

**THE IMPACT OF GLOBALIZATION AND FINANCIAL
REPORTING ON THE EFFICIENCY OF FINANCIAL
MARKETS: AN ASSESSMENT FROM IT PERSPECTIVE***

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Abstract

This paper evaluates the role of financial reporting on the efficiency of financial markets along with the effect of globalization by approaching from the Information Technologies (IT) point of view. The innovations in IT have revolutionized the business world and led to globalization by integrating economies. Since the economics deals with the efficient allocation of limited resources, globalization has become the universal way in the search of efficiency. In employing highly efficient production factors, information is the essential element that initiates this process. IT's pivotal role derives from the fact that financial markets rely on competent information provided by financial reporting mechanism. Thus, financial market participants should be fully equipped by high quality information so that financial markets function effectively and the misallocation of resources is avoided.

Keywords: Globalization, Financial Markets, Market Efficiency, Financial Reporting, IT.

Özet

Bu çalışma, finansal raporlama ve küreselleşmenin finansal piyasaların etkinliği üzerindeki etkisine bilgi teknolojileri açısından bir bakış sunmaktadır. Bilgi teknolojilerindeki gelişmeler, ekonomileri birbirine entegre etmek suretiyle iş dünyasını yeniden şekillendirip küreselleşmeyi beraberinde getirmiştir. Ekonomi biliminin, kaynakların tahsisinde etkinliği öngördüğü dikkate alındığında; küreselleşmenin, etkinlik

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arayışının evrensel yolu haline geldiği görülmektedir. Bilgi, yüksek verimliliğe sahip üretim faktörlerinin üretim sürecine katılmasında önemli rol oynayan ve bu süreci başlatan temel bileşen olarak karşımıza çıkmaktadır. Finansal piyasaların, finansal raporlama mekanizmasının sağladığı nitelikli bilgiye olan ihtiyacı bilgi teknolojilerinin hayati rolünü ortaya koymaktadır. Dolayısıyla, finansal piyasaların etkin çalışması ve kaynakların yanlış tahsisinin önlenmesi için piyasa oyuncularının yüksek kalitede bilgi ile donatılması gereklidir.

Anahtar Kelimeler: Küreselleşme, Finansal Piyasalar, Piyasa Etkinliği, Finansal Raporlama, Bilgi Teknolojileri.

Introduction

There are some requirements for a securities market to function properly. One of them is the availability of relevant, timely, accessible, and reliable information. Without the availability of information possessing above mentioned properties, investors would not be able to price securities effectively. Also, they might prefer holding cash rather than investing in securities traded in financial markets. In essence, the quality of financial information as a result of sound financial reporting is of great importance for an efficient stock market.

Yet, the existence of quality information is not sufficient condition on its own for a well functioning financial market. There needs to be a lot of investors who can access this information whenever they want (D'Avolio et al., 2001). Without investors seeking for information and making use of it for their investment decisions, financial markets might not be working as expected. That is because the only investors holding or trading securities would be those who have better information that is not accessible by others.

Another requirement that is needed for a financial market to be efficient is that the investors should be protected by laws and regulations (D'Avolio et al., 2001). The strict enforcement of the laws and regulations is a must for the investors to be protected; otherwise, they would remain on papers only without being actually effective. In addition, there would be agency problem from the perspective of corporate governance, that is, managers of the firms might not act in the best interests of their shareholders, or in the most general wording, stakeholders.

Finally, there should also be an active and liquid secondary market so that investors would be able to exchange securities without an adverse effect on prices. That is, transaction costs should be lower and investors should pay (receive) the fair value whenever they buy (sell) securities. This would induce willingness to hold securities among investors as they would know that they can cash their investments at a reasonable price if they want to do so.

1. The Efficiency Of Financial Markets

Nowadays, information is an important and valuable source in all areas and financial markets as well. One of the most debated subjects in finance is the accessibility and the cost of information. Asymmetric information theory, for instance, argues that financial markets may not be highly efficient in accessing and using relevant information. Players such as professional fund suppliers, inspectors, lawyers, journalists, members of the board of directors or managers of firms etc. can possess special information in assessing the value and riskiness of certain assets. They are known as insiders and can earn excess profit on trading financial and non-financial assets by using their unique and special information that is costly for other market participants or not accessible at all.

As an application used in stock valuation, random walk theory states that the chance in predicting a stock's future path is not higher than the predicting a series of random numbers. Changes in security prices are random fluctuations around their true value and are independent from the occurrence order of those changes. Price changes appear as they are drawings from an infinite price pool. Recently, the random walk approach has been replaced by the efficient market hypothesis.

On the other extreme, supporters of technical analysis almost totally reject the efficiency of financial markets. The views such as the random walk and the efficient market hypothesis favor the efficiency of financial markets to some degree hence support fundamental analysis in valuations. However, the opposite side considers financial markets to be inefficient and consequently rely upon technical analysis to beat the market by exploiting the opportunities of earning excess return.

Since random walk theory is not accepted by all financial analysts, many of them still uses the theories of graphic and technical analysis. In this respect, a security's past price movements contain valuable information in forecasting its future price path. According to technical analysts, historical price patterns tend to repeat in the future. However, findings of empirical studies show that future price movements do not have a meaningful tie with past price changes. Significant researches by Fisher and Lorie (1964) and some others provide sufficient evidence that price movements does not reflect a serious connection with past price patterns.

In the tests conducted on technical analysis theory, that whether investors' could earn abnormal returns by employing the various mechanical buy and sell or filter rules rather than simple buy and hold strategy has been investigated. Results presented by Chang and Lewellen (1985) and also some other researchers generally in favor of simple buy and hold strategy especially after taking trading commissions into account. The mean return inferred by using trading rules is not necessarily higher than the return that investor may earn from purchasing a portfolio of randomly selected stocks representative of the market and holding it for some period. In other words, the rules of buy and sell mechanism does not confirm to generate an excess return.

2. Efficient Market Hypothesis (EMH)

Recently in the literature, as a broader concept for valuation of financial assets, the efficient market hypothesis has replaced the random walk. The EMH states that all information related with the valuation of credits, securities and other financial assets are obtainable by savers, investors and both supply and demand sides of credit at negligible cost. It is the efficient market that promotes the allocation of limited resources in most efficient uses. In a perfectly efficient market, securities prices randomly fluctuate around their true value and remain always in equilibrium. Temporary deviations from the equilibrium are instantly corrected. Relevant information is simultaneously accessible by all investors at no cost and securities transaction prices perfectly reflect all available recent information concerning the riskiness and future profitability of firms. Moreover, securities market prices adjust so

quickly with the flow of new information that investors readjust their portfolios accordingly. Since these happen at the same time, market price remains always in equilibrium and reflects the true value. As a result, in a perfectly efficient market, it is not possible to make economic profits because an efficient market is the one that processes all available relevant information instantly.

Surely, perfect efficiency is the most extreme form of the theory. Recently, the theory has been treated and tested in three forms that each represents different perceptions about the functioning of financial markets. The weak form of efficiency argues that consecutive changes in stock prices are independent of each other. In other words, past price movements are not reliable bases for future price predictions. Therefore, it is not possible to earn excess return by consistently trading on historical price data.

The second level of market efficiency is the semi-strong form efficiency. This form asserts that all publicly available information is reflected in prices. Thus, no investor can earn more than normal return given the associated risk level. Finally, the last level is called the strong form efficiency in which all information including special information is reflected in securities prices instantly. Therefore, even insiders and such special information possessors as financial analysts, security dealers, brokers etc. are not be able to gain abnormal returns but the return associated with risk they are willing to take.

3. Empirical Tests of Market Efficiency

The validity of efficient market hypothesis has been subject to many researches. Despite that there is no consensus over the findings and disputes still takes place on its validity, empirical tests are conducted on three forms of the theory. Recent studies generally favor the validity of weak and semi-strong form efficiency. Researches provide findings to support that security prices generally respond quickly to the new public information. In their study on firms of portfolio management, Chang and Lewellen (1985) present evidence that these firms do not make more persistent and steady return than randomly selected portfolios of similar risk. Yet, not all research findings support the view of efficient markets.

For example, there is evidence that small firm stocks tend to yield higher return than larger firm stocks (*small firm effect*) (e.g., see Lustig and Leinbach, 1983). In addition, studies of French (1980), and Gibbons and Hess (1981) indicate a *weekend effect*. That is, daily returns in share prices tend to be lower on Mondays. Recently, these are followed by research evidence of *January effect* that stocks bought in December frequently yield higher than normal return when they are sold in January. There is also academic research focusing on the similar anomalies on the Istanbul Stock Exchange (see Karan and Uygur, 2001; Demirer and Karan, 2002; Karan, 2002).

These findings refer to inefficiency in stock markets that contradicts with efficient market hypothesis. However, there are also considerations about the accuracy of these findings on inefficiencies since the models employed in these studies are subject to criticism. For instance, Fama in his recent studies (Balvers, 2001) provides evidence to support market efficiency. He argues that rejections of efficient market view in the literature show little systematic consistency. Moreover, the models applied to measure the expected returns and abnormal returns might be inappropriate hence lead to inaccurate results.

4. Asymmetric Information

Asymmetric view states that there are special pockets of information in the supply of information. These include insiders that can detect profitable trades, journalists, security dealers, and financial analysts. They may not be necessarily engaging illegal activities. In deed, they may become naturally a member of this group only because of private education they received, their experience in the profession and special skills. With respect to revealing asymmetries in information, efforts of individuals donated with private knowledge and skills create important consequences for market system as a whole. Market prices are connected to each other via information. However, if investors possess different sets of information, their expectations vary from one to another. Varying perceptions of value and risk eventually result in equilibrium of consensus price to reflect the mean of expectations.

In addition, currently available information will differ both in quantity and quality because of asymmetrically distributed information. But, unfortunately, most financial information users cannot be able to easily assess the quality of information at the time of having to buy it. Therefore, there are enough reasons for information providers to be highly assertive about the information they sell in money and capital markets. It appears to be inevitable that providers of inaccurate and misdirecting information will eventually be out of business since the demand for their services will decline. Nevertheless, it is difficult to state that financial markets have effective policy mechanisms to assure the quality and accuracy of information.

In general, asymmetric information theory is in line with the weak and semi-strong form of the EMH. Asymmetric theory denotes that the value of financial assets reflect all publicly available information. The point where it differs from the EMH is that asymmetric theory considers the existence of some market participants who can earn excess returns via using their access to private and costly information. Moreover, in some instances where asymmetries are highly effective financial markets may head a wrong direction, contrary to expectations from an efficient market; cause the misallocation of resources and even collapse. The existence of information asymmetries may simply result in a waste of limited resources.

During the last two decades, significant innovations have emerged in financial markets and investment vehicles. In addition to the reinforcement of globalization, IT's remarkably enormous contribution has fastened the ties of economies and both have promoted the same security's simultaneous trading in many markets. Therefore, there has been a growing efficiency in pricing the identical or similar securities in different markets. That is in accordance with the economics rule that requires the identical assets carry the same value even if they are traded in different markets. Otherwise, arbitrageurs would assume their role to take advantage of this opportunity and eliminate disequilibrium.

Despite the rules of the economics, different prices for the same asset might occur even in the markets of the same economy. Certain restraints which are called market imperfections and segmentations account for these differences in valuation. Therefore, through globalization, which

urges transparency, and IT, which facilitates access to reliable information, the quality and the efficiency of markets are expected to improve. That, in turn, again from the economics' perspective, may promote the effective allocation of resources hence help utilizing the maximum individual and social welfare.

5. The Effect Of Globalization And Technology On Market Efficiency

Globalization can be defined as the increased integration of economies around the world. It results from human innovation and technological progress. The integration of economies can be achieved through international trade and financial flows. Globalization can also be an outcome of the mobility of people, or in other words, labor, and knowledge or technology across international borders.

The term globalization has been widely used since the 1980s. Due to technological advances beginning at the time, international trade and financial flows have become easier and quicker. Globalization is nothing but the extension to the international arena of the similar market dynamics effective for years as a result of human economic activity.

The logic behind international trade is the comparative advantages of some countries over others. The economies of those countries do whatever they do best. The markets, within which individual economies not only complete each other, but also compete with each other, may promote efficiency through this integration and competition. Globalization of markets provides people with the opportunity to mobilize all around the world. This implies that economies can have access to technology, labor, and capital wherever they are available.

Globalization of economies through international trade has also affected financial markets. Fund managers are diversifying their portfolios by investing globally (Grubel, 1968; Levy and Sarnat, 1970; Solnik, 1974). They are including international equities in their portfolios to diversify away risks involving their investments. Also, they are trying to maximize returns to their portfolios in line with the risks they face. This is because the higher the risk of an investment, the higher

the expected return from that investment. If a fund manager invests in domestic equities intensively, he may face substantial risks.

Technology has long been an important accelerator for globalization. Another aspect of globalization in financial markets is the disclosure of relevant financial information as to the value of the financial assets. Thanks to the Internet, for example, economies in the world are converging globally and investors are able to access more timely information regarding their investments. The dissemination of information to the investors electronically has reduced asymmetric information among market participants. New information and communication technologies are having an unprecedented impact on financial markets by removing national borders in the financial services industry and paving the way for international competition.

The trading of securities now is more competitive. The investors who have better information than others try to take advantage of their information by trading ahead of their competitors. This competition has lowered transaction costs. The rise of the Internet has also made it possible to invest during twenty-four hours a day. For example, an investor may start trading on the Tokyo Stock Exchange (TSE) first. Then, he may continue trading in India, Turkey, London, and finally on the New York Stock Exchange (NYSE) as these markets open. The availability of round-the-clock investment opportunity globally has greatly increased the number of investment alternatives accessible to international investors. It also has improved market efficiency along with reduced transaction costs.

Technology has transformed financial markets in a fundamental way by making electronic trading of securities possible. The traditional trading floors just as on the NYSE are no longer required. There are now alternative trading systems, in which there is no need for financial intermediary in order to execute orders of investors. Buy and sell orders are matched automatically through these alternative trading systems.

6. The Effect Of Technological Advancements On Financial Reporting

From the last decades of 20th Century, rapid advances in electronic technology, especially in Information Technology (IT), have revolutionized the way business is conducted and the way in which financial information is disseminated. Today, whole or substantial part of business transactions take place in electronic environment by the use of many technological innovations, such as Electronic Data Processing (EDP), Electronic Data Interchange (EDI), Enterprise Resource Planning (ERP) systems, Electronic Fund Transfer (EFT), and Internet. Organizations adapted themselves to those technological innovations could contact with their customers and providers, give and/or take orders, track inventory movement, collect and pay in electronic environment. The diagram given below (Figure 1) shows the customer-centric focus of today's emerging business models and links together the components of the business processes (e.g., marketing) and e-business tools (e.g., Web banners) that are structurally changing the way business is conducted.

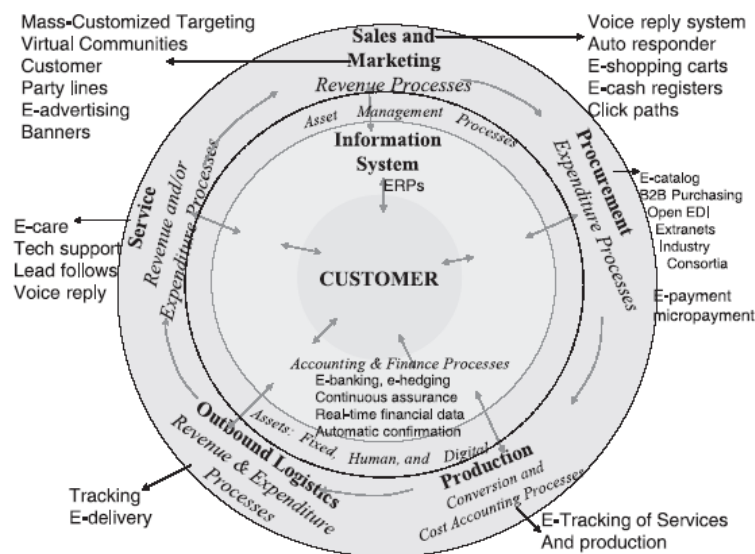


Figure 1. Electronization of business and the Customer Oriented Value Chain

Source: M. Vasarhelyi, M. Greenstein / International Journal of Accounting Information Systems 4 (2003), p.4.

In this diagram Vasarhelyi and Greenstein (2003) grouped the electronic business process set into five major groups: **revenue** (sales, marketing, advertising, etc.), **service/electronic care** (e-care) (the new customer relationship management [CRM] component), **expenditure or supply chain management** (SCM) (purchasing, logistics, delivery, etc.), **e-financial processes** (accounting, finance, auditing and payments) and **asset management** (human resources [HR], fixed asset, research and development [R&D], etc.).

In today's complex, hi-tech and ever changing business environment, decision makers need more quality information. Quality in information means timely, relevant, and reliable information. By the advancement of Information Technology, a better quality of information is available today than previously.

The atmosphere within which the traditional financial reporting model was evolved has changed remarkably as a result of technology. It is a well known fact that, in a traditional accounting environment investors have to wait for financial statements for as long as 90 days while auditing requirements and reporting processes delay their delivery. Today, parallel with the increasing occurrence of businesses' economic events and transactions in electronic environment, accounting system's operating environment move away from traditional, paper based environment to electronic environment. Today's technology has enabled organizations' accounting system to collect, record, classify, report, and maintain simultaneously with, or very short period of time after the occurrence of economic events or/and transactions of business. The use of Internet as a medium of information transfer from business to stakeholders has changed the concept of periodicity. Today it is possible to provide more frequent (monthly, weekly, even daily), near real-time financial information. This has implications for timeliness and, less directly, relevance. Many organizations are currently keen on providing financial information over the Internet, especially the World Wide Web to increase users' access to information as well as to allow the timely and efficient exchange of information between preparers and various stakeholders. Many business and finance organizations have already applied this capability. Examples are real-time stock quotes, on-line news wires and e-commerce. Currently, the use of complex technology

has also increased reliability of information. The reliability of financial information increased by the use of continuous (both internal and external) monitoring and auditing.

Development of technology does not affect only preparer side of financial information, but also affect the user side. Indeed, the relationship between preparers and users of financial information is interactive. Technology has helped the users of financial information become more sophisticated. Technology is a catalyst in this interactive relationship. The more sophisticated and demanding users put pressure on the preparer to provide more quality information. Technology, not only provides tools to produce timely, relevant, and reliable financial information for preparers, but also provides tools to reach that information conveniently for users. In today's environment, many users can easily and almost freely access to companies' financial data as they become available.

Summary and Conclusion

The efficient functioning of financial market is required for the proper allocation of resources in an economy. However, the efficiency of today's financial markets world wide has been long debated. Even the existence of enough and effective policy mechanisms in the assurance of sound financial markets has been questioned. In efforts to achieve effective markets, the quality of information stands as the key factor. It is the responsibility of financial reporting system to fully equip financial information users with accurate decision making tools. At this respect, IT plays a critical role and makes a major contribution in improving the quality of information produced by financial reporting system. The Internet technology has emerged as the main driving force for the electronization of business world and information flow so that many technological innovations such as EDP, EDI, ERP systems, EFT have taken their places.

Innovations in IT find an ever increasing acceptance and application areas in all aspects of the economy as soon as they become available. The more innovations come into existence, the more common uses are adopted in financial community. That, in turn, creates a more demanding

and sophisticated financial information users in a more global world. It is not surprising that these advancements are believed to be producing a higher quality of information. The result should be an improvement in the efficiency of financial markets. Lastly, the final outcome is an expected increase in the efficiency of resource allocation in the economy to provide a better living for individuals and the society.

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