand the logic behind network contract usage, we posed some questions about the motives which directed the single nodes to sign the collaboration agreement.

The most important reasons are (Fig. 3): manufacturing new products together and/ or performing common R&D activities (31%), exchange of products and services among network's nodes (23%), starting common projects in marketing and distribution (15%), better access to sources of finance (8%), and information sharing (4%). No company surveyed cited international expansion as the main reason for aggregation.



Figure 3 – Expected results that motivated firms to start collaborating

To verify if internationalization was considered a less relevant reason for joining the network contract, we asked single nodes to specify other expected results deriving from network's participation. Multiple answers were possible. Results indicate that internationalization is a secondary reasons (Fig. 4) which accounts for merely 44% (12) of the total 27 companies. Other secondary motives for creating networks regard: common marketing and distribution projects (59%), information exchange and/or shared access to new information resources (44%), product and service exchange among the network's nodes (41%), and finally, the joint realization of new products and/or R&D activities (22%).



Figure 4 – Other reasons to start collaborating

Focusing on internationalization, we noticed there is not always a perfect correspondence between an individual company's purpose for signing the network contract, and the concrete

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contribution of this instrument regarding internationalization. Nor did we note that their written goals inserted into the contracts corresponded with their subsequent effects (Tab. 3). For example, among domestic firms, at least half of them expected to increase their international activities, while only 4 recorded some results. At the same time we discovered 10 firms participating to networks with international objectives among the 20 who did not record any concrete results.

	Network's contribution to ITZ			
	YES NO			
Internationalized	A (3 firms)	B (6 firms)		
(n. 9)	1*;2°	3*; 1°		
Domestic	C (4 firms)	D (14 firms)		
firms (n.18)	2*; 3°	7*; 6°		

Table 3 – Objectives of internationalization

(*) companies belonging to networks with international goals

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(°) companies attributing international expectations to network's participation

Since inter-firm relationships and the knowledge-sharing practices that usually occur inside networks can generate new unplanned opportunities, we asked all of the companies in the sample if and how the idea of internationalization eventually appeared during their involvement in the network, regardless of any written provision or prior aims for international development.

21 respondents affirmed that this topic emerged, and in 5 cases, internationalization was neither included in the network's written goals nor cited as a motive for aggregation. Internationalization mainly emerged collectively; they were either promoted by all firms (52%) or by a group of nodes (14%). Only for the remaining 33% was the issue raised by one single company, which was not necessarily the most experienced in international operations (i.e., the leading or focal firm in international matters). A discussion about internationalization emerged casually in 53% of cases (mainly during routine supplier-client relationships occurring among the network's nodes), while it was formally scheduled during a network's meeting in the remaining 47%.

The above-mentioned discourse then translated into (an) initial contact(s) with international operators for 7 companies, with 6 beginning to export a common product abroad (made with the contribution of different network nodes). Reaching an international dimension did not cause any change in firms' organizational structure (79%), except for 2 cases, in which a person responsible for international operations was introduced. In any case, all 7 companies consider these international contacts useful: they have perceived an increase in their individual international visibility (71%), they have obtained international orders (71%), and they have gained access to new distribution channels (57%).

Finally, respondents believe that the network contract can be functional for a firm's international expansion (71%), although they believe that it is too early to measure concrete effects and to come to definitive conclusions. The contract has positively affected their activities (92%) by generating knowledge sharing, learning, and new opportunities.

It is important to note that network contracts are mainly built by companies with previous

inter-organizational relationships (63%), and emerge among firms who belong to the same

value chain (i.e. client-supplier relationship); in two cases they came from equity links. Moreover, almost all networks (96% of respondents) were created by companies whose entrepreneurs had previous contacts with members of the same cultural association or actors located in the same province or region (74%).

5. In-depth analysis of different company situations

Our data indicate that the network contract contributes to starting or increasing a firm's international expansion only in a minority of cases, and rarely orients them towards foreign market changes.

Thus, we decided to better understand the reasons for such differences by closely examining the characteristics of the companies classified in Table 1. Variables elements taken into consideration were: company size (in terms of average number of employees and turnover), network size, motives for collaboration, and pre-existing links.

Group A

This group is only composed of 3 internationalized companies that have increased their international activity after joining the network. These are the largest companies with a mean of 27 employees and \in 12 million in sales.

They belong to "project networks" with 7 nodes on average. Their main reason for cooperation is the development of marketing activities, while the most common secondary reason is product exchange and internationalization (in 2 cases).

Considering that goals reported in network contracts concern internationalization only in one case (cited by a company that signed up for the contract for other reasons different from internationalization), it emerges that the network's contribution to foreign expansion is mainly unexpected in this group of companies.

Again, all companies belong to a network characterized by a focal organization with strong international experience, while 2 out of 3 declared that they had previous inter-firm relationships.

Group B

This group is composed of 6 companies performing international activities prior to the application of the network contract, but who did not register any improvement in foreign operations. Together with the companies in group A, they are the largest organizations of the sample, counting 22 units on average and a turnover of \in 8.5 million. They also belong to the largest networks (with 11 nodes on average).

Their main reason for cooperation is R&D (for 3 companies), while secondary motives are related to marketing (in 5 cases) and finance (in 3 cases). Thus, they can also be labelled as "project networks."

In 3 cases the contract's objectives regarding internationalization were present, with only one of them also expressing the unrealized expectation of foreign expansion.

All companies belong to a network where there is one leading internationalized company, while only half of them indicate having experienced previous relationships with other network's nodes.

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Group C

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This group contains domestic companies that started some international activity, thanks to network participation. They count 13 employees on average, while recording a turnover of \notin 7 million, indicating a high rate of productivity per unit. These companies belong to very small networks (3 nodes on average).

The main reason for cooperation is the exchange of products and services, while information sharing represents the most common secondary reason (cited by all 4 companies). Thus, these can be defined as "product exchange networks," which usually integrate businesses working along the same value chain as suppliers and clients, as well as "knowledge networks." Another important secondary motive for collaboration is international expansion (cited by 3 companies), which is also reported in two of the network contracts.

Foreign expansion also occurred for the one company that did not have such expectations and joined a network without formally stated international objectives.

In this case, all 4 companies of the group declared that they had previous relationships with other nodes, and that all networks to which they belong are characterized by the presence of a leading company with strong experience in international operations.

Group D

These are the smallest companies of the sample (with 19 employees on average and a turnover of about \notin 5 million), characterized by domestic operations, which belong to large networks (9,5 firms on average).

The most recurring reason for cooperation was launching common R&D activities (cited by 5 companies), while secondary motives for networking were related to marketing and distribution projects (8 companies), followed by information sharing (7 companies).

Some appear as "project networks," whose nodes undertake joint investments in order to launch common projects and share risks and costs, so as to increase their power as an entity and protect them from outside competition. Others appear as "knowledge networks," whose aim is to sustain knowledge-sharing in order to establish and improve their competitive advantages.

Although internationalization was not a stated reason for cooperation, 4 of them affirmed that they were looking for new activities in foreign markets, and, indeed, internationalization was formally included in 7 companies' the network contracts. Nevertheless, internationalization had not occurred, and the presence of a leading firm in the international field (66% of cases) did not make any difference.

It is important to note that not all companies record previous relationships: 5 out of 14 did not have client-supplier relations.

This categorization highlights that:

- The average size of a firm is related to previous individual international experience (see groups A and B). This confirms the idea that the size and maturity of a company are strictly related to its international process (Calof, 1993), but not associated with networks' ability to favour foreign expansion (as demonstrated by group C);

- Network contracts, including common international goals, are subscribed by both domestic and international companies. However, its use is more widespread among domestic businesses (9 out of 18), thus starting new international activities rather than increasing existing foreign operations of internationalized firms (in only 4 cases of a total of 9);

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- The presence of printed objectives concerning internationalization in network contracts does not always translate into concrete results. Nor are companies' individual expectations about international expansion automatically associated with subsequent foreign market entry. This suggests that the network contract may be too recent an innovation to allow firms to develop international strategies, and/or that other common projects have been given priority;

- The objectives of companies are more relevant than the written goals stated in the network contract. This is demonstrated by all 7 companies in groups A and C, which are characterized more by individual international goals (in 60% of companies) than by their networks' international orientations (in only 3 cases, corresponding to 43%). Speculatively, the 20 companies in groups B and D did not improve their international activities. This is in line with their lower personal interest in foreign expansion (35%) compared to common network goals (50%);

- Additionally, we found that the network was responsible for starting some companies' international operators (in groups A and C), though they did not plan for it nor had the contract foreseen it. This indicates that network interactions may nevertheless contribute to the identification and exploitation of new business opportunities;

- Companies that did not increase their international operations (group B and D) are characterized by R&D objectives: in this case, the network contract primarily has innovative purposes; however, these respondents also believe that the contract may contribute to internationalization, indicating that this strategy of development is not excluded;

- The presence of a leading organization with strong experience in international markets does not seem to be associated with networks' ability to favour foreign expansion, nor it is related to companies' previous activities. Actually, almost all companies within the sample belong to networks that boast a focal company. Therefore, this variable is not determinant in contrast to what has been suggested by past studies (i.e. Lipparini, 2002);

- The network's dimension, expressed in terms of nodes, seems to be slightly associated with the network's contribution to international expansion, since the companies in groups A and C belong to the smallest networks;

- The presence of prior relationships also seems to be higher among companies that declared that the network contract has increased their international operations. Thus, our sample seems to be in line with the literature (i.e. Coviello & Murno,1995 and Dana & Wright, 2004) that attributes pre-existing links to the capability of favouring reciprocal trust and consequent international expansion, although it should be noted that the larger dimension of networks may limit the existence of previous links.

6. Conclusions

The network contract seems unable to automatically and immediately change a firm's orientation towards international expansion. Either there is a gap in the contract's efficacy—probably due to its limitation to the Italian territory—which hinders the formal participation of foreign partners, or the recent birth of this legislative tool has not allowed network relationships to develop sufficiently enough to changes international strategic decision-making processes. In the latter case, network contracts may represent only the initial experimental steps toward collaborating in international expansion. This seems to be confirmed by some respondents' comments, the majority of whom positively evaluate the capability of the network contract to impact international expansion while stating that it is too early to derive conclusions.

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A different explanation for low internationalization could be attributed to companies' responses indicating that participation in the network contract was mainly driven by other reasons (i.e. innovation, marketing objectives). Thus, low international expansion is not caused by insufficient knowledge exchange, but, rather, is a matter of entrepreneurs' personal motives for collaboration. In other words, while the network contract's nodes espouse positive attitudes toward cooperation (as also demonstrated by the presence of previous interfirm and interpersonal relationships), the propensity to foreign expansion is actually scarce. Consequently, pre-existing relations can be considered a prerequisite for formal cooperation, but not a determinant variable for generating common international initiatives.

Moreover, our results indicate a general inconsistency between international goals and outcomes generated by network participation. Such an inconsistency can be both positive and negative. A positive inconsistency emerges when internationalization develops, despite the fact that the network contract did not foresee it (an "unintended outcome"); this regards both domestic and internationalized companies (A and C groups). A negative inconsistency occurs when internalization is not reached, even though it was formally planned in the network contract or included among companies' secondary aims (a "missing outcome"). Only in a few cases is there a perfect match between the international motives for networking and their actual outcomes ("best practices").

Finally, the network contract seems to stimulate an entrepreneur's ability to recognize and exploit business opportunities in different areas (i.e. product development) and markets (national and international) (Zahra et al., 2005; Kontinen & Ojala, 2011; Ozgen & Baron, 2007; Singh, 2000); it also seems to act as a driver of international development processes (Kabbara, 2007).

From a practical point of view, this study contributes to a fuller understanding of a new legislative tool aimed at supporting SME competitiveness and growth on the international level. It also provides a set of practical implications for the Italian government, which introduced this instrument to stimulate firms to take a coordinated approach in achieving common objectives without losing their independence (i.e., to innovate and strengthen their development), and to facilitate corporate dialogue across regions. In particular, the Italian government should question whether or not technical obstacles hinder the network contract's adoption among SMEs (i.e. its national limits compared to other European instruments such as the EEIG - European Economic Interest Grouping), and how it should be improved and adapted to include companies based abroad.

Indeed, from a theoretical point of view, this study contributes to confirm previous results regarding Italian SMEs' attitude toward gradual international development (Luostarinen & Hellmann, 1994), preference for export (Paoloni et al., 2005) and scarce creation of foreign sites for production purposes (Donkels et al., 1998; Gankema et al., 2000).

At the same time, we are aware that this exploratory study has several limitations. On the one hand, our current research can be deepened. First, our sample should be enlarged to include more observations. Second, it should be deepened to include additional variables that could explain internationalization such as industry sectors, partners' motives, and CEO's characteristics. Third, it is necessary to monitor networks' outcomes in the long term to verify if opportunities will be exploited. On the other hand, a qualitative analysis of "best practices" should be performed to understand how key variables and networking processes have generated positive outcomes. Both of these trajectories may be pursued in future research projects.

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TARGETING OF KEY INTEREST RATE AS A SOURCE OF CRISIS

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Abstract

In response to the world economic crisis of 2008 the authorities of many countries have launched policies of interest rate reduction through large-scale asset purchases on the open market. The paper provides an efficiency analysis of these programs as implemented in the USA, the Eurozone and the UK. It also studies the positive and negative effects of artificial key rate targeting. The author explains how changes of the federal funds rate increased bank interest rate risk and provoked the recession of 2007-2009. The results of this paper show that key interest rate adjustment can be harmful for the whole economy, and especially for financial institutions.

Keywords: interest rate targeting; financial crisis; interest rate risk; federal funds rate; commercial bank.

1. Introduction

Economic crisis, which began in the USA in 2007, negatively affected the whole globalized financial and commodity market. Deep recession and skyrocketing government debt in many countries were triggered by the mortgage crisis and stock market crash in the United States. The crisis also revealed numerous risky undertakings of the world-famous financial giants. These facts are indeed undeniable and have become the part of economic history, but one very challenging question remains unexplained: what circumstances forced managers of large and reliable banks to rush into such risky undertakings as sub-prime lending and investing huge amounts of assets in mortgage-backed securities? Of course, we could say that the bankers just made a mistake; however, the idea of mass delusion of highly skilled specialists seems to be erroneous. This paper investigates whether that reckless financial market behavior was provoked by a different factor: significant and repetitive changes of the federal funds rate by the Federal Reserve System.

One of the basic instruments of central bank monetary policy is steering the short-term money market rate with the help of open market operations. In the United States, this rate is called the federal funds rate and in the Eurozone, the main refinancing rate. It plays a very important role in the financial market, as it determines the cost of interbank overnight loans, which then influences the overall level of interest rates in the country. Thus, targeting of key

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interest rate is a powerful instrument of monetary policy. The objective of this paper is to study positive and negative effects of artificial key rate adjustment, and estimate the efficiency of such kind of monetary policy. To reach the established objective, the following research methods were employed: comparative analysis and synthesis, quantitative and qualitative approaches, observation and aggregation.

2. Literature review

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The author examined different sources of scientific literature and statistical data. Since the end of the 17th century, when first central banks began to appear, the interaction between government and central bank enables to conduct monetary policy. Literature review shows that over the period of the history there were a lot of advocates and opponents of key interest rate targeting and money supply regulation. The most well-known theorists in this area are J.M. Keynes (1936) and M. Friedman (1968). Among the prominent opponents of key interest rate targeting should be mentioned such scientists as M.N. Rothbard (2006) and J.T. Salerno (2010).

Economists that came to the agreement for the general question had different opinions about some details. For example, J.M. Keynes believed that when a new key interest rate is established it should be brought to the determinate size by open market operations. However, M. Friedman stated that open market operations should provide steady growth of monetary base, allowing interest rates to fluctuate as they will. M.N. Rothbard and J.T. Salerno were against of monetary authority intervention on the market as they thought that it causes the distortion of financial system. This paper compares and contrasts different scientific outlooks and presents the author's view of the problem.

3. Theoretical benefits of key interest rate adjustment

Let us consider monetary policy mechanism that is widely applied all over the world. If the economy falls into recession, central banks of many countries tend to lower base interest rates. According to the National Bureau of Economic Research, a recession is defined as a decrease in business activity, "lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales" (National Bureau of Economic Research, 2010). Low interest rates, reduced by a central bank, make loans more affordable and increase demand for them. The real sector of the economy gets on opportunity to raise cheap funds, which stimulates its development. As a result, unemployment falls and the Gross Domestic Product starts to rise again.

A rapid economic growth rate and an excess of consumer demand over productive capacity can lead to the "overheating" of an economy, increase inflation and consequently cause market meltdowns. In such cases, central banks usually decide to increase key interest rate. This provides monetary contraction in the economy because the cost of interbank overnight loans rises, which leads to increase in all other interest rates. Therefore, the business activity and inflation rate slow down.

In order to reduce interest rates, central banks increase the money supply by purchasing government liabilities on the open market. Thus, the amount of money in the economy grows and its cost falls, which means that loan interest rates decrease. If a central bank pursues the goal of increase in interest rates, it sells government liabilities on the open market. As a result, monetary funds raised by a central bank are recalled from circulation. The supply of

money shrinks and interest rates rise. So, at first glance, this mechanism looks simple and harmless.

4. Disadvantages of targeting the level of interest rates

Although in theory, the motivations and results of open market operations are convincing and logical, in practice, we are faced by several nuances that drastically change the picture and lead to undesirable consequences. The disadvantages of targeting the key interest rate can be illustrated by the outcomes of the Federal Reserve System's behavior in the USA. This country was chosen not only because it is the place where the global economic crisis of 2008 was conceived, but also because it has a huge stock market, which gives the USA the ability to change its federal funds rate quickly and effectively.

Theoretically, the decline of the federal funds rate stimulates economic growth, and the increase of this rate helps to combat inflation. In spite of the fact that this pattern in some cases can be really seen on diagrams in Figure 1, there are also situations in which practice differs from theory. If the federal funds rate was artificially decreased, inflation can run out of control and reach a high level, which undoubtedly hampers economic development. The rapid increase of prices doesn't allow depositary institutions to reduce the loan interest rates because they must compensate for the depreciation of money. For instance, with the considerable decline of the federal funds rate, we can observe the stagflation of the U.S. economy in 2008 (Figure 1). While the GDP was plummeting, the inflation rate was skyrocketing. On the other hand, a significant increase in the federal funds rate can lead to a slowdown or even to a drop in economic growth, as it occurred in 2005.

In other words, instead of finding out the reasons behind recession and eliminating them, the Federal Reserve System just reduces the federal funds rate. An increase in GDP, stimulated in such a way, generally results in distortion and overheating of the market. In this case, the Federal Reserve raises the federal funds rate in order to slow down inflation. This course of action usually leads to another recession. Economic downturn doesn't occur out of nowhere. Rather, it is a signal that something has gone wrong. First of all, it is necessary to understand exactly which factors are negatively influencing the business climate and make every effort to eliminate them. Instead, the Federal Reserve begins to conduct open market operations by acquiring government securities and injecting money into the economy. Therefore, interest rates fall as a result of an artificial expansion of the money supply, and not due to increased revenues from profitable projects. The Federal Reserve encourages entrepreneurs to invest in inefficient businesses that have already caused recession. Thus, motivation to cardinally change production technology and distribution systems is sufficiently reduced. Crisis should stimulate the appearance of innovations and the exit of unprofitable organizations from the market. The monetary policy of targeting key interest rate by open market operations impedes progressive changes. This measure usually has only short-term effects because, in time, old problems begin to crop up again. Only investments of real savings and resources, accumulated by the effective work of production and service spheres, can lead to stable, long-term economic growth. Similar opinions on this question were expressed by A.R.J. Turgot, J. Bentham and certain representatives of the Austrian school, including, M.N. Rothbard and J.T. Salerno.

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Source: Compiled by the author from data published by the Federal Reserve System (Federal Funds Rate), the U.S. Department of Labor (Consumer Price Index) and the Bureau of Economic Analysis (Gross Domestic Product).

Due to the world financial crisis, many countries, along with the USA, issued more government liabilities to make up the budget deficit. The United States Treasury should maintain a large amount of outstanding securities not only to raise additional money, but also in order to afford an opportunity for the Federal Reserve to conduct open market operations. This significantly increases government debt, which supposes regular interest payments. In 2011, the aggregate volume of U.S. borrowings reached \$15 trillion dollars and became approximately equal to the size of its Gross Domestic Product (International Monetary Fund, 2011). This situation led to the lowering of its credit rating and the deterioration of economic conditions in the country. Also, the Eurozone suffers from significant debt burden, which was increased in order to stimulate economic growth. For example, Portugal, Ireland, and Greece have difficulties with repayment of their borrowings.

Moreover, it is impossible to justify the huge expenditures of the Federal Reserve System that were inserted directly into commercial banks in order to fight against the lack of liquidity during the financial crisis of 2007-2010. Banks obtained \$600 billion dollars and were expected to offer more domestic loans and refinance mortgages. However, they decided to make more profitable investments and put the money into foreign currencies and emerging markets (Stiglitz, 2010). As a result, the internal problems of the U.S. economy were not solved and money flowed out overseas.

It is worth mentioning that there is time lag of 6–9 months between the announcement of a new federal funds rate and its appearance at that level on the interbank market. Therefore, the Federal Reserve System must foresee changes in the economy and take measures to prevent recession or reduce inflation before those events happen in reality. That being said, the possibility for error in such forecasts always exists, and monetary policies that can be very expensive may lead to negative results.

All of the above-mentioned disadvantages of targeting key interest rate exert influence
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on the general condition of a country's economy, but they are especially detrimental to the financial system. An artificial change in key rate throws the market off balance. Commercial banks sometimes don't have enough time to readjust for new conditions due to many reasons. Thus, key rate changes sufficiently increase all sources of bank interest rate risk such as repricing risk, yield curve risk, risk of embedded options and basis risk.

5. Artificial changes in the federal funds rate provoked financial crisis

The diagram of GDP percent change in Figure 1 shows that in 2001 a noticeable economic downturn caused by mass shares depreciation of internet trading companies occurred in the USA. Consequently, hundreds of organizations, which worked through websites and were referred to as dot-coms, became bankrupt, and were liquidated or sold. This happened because most business models of internet companies were inefficient and the money that was made on the stock market was spent on marketing campaigns and advertising. On September 11, 2001, a cruel act of terrorism also shook the U.S. economy. And finally, the large American companies Enron and WorldCom collapsed as their huge illegal overstatement of profits was disclosed.

At first glance, the problems of the USA that caused recession in 2001 seem to be rather serious; however, close scrutiny reveals that they were relatively local and temporary. The bankruptcy of unprofitable internet companies made room for more efficient businesses, which sought for investments. The events of September 11 were a huge shock, but they did not have a long-term negative influence on the economy. Financial statements falsifications could be eliminated by increasing legislative pressure and government control. However, authorities considered these measures insufficient and decided to stimulate GDP growth by decreasing the federal funds rate.

A small reduction in the key interest rate probably would not harm the financial system, but the fall of the federal funds rate by 5.5% (from 6.5% to 1%) over the period from January 2001 to June 2003 (Figure 1) had a significant negative effect. Depository institutions usually have a large variety of assets and liabilities, which mature and reprice at different times. Thus, the extremely sharp 4% decline in rates, which lasted 11 months, from January to November 2001, placed considerable stress on the market and significantly increased so called repricing and yield curve risks. If, during that period, a bank expected more assets than liabilities to be redeemed or repriced, it suffered from a reduction in profits. For example, rate sensitive liabilities are equal to 100 million dollars and bear 7 percent interest per annum. These payments for commitments are financed by 150 million dollars of rate sensitive assets that earn 10 percent per annum. The bank net interest income is equal to 8 million dollars. If interest rates fall by 4%, after the redemption and reprisal of financial instruments, the new rates will be equal to 3% and 6%, respectively. So, the net interest income will decrease from 8 million dollars to 6 million dollars.

It could be worse if a bank financed long-term uncallable liabilities with fixed rates by short-term assets. Long-term rates of commitments would stay, for example, at 7% and short-term rates of earning assets would fall from 10% to 6%. Thus, interest income would not cover interest expense anymore and the bank would suffer losses. In this situation, the yield curve of the bank portfolio would steepen as the difference between short-term and long-term rates would temporary increase. Although depository institutions are notified about coming decreases or increases in the federal funds rate, it can be very difficult and costly for them to change the balance structure in order to reduce interest rate risk. Of course, a drop in the interest rates level can put some banks in favorable positions. If a bank has more rate-sensitive liabilities than rate-sensitive assets (that is, if it finances short-term liabilities with long-term

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assets), it may increase profits until the borrowers start to refinance their loans at lower rates.

Thus, the real sector of the economy actively incurred debts in 2002, while commercial banks were gradually losing their profits. With the decline in rates, they earned less income on assets and had to pay higher interest on liabilities, which were attracted, for example, one year earlier. Since the rates had been diminished, individuals and entities borrowed money more willingly. Mortgage loans gained special popularity. In addition, many American homeowners used this opportunity to refinance their loans. Banks, on their part, could not unilaterally dissolve agreements for long term deposits, which still were bearing high interest rates. Thus, the interest rate risk of depository institutions continued to grow.

In Figure 2, we can perfectly observe the inverse relation between changes in the federal funds rate and the constant prepayment rate (CPR). The CPR shows the share of loan principal that will be refinanced or prepayed during the next 12 months. With a decrease in the federal funds rate and the consequent decrease in the mortgage loans rate the percent of refinanced borrowings rises. And vice versa, with an increase in the federal funds and mortgage rates, the share of refinanced loans falls. The same correlation can be retraced for all callable liabilities acquired by depositary institutions. The probability of financial instruments' early redemption or withdrawal is called the risk of embedded options; that is one of the main interest rate risks of commercial banks. The monetary policy of the Federal Reserve System provoked an increase in the refinancing and prepayment rate in 2002 - 2005, which reached its peak in 2003 (Figure 2), when borrowers refinanced 70% of mortgages lent in this year (Hedberg et al., 2010).





Source: Compiled by the author from data published by the Federal Deposit Insurance Corporation (Quarterly Banking Profiles) and the Office of Thrift Supervision (Selected Asset and Liability Price Tables).

The necessity of refinancing loans at lower rates forced banks to search for alternative sources of funds. This situation caused an increase in demand for mortgage-backed securities. These financial instruments offered an opportunity to slow down the decline in net margin due to interest spread drop. However, the aggregate net interest margin of depository institutions in the USA continued to fall. From the beginning of 2002 to the end of 2005, margin decreased by 60 basis points (Federal Deposit Insurance Corporation). The issues of collateralized mortgage

obligations enabled banks to receive money back quickly without waiting for the date of loan repayment and invest these funds again to obtain additional income. The risk of mortgage securities defaults was successfully hedged by credit derivatives. Over the period from 2000 to the present time, the amount of credit derivatives in securities portfolios of commercial banks has increased by 55 times (Office of the Controller of the Currency).

As we can see in Figure 3, from 2000 to 2007 the mortgage-backed securities market developed rapidly. It is necessary to note that, in 2005, demand for mortgage loans began to decline, as the majority of the creditworthy population had already borrowed money and bought houses. However, it was difficult to abandon issuing and purchasing mortgage-backed securities and other collateralized debt obligations, as the demand for them grew rapidly. Besides, banks needed additional sources of funds, as they were involved in financial difficulties caused by U.S. monetary policy. At first, the Federal Reserve System significantly decreased the federal funds rate, and then, after obtaining the desired rise in GDP, it began to increase the key rate (Figure 1). By that time, commercial banks had already lent a large amount of long-term mortgage loans at low interest rates and were faced with the problem of how to conduct payments for new deposits with high interest rates. Thus, the gap between earnings on assets and costs of liabilities narrowed and net interest income fell. The Federal Reserve considerably increased repricing and the vield curve risk of depository institutions by raising the federal funds rate from 1% to 5,25% over the period from June 2003 to June 2006 (Figure 1). Since the demand for housing was almost satisfied, banks had no choice but to offer mortgages to subprime borrowers with unconfirmed incomes and without initial payment. This decision was provoked by high demand for mortgage securities, which gave banks an opportunity to earn necessary profits.

In December 2005, the market yield curve reversed due to the skyrocketed federal funds rate and open market operations of the Federal Reserve. This meant that short-term rates exceeded long-term rates. Since 1968, the lag between an inversion of the U.S. Treasury yield curve and the beginning of a recession has been, on average, equal to 14 months (National Bureau of Economic Research, 2010). Last recession started after 24 months, on December 2007. Probably this lag was larger in comparison with others because the yield curve was flat or slightly inverted for a long time prior the beginning of the recession.





Source: Compiled by the author from data published by the Federal Deposit Insurance Corporation (Quarterly Banking Profiles).

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Since World War II, only twice has the yield curve inverted without being followed by a recession. This occurred in 1965, during the Vietnam War, and in 1999, when the U.S. Treasury announced a program to buy back outstanding long-term Treasury bonds (Koch et al., 2010). Monetary authorities usually explain that they change the key interest rate in order to smooth business cycles amplitudes. This can be reasonable if monetary policy doesn't lead to an inversion of the yield curve. Long-term financial instruments are riskier than short-term ones, and this should be reflected in the size of their interest rates. Many analysts attribute the lack of recession during the Vietnam War to massive federal government spending. An increase in state expenditures can help to fight recession, but it is better to invest in the public goods and develop the infrastructure of a country rather than finance wars or conduct large-scale open market operations.

Changing the key rate also influences basis risk, which "arises from imperfect correlation in the adjustment of the rates earned and paid on different instruments with otherwise similar repricing characteristics" (Bank for International Settlement, 2004). Depository institutions hold assets and liabilities with fixed and floating interest rates. While the Federal Reserve System was decreasing the federal funds rate between 2001 and 2004, fixed rates on outstanding financial instruments remained constant, but floating rates (especially those tied to the federal funds rate) were decreasing. Borrowers turned out to be in a beneficial situation, while commercial banks were losing their incomes. When the Federal Reserve was raising the key interest rate from 2005 to 2006, many borrowers, who had mortgage loans with floating rates felt that their debt burden had become overwhelming and gradually stopped paying it. As a result, the amount of past due loans increased (Figure 4).

Moreover, it is worth mentioning that real estate prices grew constantly until 2006. Less reliable borrowers purchased houses at higher prices and took loans with higher rates as the Federal Reserve started to increase the federal funds rate (Figure 1). By the time that monetary policy had affected inflation and real estate prices began to decline, the size of many homeowners' debts exceeded the real cost of their residential property. Since that time, there has been no benefit from purchasing houses on credit. As prices were constantly falling, after a while, the loan principal became larger than the market price of a house, and, in addition, the borrower had to pay interest. It is not surprising that the amount of past due loans skyrocketed. In Figure 4, we can see the correlation between a decrease in house prices and a rise in the number of mortgage payments that were delayed by more than 90 days. Consequently, the credit rating of mortgage-backed securities was reduced in December of 2006, and in 2007 mass defaults began. Financial institutions in the USA and other countries also suffered losses because they had issued credit derivatives for hedging asset-backed securities. As collateralized mortgage obligations of U.S. organizations were sold all over the world, the indexes of many stock exchanges considerably decreased, which negatively influenced the global economic conjuncture.





Source: Compiled by the author from data published by the Federal Deposit Insurance Corporation (Quarterly Banking Profiles) and the Federal Housing Finance Agency (FHFA Seasonally Adjusted House Price Index for USA (1991 Q2 – 2010 Q4)).

The Federal Reserve System decided to struggle with the crisis of 2007 using old methods and again significantly reduced federal funds rate from 5.25% to 0.25% over the period from June 2006 to December 2008 (Figure 1). These changes increased the interest rate risk of depository institutions, distorted the market, and deprived entrepreneurs of any stimulus to develop innovations in order to deal with the situation. By the end of 2011, the Federal Reserve policy of targeting key rate hadn't led to a considerable rise in GDP (Figure 1). However, inflation continues to grow, which explains the small upturn of the GDP percent change in the USA. In order to fight against increases in inflation, the Federal Reserve System will probably start to raise the federal funds rate and cause new problems for the whole economic system all over again.

6. Comparative analysis of key rate targeting in the USA, the Eurozone and the UK

The pattern of Federal Reserve policy is also actively implemented by the monetary authorities of other countries. The correlation between different target rates is illustrated in Figure 5. If we compare the fluctuations of the federal funds rate in the USA and the main refinancing rate in Europe, we notice that the European Central Bank follows the trend of Federal Funds System, but with smaller amplitude of oscillations. Thus, the more conservative monetary policy of the Eurozone may smooth some considerable negative effects of key interest rate targeting, but they nevertheless can damage the economy.

The base rate is the only rate that is artificially established by the Bank of England and is used for enacting monetary policy. The size of the LIBOR (London Interbank Offered Rate) is determined by the market without interventions of regulatory authorities, as opposed to the effective federal funds rate, which is targeted by the Federal Reserve. In Figure 5, we can

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observe that during the reviewed period, the base rate in the UK was much more stable than in the Eurozone and the USA until 2009. Due to the world financial crisis, the United Kingdom decided to follow the example of other countries and the base rate plummeted to 0.5% (The Bank of England).





Source: Compiled by the author from data published by the Federal Reserve System (Intended Federal Funds Rate), the European Central Bank (Key ECB Interest Rates) and the Bank of England (Official Bank Rate History).

In December 2008, the United States launched a program of government securities purchasing by open market operations, called "Large Scale Asset Purchases" (LSAPs). The total value of this program rose to \$2.6 trillion over a period of three years, from 2009 to 2011. In March 2009 the United Kingdom joined the USA and implemented a program referred to as "Quantitative Easing" (QE). In the time leading up to 2012, the Bank of England purchased £275 billion and "at its meeting in February 2012 the Committee decided to purchase £50 bn to bring total asset purchases to £325 bn" (Joyce et al., 2011). Also, in July 2009 the Eurosystem launched the "Covered Bond Purchase Program" (CBPP) in to order to purchase euro-denominated covered bonds and, since May 10, 2010, it has conducted interventions in debt markets under the "Securities Markets Program" (SMP). The sum of total operations in the euro zone reached €415 billion by the end of 2011 and continued to increase (European Central Bank, 2011). All above-mentioned asset purchases were unsterilized, which means that monetary authorities electronically created new uncovered money in the accounts of security sellers. Thus, it is not surprising that in Figure 6 we can see a rise in inflation that is higher than increase of the nominal GDP in all reviewed countries.

Moreover, the scale of asset purchase programs exceeded the amount of nominal GDP growth more than twice (Figure 6). If these programs didn't stimulate the economic growth enough to cover the inflation rate, it is reasonable to consider them rather ineffective. A money supply that has been increased by open market operations makes loans cheaper and lowers

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the market competition. Therefore, it doesn't encourage entrepreneurs to implement new technologies. They produce the same goods and services using the old inefficient methods that have already led to crisis. The Eurozone achieved higher levels of GDP growth in comparison with the scale of asset purchase programs (Figure 6). This can be explained by the fact that the European Central Bank mainly purchased privately issued bonds (Beirne, et al., 2011). Thus, it directly financed the private sector of economy. The Federal Reserve and the Bank of England, on the other hand, purchased government securities, which encouraged speculation and caused money to flow out overseas.





- The Scale of Asset Purchase Programs (in percent of nominal GDP 2008)
- Nominal GDP (percent change)
- Inflation (percent change)

Source: Compiled by the author from data published by the Federal Reserve Bank of New York (Large-Scale Asset Purchases), the European Central Bank (Open market operations), the Bank of England (Quantitative Easing Explained), the Eurostat (Gross Domestic Product, Harmonized Indices of Consumer Prices (HICP)), the U.S. Department of Labor (Consumer Price Index).

According to monetarists, expected inflation may occur in the case of regular money injections into economy (Friedman, 1968; Muth, 1961). Producers and sellers establish higher prices on resources and goods beforehand, as they anticipate that authorities are going to increase money supply, which will definitely enlarge effective demand. People begin to buy goods at higher prices, and, consequently, the inflation rate grows. In such situations, central banks should try to deceive market expectations. However, if depository institutions and other financial organizations are not informed about the scale of asset purchase program, they will suffer from interest rate risk.

The policy of key interest rate targeting should not be the main method used to recover from recession or to struggle with inflation. It can be successfully supplemented or substituted by tax regulations, as the neoclassicists proposed (Ando, 1974). Figure 6 shows that large-scale injections of money increased inflation to more than the Gross Domestic Product. Thus, implementation of a Keynesianism proposal to pump money into the economy without any restrictions can lead to negative consequences (Keynes, 1936). However, the proposal of the

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Austrian school to return to the gold standard (Rothbard, 2006) is also impossible nowadays.

The monetary policy of key rate targeting can be harmless only if it does not significantly increase the fluctuations of interest rates. While the economy is experiencing growth, the government should accumulate monetary reserves in order to spend them during times of recession. It is easier to cope with crisis if authorities reduce taxes, invest in the development of alternative energy sources, high tech and core industries, which enable the country to be competitive on the global market.

7. Conclusion

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The conducted research has proven that key rate targeting by monetary authorities can significantly harm the whole economy and especially its financial system. Although open market operations are theoretically intended to fight inflation with the help of high rates and to stimulate business activity using low rates, they can cause a lot of negative effects, such as:

- an increase in the interest rate risk;
- a distortion of market;
- a rise in inflation;
- a slowdown or even drop in economic growth;
- investment in inefficient projects;
- low motivation for cardinal changes and innovations;
- an increase in government debt;
- the consequences of mistakes in market forecasts.

A historical analysis of federal funds rate adjustment shows that the World Financial Crisis occurred in many respects due to the rise of the main sources of interest rate risk. Firstly, sharp changes in rates increase the repricing risk, because the assets and liabilities of depository institutions mature and reprice at different times. Thus, cash flows alter as instead of redeemed financial instruments appear new ones with changed interest rates. Secondly, key interest rate targeting activates the risk of embedded options. If rates are lowered, this can cause massive refinancing of loans and callable securities. If rates are raised, clients will withdraw deposits and invest them again at a higher interest rate. Thirdly, basis risk increases, as some floating rates of bank assets and liabilities change according to the size of the federal funds rate, and some are tied to different basic rates, which can lead to a considerable narrowing of interest spread. Fourthly, federal funds rate adjustment influences market expectations and raises the risk of changes in the shape and slope of the yield curve. In particular, if a monetary authority increases the key rate, yields of short-term financial instruments can exceed the yields of longterm financial instruments. Thus, the yield curve inverts and the market becomes distorted, as long-term rates should be higher than short-term because lending money for a longer period of time carries a higher risk.

It is difficult to deny that a change in key rate often enables an economy to reach desirable results for a limited period of time. However, the true causes of recession or the "overheating" of the economy are not eliminated. The real sector loses its stimulus to foster innovations and carefully choose investment projects because monetary authorities reduce the cost of money. As a result, unsolved problems begin to occur again after a while. What is more, significant errors in the forecasting of market behavior are possible since there is a time lag between the establishment of a key rate and its implementation. Thus, the danger of a rise in inflation or

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slowdown of economic growth presents itself. Furthermore, open market operations are possible only if a fairly large amount of government securities was issued, which leads

to an increase in government debt. All of the above-mentioned negative consequences of artificial key rate changes deteriorate the economic conjuncture of the country and engender various risks.

In all likelihood, instead of targeting interest rate level, authorities should invest money in infrastructure and develop core industries. Interest rates would then fall naturally due to an increase in real savings from profitable projects. Injecting money into the economy through open market operations does not always lead to the growth of effective production. However, it usually feeds speculators and creates financial bubbles. Keeping this in mind, the USA, the Eurozone, the UK and many other countries should revise their monetary policy.

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THE IMPACT OF EU MEMBERSHIP ON THE FINANCIAL PERFORMANCE OF BUSINESS FIRMS IN CENTRAL AND EASTERN EUROPE

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Abstract

This paper examines how European Union (EU) membership impacts the financial performance of business firms in the emerging economies of Central and Eastern Europe. In 2004, the European Union welcomed ten additional members: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia. This was the largest enlargement in the history of the European Union. This study examines whether business firms from those ten countries improved their financial performance since joining the EU. It intends to empirically demonstrate that the profitability of the business firms increased since the ten countries joined the EU. Quarterly data on assets, short and long term liabilities, and common equity were collected. Data was collected for the period 2001- 2009. Econometric methods were used to determine the efficiency and profitability of these companies. The results of this study indicate that the companies benefited from joining the European Union.

Keywords: Financial Performance, Financial Ratios, Efficiency, Profitability, European Union

1. Introduction

In the fifth and largest European Union enlargement, ten new countries joined the European Union (EU) in 2004. Eight of the ten countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia) were former communist Central and East European (CEE) countries, while the other two, Cyprus and Malta, were not. After joining the EU, the firms of these ten countries faced increased competition. There is little research on the impact of EU membership on the financial performance of business firms of these ten countries since joining the EU. This paper examines the financial performance of the some of the firms listed in the stock exchanges of these ten countries to see whether their performances improved after they joined the EU. Using the financial data of these firms, the paper attempts to show if the

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firms were able to cope with the stiff competition in the EU single market.

The quarterly data on assets, short and long term liabilities, common equity, and profits of the companies located in those ten countries were collected from the Compustat database for the period of 2001-2009. Compustat is a database compiled by Standard & Poor's which collects data on financial indicators of companies listed in the stock exchange of different nations.

This paper examines whether the operating efficiency of the listed firms from those ten countries improved since they joined the EU in May 2004. The Wilcoxon signed ranked test was utilized to test whether these firms improved their financial performance after they became EU members. Furthermore, a panel data regression model was developed and tested to examine whether the accession to the EU affects the financial performance of business firms (the effect of joining the EU on each of the above ratios). The analysis shows that companies in those ten European countries were improving their financial performance prior to joining the EU. However, some of the improvement in financial performance can be attributed to joining the EU. The paper is divided as follows: The first section provides a review of literature followed by a description of our data and methodology. The results and interpretation section describes the empirical results from the analysis. The final section of the paper offers a summary and conclusions.

2. Review of Literature

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In 2004, the European Union welcomed ten new members to the union. However, the process of getting the countries ready to join the EU took a long time. By the year 1989, the EU began to have closer ties with the Central and Eastern European countries. Import quotas were removed to assist these countries in their preparations for admission to the European Union. In 1989, the Poland and Hungary: Assistance for Restructuring their Economies (PHARE) program was instituted to help these countries transition to market economies. It provided economic and technical assistance as well as support for infrastructure investment to recipient countries. Bilateral treaties between Central and Eastern European countries and the EU were formed and as a result, trade between these former communist countries and the EU flourished. Subsequently, in 1993, the European Council decided that these countries could become a part of the EU if they were willing to undertake some reforms. In 2000, the countries of Bulgaria, Latvia, Lithuania, Romania, and Slovakia were also allowed to join the EU if they fulfilled some reforms. In 2004, ten countries became members of the EU (Tomfort, 2006).

Prior to entering, foreign direct investment (FDI) inflows to those ten countries increased by a large extent (Bevan et al, 2001). Therefore, anticipating the change, local firms may have had adjusted their business practices to remain competitive once they join the EU. Therefore, analysis of financial performance pre- and post-EU accession may have some problems if companies keep on improving performance way before joining the EU. Also, as noted by Tomfort (2006), Central and Eastern European countries were able to have a higher level of financial integration than South-Eastern European countries. This can also have an effect on the financial performance of the institutions listed in the stock exchange. However, this paper counterbalances this problem by considering a long period of data starting from 2001, thus, the actual improvements of firms can be examined prior to and post EU accession. Some researchers study the financial performance or operating efficiency of firms after they undergo drastic changes such as privatization. Boubakri and Cosset (1998), D'Souza and 📲 ournal of economic behavior = vol. 2, 2012 💻

Megginson (1999), and Megginson et al. (1994) study the performance of firms before and after they were privatized to see whether their financial performance has improved.

The authors use the Wilcoxon signed-ranked test to measure whether, on average, the financial performance of these firms had improved after they were privatized. In another study, Megginson (2010), reviews research on how privatization programs have altered the size and efficiency of international financial markets in the past three decades.

European Union (EU) membership brings many economic benefits to companies, including economies of scale, larger markets, access to financial institutions within the European Union, and more foreign direct investment (FDI) flows. In the past two decades, in the European Union, privatization programs have made considerable progress. The privatization benefits include an increase in efficiency, productivity, and liquidity in the financial markets. Regarding the effects of privatization on the performance of companies, Djankov and Murrell (2002) conducted an extensive survey on enterprise restructuring in transition. They found that privatization tends to improve firm performance.

Some other researchers such as Vasigh and Haririan (1996) attempted to compare efficiency of privatized and government-owned airports. Their financial data on British and American airports (both publicly and privately-owned) included operating costs, profits, and revenues. They found that privatized airports have higher financial efficiencies (revenue per passenger and revenue per landing) than publicly-owned airports. In another study by Vasigh and Haririan (2003), they investigated the financial and operational efficiency of private versus public airports. They measured airport performance by comparing the efficiency of privatized and government-owned airports through ratio and regression techniques. Vogel, in his 2006 study, focused on the relations between airport privatization and financial performance. He assessed the impact of the degree of privatization on the financial performance of European airports. By comparing privately to publicly owned airports, he found privatized airports were more cost-efficient. In a study by Vasigh and Gorjidooz (2006), productivity was tested in public and private airports using American and British airports. Their concluded that productivity and efficiency of airports depend, among other factors, on the level of competition in the environment that they operate.

3. Data and Methodology

In order to perform our statistical analyses, data on assets, long-term and short-term liabilities, common equity, and profits were collected. The quarterly financial data were retrieved from the Standard and Poor's Compustat Database File for the time period of January 2001–June 2009 (www.compustat.com). There are a total of 5,470 observations between the years (number of firms in each country -- Cyprus: 224, Czech Republic: 200, Estonia: 370, Hungary: 639, Lithuania: 515, Latvia: 497, Malta: 134, Poland: 3047, Slovakia: 80, and Slovenia: 286).

In measuring the financial performance of firms, the following financial ratios were used:

I. Liquidity Ratios

Liquidity ratios provide information on the ability of a firm to meet its short-term financial obligations. Liquidity can be measured by several ratios; we used the Current Liability-to-Asset (CL-to-A) Ratio. This ratio is calculated by dividing total liabilities by total assets. The ratio shows the percentage of a firm's assets that are financed by debt, with the remaining being financed by equity. It represents the firm's borrowing capacity in the capital market.

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II. <u>Profitability Ratios</u>

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Profitability ratios provide information about the firm's overall efficiency and performance. These ratios are used to evaluate the ability of a company to manage its expenditures. In our analysis, we used the following ratios: 1) <u>Return on Assets (ROA)</u>. The return on assets ratio illustrates the profitability of a firm relative to its total assets (profits made on investment of firm's asset). The ROA ratio is calculated by comparing the firm's net income to its total assets. The higher the ROA ratio, the more efficient is the firm. 2) <u>Return on Equity (ROE)</u>. The return on equity (ROE) measures the profit earned for each unit of currency invested in the firm's stock. The ratio is calculated by dividing the firm's net income (after preferred stock dividends but before common stock dividends) by total shareholders' equity (excluding preferred shares). The higher the ROE ratio, the more efficient is the firm. 3) <u>Return on Common Equity (ROCE)</u>.

This ratio measures the rate of return earned on the owners' investment, excluding preferred stockholders (net profitability of common stockholders' investment after preferred dividends). The ROCE is calculated by dividing the firm's net income available for distribution to shareholders (net income reduced by preferred dividends) by common equity. A high ROCE can indicate that a larger portion of profits are reinvested back into the company. The higher the ratio, the more efficient the company is in generating profits from its investment.

III. Financial Leverage Ratios (Debt Ratios)

Financial leverage ratios provide information on the ability of a firm to meet its financial obligations (measuring its financial risk). These ratios measure the extent to which a business firm is utilizing its long-term debt. They indicate the long-term solvency or leverage of the company. We used the following two measures of leverage ratios: 1) <u>Debt-to-Asset (D-to-A)</u> <u>Ratio</u>. This ratio is calculated by dividing a firm's total liabilities by total assets. It indicates the percentage of a firm's assets that are financed by debt. The higher this ratio, the greater is the risk associated with the firm's performance. It may also indicate low borrowing ability of the firm. 2) <u>Debt-Equity (D-to-E) Ratio</u>. The debt-to-equity ratio indicates the proportion of a debt and equity that the company uses to finance its assets (the proportion of a firm's assets that are financed by dividing total liabilities of a firm by its stockholders' equity. The ratio can be used to determine the ability of a firm to generate new capital. That is, firms with higher debt-to-equity ratios may find it difficult to raise additional funds in the capital market. 3) Long-term Debt-to-Asset Ratio (Lt-D-to-A). This ratio measures the percentage of the firm's assets that are financed by long-term debt.

A simple scatter-plot provides some idea of the financial performance of firms around the time of EU accession. Figures 1, 2, and 3 show the scatter-plots of the quarterly return on asset, return on common equity, and the return on equity respectively of the firms located in those ten countries for the years 2001 through 2007. Apart from a few outliers (which are excluded to keep the range within normal limits), most of the data points are positive, showing that most of the firms enjoyed profits during this time period. This indicates that firms continued to enjoy profits before and after the actual date of joining the EU.

By utilizing the financial ratios of the business firms in those ten countries, the Wilcoxon signed-rank test will be performed to show whether all these financial ratios have increased in value between different years. Furthermore, a panel data regression model will be tested with these values to determine the effect of joining the EU on each of these ratios.





Figure 2 - Return on Common Equity



Figure 3 - Return on Equity



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4. Empirical Results

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The Wilcoxon signed-rank test was performed to show whether the financial ratios, return on assets (ROA), return on equity (ROE), and return on common equity (ROCE), increased in value between the two time periods used in this study. Furthermore, a panel data regression model was developed and tested to examine whether the accession to the EU affected the financial performance of business firms (the effect of joining the EU on each of the financial ratios). The results of the Wilcoxon signed-rank test show that these companies were able to improve their financial performance after they joined the EU. We used two ways to conduct the signed ranked test. First we hold the initial date constant, and then compared the financial performance of firms since they joined the EU with that initial date. Then, we altered the initial date to compare the performance of firms in different time periods. The results are presented in tables 1, 2 and 3. The test examines the two samples of data at different time periods to determine whether the data were significantly different from one another. The tables list the t-values of the analysis. All statistical analyses in this paper were performed using the Stata: Data Analysis and Statistical Software package (www.stata.com).

	3/31/2004- 9/30/2004	9/30/2003- 3/31/2005	3/31/2003- 9/30/2005	12/31/2002- 12/31/2005	9/30/2001- 3/31/2006
ROA	5.897*	3.337*	3.471*	3.07*	2.883*
ROCE	4.951*	2.984*	3.25*	2.574*	2.034*
ROE	5.762*	2.747*	3.941*	3.016*	3.025*
CL-to-A	-0.906	-2.218*	-1.053	-0.567	-0.081
Lt-D-to-A	0.514	-0.405	-1.061	-0.4	-2.414*
D-to-E	0.334	-0.189	-1.413	-0.957	0.393
D-to-A	0.349	-0.094	-0.9	-0.471	0.692

 Table 1 – Wilcoxon Signed-Rank Test Results Comparing the

 Financial Ratios at Different Dates

Dates are in MM/DD/YYYY format. Asterisks indicate significance at the 5% level.

Table 1 compares the results of different Wilcoxon-signed rank tests. For example, the second column shows the t-values computed using the financial ratios between the dates 3/31/2004 and 9/30/2004. Therefore, the second column measures the financial performance of firms about 3 months before and after joining the EU, the third column measures the performance about 6 months before and after joining the EU, and so on. Based on this test, it seems that performance of ROA, ROCE and ROE improved significantly or stayed the same (the t-values not being significant) for all time periods. Current liabilities to asset and long-term debt to asset ratios either stayed statistically the same or decreased. Debt-to-equity and debt-to-asset ratios did not change significantly. From this analysis, it seems that companies improved their profitability after the countries joined the EU. Firms did not increase their leverage, or in some cases, actually reduced their leverage. This shows that, on average, the companies performed well after they joined the EU. These countries were able to earn higher profits per unit currency of asset and equity right after joining the EU.

The Wilcoxon signed-rank test was performed by keeping the date prior to joining the EU

fixed and comparing the financial ratios of that date with the dates after joining the EU. Table 2 shows the results for which the initial date was fixed at March 31, 2004:

	3/31/2004-	3/31/2004-	3/31/2004-	3/31/2004-	3/31/2004-
	3/31/2005	3/31/2006	3/31/2007	3/31/2008	3/31/2009
ROA	-0.945	-0.351	0.237	-1.192	-5.294*
ROCE	-1.335	-0.895	-0.495	-1.937	-5.437*
ROE	-1.416	-1.115	-0.815	-2.45	-6.156*
CL-to-A	-1.05	-1.548	-1.183	-1.463	-1.63
Lt-D-to-A	0.255	0.067	-0.276	-0.298	0.361
D-to-E	-0.004	-0.51	-0.035	0.251	0.484
D-to-A	0.342	-0.022	0.289	0.491	0.929

Table 2 – Wilcoxon Signed-Rank Test Results Comparing the Financial ratios with the Initial Date Fixed at March 31, 2004

Dates are in MM/DD/YYYY format. Asterisks indicate significance at the 5% level.

Table 2 reveals that most of the results of the rank test are not significant except for the ROA, ROE, and ROCE between the dates March 31, 2004 and March 31, 2009. The fall in profits in this case can be attributed to the recession that a number of countries had experienced in 2009 due to the global economic slowdown. Therefore, it can be attributed from this table that companies were improving their efficiency before they had actually joined the EU. Thus, the financial ratios just before joining the EU are not significantly different from those ratios following the accession. To test whether firms really improved their performance, the above test was repeated except that the initial date was fixed at June 30, 2001. The results are shown in Table 3.

Table 3 – Wilcoxon Signed-Rank Test Results Comparing theFinancial Ratios with the Initial Date Fixed at June 30, 2001

	6/30/2001-	6/30/2001-	6/30/2001-	6/30/2001-	6/30/2001-
	0/30/2003	0/30/2000	0/30/2007	0/30/2000	5/51/2007
ROA	2.404*	2.512*	2.883*	1.457	-3.985*
ROCE	1.827	1.756	2.034*	0.605	-4.56*
ROE	2.722*	2.588*	3.025*	1.531	-4.088*
CL-to-A	0.065	-0.305	-0.081	-0.416	-0.5
Lt-D-to-A	-1.964*	-1.756	-2.414*	-1.429	-1.398
D-to-E	0.173	0.03	0.393	0.675	0.889
D-to-A	0.721	0.527	0.692	0.933	1.174

Dates are in MM/DD/YYYY format. Asterisks indicate significance at the 5% level.

The results in Table 3 show that ROA, ROCE and ROE increased in value significantly until 2008. In 2009, the values decreased due to the effect of a global economic slowdown.

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Long- term-debt-to asset ratio decreased or stayed statistically the same and the rest of the values are not significantly different. This table also reveals that when comparing the financial ratios of 2001 with those after joining the EU, companies generally did much better. Firms had started improving their performance after 2001 and continued to do so until 2008.

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The next question is whether this improvement in financial performance was due to joining the EU or to sustained economic growth and other business-friendly factors that these countries experienced during the study period. An auto-regression model was developed and tested to evaluate whether the accession to the EU really affected the financial performance of these firms.

The following model is used to examine the financial performance of the business firms:

$$\mathbf{X}_{t} = \boldsymbol{\beta}_{0} + \boldsymbol{\beta}_{1} \mathbf{X}_{t-1} + \boldsymbol{\beta}_{2} \mathbf{X}_{t-2} + \mathbf{B}_{3} \mathbf{D}$$

where X_t is any of the variables ROA, ROCE, ROE, CL-to-A, Lt-D-to-A,

D-to-E and D-to-A respectively at time period *t*. β_i are the coefficients, where $i = \{0, 1, 2, 3\}$ and *D* is the dummy variable which is 1 to indicate the time period after joining the EU and 0 otherwise.

The above equation can be estimated to measure the effect of past performance of financial ratios on present performance, and whether joining the EU, as represented by the dummy, had any effect on those financial ratios. A panel data regression was then performed to estimate the effects of each of the independent variables on the dependent variable and the empirical results are shown in Table 4.

	ROA	ROCE	ROE	CL-to-A	Lt-D-to-A	D-to-E	D-to-A
Constant	0.007*	0.1290	0.0597	0.1595*	0.0366*	0.9080	0.0858*
Constant	(0.0044)	(0.0915)	(0.0788)	0.0107	(0.0084)	(0.6577)	(0.0132)
Lagged one	1.0375*	0.0002	-0.0036	0.4026*	0.6709*	0.052	0.6799*
Period	(0.0354)	(0.0097)	(0.0099)	(0.0301)	(0.0416)	(0.143)	(0.0315)
Lagged	-0.3180*	0.0610*	0.0599*	0.1678*	0.0648	-0.259 *	0.1442*
two Periods	(0.0466)	(0.0099)	(0.0102)	(0.0305)	(0.0402)	(0.073)	(0.031)
EU	0.0158*	0.0321	0.1141	-0.032*	-0.0036	0.1234	-0.0145
Dummy	(0.0049)	(0.0975)	(0.0854)	(0.0073)	(0.0073)	(0.6704)	(0.0078)

Table 4 – Regression Results. Auto-Regression of Different Financial Ratios

Standard errors of the regression coefficients are in parentheses directly below the associated coefficients. Asterisks indicate significance at the 5% level.

The above regression results show that the EU dummy is significant in two of the cases. This shows that joining the EU helped to increase the return on assets and decrease current liabilities to asset ratios. After joining the EU, firms became more competitive and reduced current liabilities relative to their assets. In the case of ROCE, ROE and D-to-E, the coefficient on EU dummy is positive but not significant, while it is negative and not significant in the case of Lt-D-to-A and D-to-A. In most cases, past performance of the companies did affect their

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future performance. However, in some cases such as the two year lagged value of return on assets ratio has a negative effect on present ROA ratio and the two year lagged debtto-equity ratio has a negative effect on present D-to-E ratio. Generally, most of the past values of financial ratios affected their corresponding future values.

5. Conclusions

This paper examines whether the performance of business firms improved after the ten Central and Eastern European countries joined the EU in May 2004. Quarterly data on assets, long-term and short-term liabilities, common equity, and profits were collected and analyzed. The Wilcoxon signed-rank test was utilized to show whether these financial ratios increased in value between the two time periods used in this study. Furthermore, a panel data regression model was developed and tested to examine whether the accession to the EU affected the financial performance of business firms (the effect of joining the EU on each of the financial ratios). The Wilcoxon signed-rank test reveals that companies were able to improve their return on assets (ROA), return on equity (ROE), and return on common equity (ROCE) after the countries joined the EU. In a cross-country analysis, a panel regression model was developed and estimated. The results of the auto-regression model reveal that the EU dummy variable had a significant effect in increasing the value of ROA ratios, as well as reducing the value of current liability to asset (CL-to-A) ratios. Furthermore, this study suggests that companies were anticipating increased competition and access to larger markets before joining the EU and had acted accordingly. Thus, the comparison of ratios (after the countries joined the EU) with that of June 30, 2001 were significant, but the comparison with those of March 31, 2004 were not. From 2001 to 2004, the companies were preparing to join the EU. Once they joined the EU, the profitability of the firms increased. Therefore, the companies of these countries benefited from joining the economic union.

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