

The Effect of Fair Value Accounting on Jordanian Investment Properties

An Empirical Study on Jordanian Listed Real Estate Companies

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Abstract

The financial reporting in Jordan has witnessed significant improvements in the past twenty years; these improvements were a result from the adoption of the International Financial Reporting Standards (IFRS). The main objective of this study was to examine whether developments in financial reporting environment following the adoption of IFRS resulted in more relevant financial information over time. This study uses a quantitative methodology in addressing the research questions. The relevance of fair value has been tested by studying the effect of fair value measurement applications for investment properties on the financial performance of Jordanian firms, its share prices and market values, the study also examined the effect of unrealized gains and losses on financial statements. Ohlson (1995) theoretical frameworks have been used to examine this relationship. A sample of Jordanian firms (consisting of 41 real estate companies) listed in the Amman stock exchange during the 2008–2011 time period has been used. Our study findings, based on the results of multiple regression analysis showed that financial performance of Jordanian real estate companies is significantly positively related to investment properties valued at fair values. Furthermore, the book value incremental information content is greater than information content of the net income and the unrealized gain & losses inclusion in owners' equity increases the explanatory power of the firm's market value model of real estate companies. This study concludes that fair value accounting measurements for Jordanian real estate companies have been value relevant during all the period of the study.

Keywords: fair value accounting, relevance, Jordan, investment properties, IAS 40, real estate companies

1. Introduction

The main objective of financial information is to give decision makers with proper information that are relevant and reliable for rational decision making. According to International Accounting Standard Board (IASB), financial statements information should provide users with information that is useful to investors, creditors, and all expected users in making rational investment, credit, and any expected decisions. A beneficial accounting system should produce information with high quality that is both reliable and relevant for decision making.

Ball and Brown study in 1968 was the starting point for many other value relevant studies, they investigated the relationship between accounting information (earnings, cash flows, and book values of equity) and market values (share prices and income). In many developing countries like Jordan, fair value accounting (FVA) considered a suitable measurement that is more relevant than historical cost accounting model, but it is still questionable whether fair value information provides more appropriate information than that of historical cost in these emerging markets with weak financial markets? And whether the (IFRS) fair value measurements can or should be implemented in those markets.

Fair value accounting measurements in developing countries was criticized that, it's irrelevant for many reasons: for example, unavailability of efficient markets for many assets and liabilities, which makes fair value measurements are a type of management estimation that are subjective and less relevant and unreliable for decision making. Another problem appears in developing countries is the cost benefit problem when producing fair value information; it's argued that, it is too costly for small companies to apply fair value measurements while the expected results are

unbeneficial. The final problem for these countries also appears when income is recognized under fair values measurements, which makes the reported unrealized gains or losses resulted from fair value appears in financial statements' information, which might cause greater volatility in returns, share prices and unpredictable market conditions (Barth, 2006).

In developing countries the lack of active markets for many assets, like financial instruments and investment properties affect level three of fair value measurement. This level is applied by managers through estimations and prediction, it's argued that, manager's predictions or estimations might be applied with subjective methods that result in discretion or manipulation of accounting numbers. The necessity to reach high comparability and harmony internationally, the (IASB) worked hardly through the previous period to increase international harmonization of accounting standards. The (IASB) work resulted in a production of a set of International Financial Reporting Standards (IFRS) that has been implemented and adopted fully or partially in many countries worldwide. Interestingly, many developing countries converted to IFRS since the year 2011, some researchers argued that, it is too early to give judgments for such conversion especially for emerging thin markets because there are many doubts about this convergence whether it will make a difference at all (Olesen and Cheng, 2011).

This study conducted to give more additional literature for the applicability of IFRS in a developing country Jordan. Previous research showed that, culture, economic and legal factors are differ from one environment to another, therefore, incentives and revaluation effects of companies should not be referred to a particular environment (Barlev and Haddad, 2007). Previous research on the relevance of fair value measurements generally concentrated only on Continental Europe countries, Australia, United States and United Kingdom. Therefore, a study in an emerging country would give more insight for fair value measurement and more harmonization when implementing International financial reporting standards.

Based on above this study was structured to extend the accounting literature of fair value measurement in a developing country through investigating the expected consequences of implementing fair value revaluations in Jordan after the new regulations of fair value measurements that are issued for Jordan market at the end of 2007 and revised at the end of 2011 concerning the fair value measurement and its disclosures.

2. Theoretical Background

This section of the study is aimed to discuss and overview the mean of fair value and its relevance under IASB, and discuss the meaning of fair value under other accounting standard setting bodies such as the USA Financial Accounting Standard Board (FASB). This part also highlights debate and different arguments about fair value implementation.

2.1 Value Relevance and Fair Value

According to IASC value relevance means "the ability of financial statements information to capture or summarize information that affects share values, future dividends, future cash flows, future earnings, or future book values" (IASC, 1989). This means that, an accounting information number is perceived value relevant if an association is witnessed with market values and, if this number increases the predicting and forecasting ability of future market values, then an accounting figure is perceived to be relevant (Barth, 2000).

According to IASC, the Framework of Preparation and Presentation of Financial Statements (IASC, 1989). Information is considered relevant if that information effects the decisions of different users to evaluate past, present and predict future at a proper time. This definition of IASC considers the relevance of accounting number for decision making one of the most important qualities of financial information (Francis and Schipper, 1999). Barth et al. (2001) also stated that, this definition for disclosing relevant accounting information had introduced deep insights for investors and for standard setters. Therefore, relevance as a quality is needed for application for all accounting environments, not only for advanced markets but also for emerging markets that are even in the process of improving their accounting practices.

Scholars through their different arguments always related value relevance to the use fair value measurement. According to IASB/IFRS fair value definition is: "the amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties in an arm's length transaction". The last issued IFRS 13 also defined fair value as: "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date". This definition of IFRS 13 for fair value focused on both the entry price and exit price when an asset is sold or a liability is settled (IFRS 13, 2012). Furthermore, IFRS 13: classified fair value measurement for three levels, level one for market prices are used as a best estimate of fair value. Level two are used when market prices are not available or due to lack of sufficient measurement, quoted market

prices of comparable prices are applied as alternative. Level three is applied when level one and two are not found, therefore, prices are determined through internal estimation of managers (IFRS 13, 2012).

Recognizing, measuring and disclosing fair values are the main requirements by several accounting standards for example: IAS 39 (replaced recently by IFRS 9) for financial instruments, IAS 40 on investment property, IAS 38 on intangible assets and IFRS 3 on goodwill, IAS 16 on property, plant and equipment (where fair value is an alternative model to historical cost model), IAS 41 on biological assets, Agriculture, impaired tangible and intangible assets under IAS 36, Impairment of Assets, and IFRS 13 on fair value measurement (Alkhadash and Abdullatif, 2009).

Many scholars argued that, value relevance studies always focuses on tests of relevance and reliability (faithful presentation) of financial information, whom perceived as they are the most important qualitative characteristics' of accounting information when evaluating among different accounting alternatives (Barth et al., 2001). The importance of the relevance quality for deciding a certain accounting alternative is stemmed from the usefulness of information that will be provided for decision makers. (Barth, 2000)

2.2 Arguments That Support Fair Value

The literature has a lot of debate by scholars whom pointed out that, fair value accounting is more relevant for user's decision than historical cost, and thus historical cost should be abandoned or replaced by another valuing method that based on current values. Researchers also pointed out some shortcomings of historical cost. An important limitation of historical cost arise during the inflation periods when prices are risen, they claimed that historical cost is incapable for reflecting prices change (Deegan and Unerman, 2006), another limitation of historical cost is the recognition of unrealized gains in asset values, and its lack of comparability (Riahi-Belkaoui, 2004; Alkhadash and Abdullatif, 2009).

Fair value accounting was proposed as an optional measurement in replacement of historical cost for a set of assets and liabilities. Fair value of a certain assets has been perceived more relevant than historical cost, for example; financial instruments and investment properties, but in some situations fair value is considered to be less reliable than historical cost if current market prices are unavailable. Therefore, fair values of some assets have been seen as reflecting the market's assessment of the effects for current economic conditions on these assets, and thus do not affected by the past events of such assets or the by firm that holds them (Carroll et al., 2003; Alkhadash and Abdullatif, 2009), this in turn allows adequate financial statement reflection of asset liability management activities when fair value accounting is implemented for all financial assets (Gebhardt et al., 2004; Siam and Abdullatif , 2011).

Nevertheless, current values based on exit prices such as fair values, are supported on the ground that they are representing up-to-date values and true economic substance (Penman, 2007). Another argument in favor of fair value accounting measures when compared to historical cost is that, fair values improves the international accounting harmonization in terms of comparability and faithful representation between different global business (Barlev and Haddad, 2007).

2.3 Arguments against Fair Value

Many accounting scholars argued that, although fair value measurement is considered relevant for many accounting decisions, some criticism was pointed out against this measurement. (Evans, 2003) argued that, fair value measurements may cause distortion for net income through the inclusion of unrealized holding gains and losses, he also stated that, fair value measurements are less reliable relative to traditional methods, further, information under FVA are too costly to generate, managers' also might manipulate fair values, and finally, fair value model might break the historical cost model which seems working good and more understandable.

The emphasis of both the IASB and the FASB on exit prices for measuring fair value rose to surface some critics. (Penman, 2007) argued that, fair values tend to increase the volatility of earnings which might damage business due to high systematic risk, he also pointed out some concerns about the misuse of fair value estimations when market prices are unavailable. Similarly, Benston (2008) also argued that, fair value measurements based on exit values is irrelevant when measuring particular assets such as work in process or inventories and special purpose machines due to the deficiency of exit prices to provide investors with relevant values for such assets. Ronen (2008) also pointed out the irrelevance of fair values measure, due to its weakness in reflecting the value in use for some assets, and therefore, fair value is undependable in estimating future cash flows from those assets. He also accused fair value accounting with unreliability, due to the ability of managers to apply subjective estimations, and the practice of moral hazard by those managers.

2.4 Fair Value and Financial Crises

It has been argued that under FVA, the current market prices obtained from weak asset markets are unreliable and irrelevant to capture real prices, due to the fact that, these captured prices are distorted and do not reflect true current values (American Banks Association, 2008). It also has been argued that, FVA only works well, if efficient market conditions are available, such as high degree of liquidity and stability. However, in more realistic environments, neither the financial position statement nor the income statement prepared on fair value information could reflect all relevant information (Barth and Landsman, 1995).

In the last financial crises fair value accounting was accused to be a main cause of bankruptcy and failure for many international banks and financial institutions (Ryan, 2008). Many worldwide professionals and scholars were defenders for fair value against this accusation, they considered FV a messenger that carrying assets and liabilities values and, therefore, did not cause this financial crisis. Many of them argued that, the role of fair value in financial reporting is like that of the thermometer, it only mirrors reality, it does not create it and therefore, the abandon of FVA and returning back to traditional historical cost accounting will not solve the problem. Supporters of FVA also pointed out that, the financial crisis would be worse with absence of FVA, due to the role of fair value in providing early warnings for such problems in the market, which aid financial institutions and agencies to take the necessary actions to deal with these problems quickly and efficiently (Laux and Leuz, 2009).

In Jordan, our capital market similar to other markets had effected by small impacts of World Financial Crisis due to its financial and economic ties with other countries of the world. However, the impact that was resulted from the last Financial Crisis on Jordan economy required from regulators to take necessary financial actions to minimize these effect to the lowest level and to avoid the possibility of high distortions to our Jordanian capital market. Consequently, the Jordanian government through the central bank of Jordan had worked hard to protect the exchange rate of Jordanian Dinar, also protect different financial investments in market and the banking sector. Our government in response for this crisis set some corrective actions to reduce the inflationary pressures through funding the deficit in Jordanian current account for the balance of payments. Furthermore, In order to overcome the crises problems, the central bank has increased the market local liquidity in 2009 by approximately 1.25 billion, with an increase of 6.8% in comparison with 2008; the commercial banks also individually raised its local deposits by 8.9% to reach 19.66 billion. However, the CBJ mandated commercial banks to increase its local credit by about 9% (119.6 million) to help the local Jordanian investments, in addition to that, CBJ decreased the interest rates on credit facilities by 30 points (CBJ, 2009; World Bank, 2012).

In order to protect Jordanian economy, the Jordanian government through (CBJ) has issued out a set of instructions and requirements several times during and after the world financial crises period concerning the use of fair value accounting. Another instructions also was made on reporting of financial and nonfinancial information, some of these instructions required necessary changes in commercial banks structure and their activities in order to make bank activities more convenient, less complicated, with more concentration, in order to maintain on the role of efficient financial markets, and to produce reliable reports with high quality financial information aimed to protect local and foreign investments (CBJ, 2008 & 2009).

As previously mentioned government instructions were issued as corrective action that to overcome the volatility problem in our market which might result in weak investments, irrational decisions by some investors. Due to the fact that, Jordan stock market is considered newly emerged market, the government issued at the end of 2007 fair value regulations and revised it in 2011; for example, gains from fair value adjustments of trading securities must be disclosed as unrealized gains in the retained earnings part. Gains result from fair value revaluation should not be distributed to shareholders, Furthermore, historical cost model should be used when assets are classified under investment property under IAS 40, and fair values of these assets are disclosed to notes. Historical cost also should be applied for property, plant, and equipment under IAS 16 (JSC, 2007; JSC, 2011).

2.5 The Relevance of Fair Value for Investment Properties

Its argued that, fair value accounting considered more relevant for financial decision making, Nevertheless, fair value was criticized that, a lot of financial assets could not be evaluated with the required accuracy thus firm's market value and their returns are unreliable and irrelevant. With unavailability of active markets for particular assets such as financial instruments and investment properties, the cost of implementing such reliability tends to increase (Price Waterhouse Coopers, 2008).

Many accounting regulators recently worked hard to expand the market to market model. This expansion was faced by many criticisms from financial statements preparers due to the deficiency of this model to reflect reliable

and relevant information neither for them nor for users. However, the use fair value model continued to be a controversial issue in accounting literature whether it's beneficial or unbeneficial, and continue to be debated by many proponents and opponents (Danbolt and Rees, 2008). Nevertheless, in many emerging economies fair value accounting considered an accounting measurement a preferable option than historical cost, but it is still questionable whether fair value is more suitable, reliable, and relevant than historical cost in these emerging economies that characterized by inactive markets? And whether the IFRS fair value accounting requirements can or should be adopted these economies?

This study is aimed to examine value relevance of IAS 40 fair value measurement through analyzing the role of gains & losses recognition and their effect on firm's market value. It has been argued that the inclusion of unrealized gains & losses result from fair value measurement will increase the volatility and unpredictability of market values. Many concerns were appeared for the inclusion of unrealized gains and losses in owners' equity (comprehensive income), due to the fact that, improper increases in share price volatility will be witnessed in market values and consequently resulted in distortions for financial information which might cause a user confusion (Al-Shami and Kayed, 2005).

In Jordan the value of investment properties has shown a tremendous increase as a result of high demand from 2005 until 2012 for real estate properties. This huge demand caused a price increase for real estate's on average over 250% during this period. Consequently, the use of fair value accounting in evaluating these investment properties during this period has affected the market value of many Jordanian real estate companies to be inflated with tremendous levels (Alkhadash, 2012; CBJ, 2011).

The Board of Commissioners in Jordan Securities Commission (JSC) issued a new instructions and requirements at the end of 2007 aimed to control the use of fair value accounting, these requirements are also amended in 2011, generally, these instructions stated that, companies that listed in Amman stock exchange must use the cost model for treatment of IAS 40, Investment Property (JSC, 2007; JSC, 2011). With reference also to these regulations, they stated that all listed companies should apply the cost model in valuing investment property and any changes in fair values should be disclosed to the notes. Regulations of 2007 and 2011 were enacted by Jordanian government as a result of including the income statements and the statement of financial position for many companies with unrealized holding gains and losses numbers which might cause increase in volatility of market values (JSC, 2007; JSC, 2011).

The researchers through this study investigated the effect of unrealized gains and losses recognitions for IAS 40, and how this recognition affects the market value for Jordanian real estate companies. Furthermore, the study conducted to show how these unrealized gains and losses in owners' equity numbers might increase the incremental explanatory power of earnings. Through our examination we divided the book value (represented by total owner equity (TOE) of the companies under our study for two parts: book value before unrealized gains and losses that included in (TOE) and after the unrealized gains and losses inclusion in (TOE), then a comparison was made between the two incremental explanatory power of book value after and before unrealized gains and losses to capture the affect of unrealized gains and losses incremental explanatory power on market value represented by share price.

Based on the above argument, the study objective was to provide empirical conclusive evidence about, whether fair value revaluations made under IAS 40 in Jordan are value relevant for real estate companies and serve different users in a newly emerged capital market (Jordan)?

An overview about Investment properties IAS 40

According to IASB investment property is a land or a building or even part of a building or both which is held to earn rentals or for capital appreciation, or both by the owner or by a lessee under a finance lease (IASB, 2010). This definition of IASB excluded the properties that held by the parent or a subsidiary. However, investment property also includes properties that are leased to an associate or joint venture, which occupies the property, since associates and joint ventures are outside the consolidated group (Alkhadash, 2012).

According to IASB investment properties of assets leased as an operating lease should be treated according to the requirement of IAS 17: Leases. Properties used in production or supply of goods or service, or administrative purposes are accounted for under the requirements of IAS 16: properties, plant and equipment. Properties acquired for sale in the normal course of business are accounted for under IAS 2: Inventory (Siam and Abdullatif, 2012). Properties that acquired for own use and at the same time for rentals purposes or for capital appreciation and a part of these assets can be sold separately, they are reported in balance sheet separately. Furthermore, if an entity introduces auxiliary services to the holder of a property acquired by the entity, the best classification of investment property is based on the importance of the services provided. Under IAS 40 assets are recognized when it is probable that the future economic benefit associated with the asset will inflow to the entity and the cost of acquiring that asset to the

entity can be measured with sufficient reliability (IASB, 2010; Alkhadash, 2012).

According to IAS 40 the cost of the acquired investment property is its purchase price and all costs attributed to the asset such as professional fees for legal services, property transfer taxes and other transaction costs (IASB, 2010; Alkhadash, 2012). Investment properties subsequent measurement could be at fair value or cost model. However, if a property that considered as an investment property when acquired or constructed was measured by fair value, this property must continue to be measured by fair value until the time of disposal (IASB, 2010).

It has been argued that, fair value measures are aimed to mirrors reality which means, providing up to date values and only truly economic conditions should be reported in financial statements. According to IASB fair values are usually assumed to reflect recent economic prices of an active market for similar properties under the same market circumstances (Nellesen and Zuelech, 2011). If active market conditions were unavailable, fair value prices of other properties with different type or different market conditions are taken into consideration. Fair value of properties in weak markets is determined through estimation of discounted future cash flow depending on highly reliable prediction of future cash flows (Alyaseen and Alkhadash, 2009). Investment property that has been recognized previously is accounted lately on the requirements of IAS 16, and its carrying amount is cost less accumulated depreciation less accumulated impairment losses. Unrealized gains or losses are not allowed to be presented in the income statement. However, at the sale date of investment property any gains and losses should be reported through the income statement (IASB, 2010).

International, regional and local studies about fair value accounting

A lot of empirical researches were undertaken on value relevance of FVA. Previous research focused mainly on value relevance of fair value measures on earnings' and volatility of share prices, changes in market values, and the consequences of implementing fair value accounting measurements on different capital markets. These studies vary from international to regional to local studies; in the following section of our study a discussion and overview of these studies and their results is shown below.

Barth (1994) in her study investigated how the reported fair value estimations of banks' investment securities and securities gains and losses are reflected in share prices in comparison with historical costs measurements. She stated that, fair value estimates of investment securities considered to have more significant explanatory power in comparison to that of historical cost, she also pointed out that, historical costs estimates founded with less significant explanatory power relative to those of fair values. Furthermore, fair values of investment securities are founded with less measurement error than historical costs when compared with the amount reported in securities prices and finally her results shown that, fair values of securities gains or losses have no significant incremental explanatory power as was expected.

Laurenco and Curto (2008) investigated the effects of IAS 40 for all listed real estate companies in four European countries, France, Germany, Sweden and United Kingdom. The results of their study showed that, there was significant difference in value relevance between fair value measurements and traditional historical cost measures. Further, their results also revealed that, investors perceive recognized and disclosed fair values differently. This empirical result suggested that investors distinguish between the historical cost information and any recognized or disclosed fair values concerning changes in values of investment property.

Another global studies: for example, (Benston, 2005; Landsman, 2007) argued that, although the use of current market values for many assets and liabilities is theoretically could be applied, fair values are generally subject to discretion, these fair values under some circumstances possibly calculated with substantial discretion by managers estimations, which might increases the risks of being misleading, because some of these predictions are may turn out to be false. These studies also revealed that, fair values are in general value relevant but that informativeness level could be suffered from the amount of measurement errors due to subjective estimates of managers or the external appraisers. Similarly, Nellesen and Zuelch (2011) whom examined fair value accounting of investment properties under IFRS for Danish real estate firms reported that, the net asset value usually departs from the market capitalization of European property firms. They also found that, those deviations were a result from insufficient reliability of fair value estimates of investment properties due to its appraisal limitations.

Many empirical regional and local studies of value relevance of fair value accounting have found that, fair value estimates of financial performance have more significant explanatory power beyond that of historical cost. El-Shamy and Kayed (2005) whom examined Kuwaiti firm's stock prices found that, fair values are value relevant. The incremental information content of earnings found to be greater than that of book values. Similarly, Albarrak (2011) when investigated whether developments in financial reporting system resulted in relevant financial statement

information for firms listed in the Saudi Stock Market. His findings from the predictive ability of future cash flows showed that, earnings provide incremental explanatory power beyond that provided by current cash flows in all three pooled cross sections. Khanagha (2011) also reached the same conclusion about fair value relevance in United Arab Emirates market. However, his results showed that, the incremental information content of cash flows' was increased post-IFRS period.

As for Jordan, AlKhateeb and Alqashi (2004) questioned the effects of implementing fair value standards on Jordanian economy. The descriptive analysis of their study showed that, due to absence of efficient market for many assets, Jordanian companies might apply discretion accounting when evaluating such assets, which could result in manipulation of accounting information and distortions to companies reported financial statements. Al-Zouby (2005) in his survey, examined the usefulness of applying fair value accounting for Jordanian industrial companies. He focused on criticizing the historical cost practices. Even though, he found that, the replacement of historical cost measurement with newly fair values is still to be ambiguous and unclear enough to achieve the qualities of financial information. On the contrary, Al-Saeed (2008) revealed inconsistent results for fair value disclosures of Jordanian insurance companies. His results showed that fair value disclosures have a positive effect on financial information qualities namely relevant, reliable, comparable and understandable.

However, the results of another Jordanian studies has also shown positive effects when applying fair value accounting measures. For example, Alkhadash and Abdullatif (2009) examined the consequences of fair value accounting of Jordanian commercial and investment banks for the period of 2002-2006. The results of the study revealed that, financial performance of a bank is generally very significantly affected by valuing financial instruments at fair values. They also found that there is a positive and extremely high value of Earnings per Share (EPS) when applying fair values for evaluating the financial instruments. Similarly, Siam and Abdullatif (2011) with a recent Jordanian study viewed the Jordanian bankers to examine the usefulness of fair value accounting and its major implementation obstacles. Their results revealed that, even there was a general approval for the use of fair values in financial reporting; some reservations came into surface about relevance in terms of predictive value and, more importantly, feedback value.

At the same manner, AlYaseen and Alkhadash (2011) in their study showed that, Income based on fair values reflects income volatility more than historical cost-based income. They also found that income was (not) more volatile with the recognition of unrealized fair value gains or losses on financial instruments or investment property. Their results when assessing the relative explanatory power of income volatility measures suggested that, not all fair value income volatility measures can be a good proxy of the total risk. On the contrary, none of income volatility measures provided significant incremental risk relevant information for total risk. Another Jordanian recent study conducted by Alkhadash (2012) also examined the effect of implementing fair value accounting under IAS 40 for Jordanian firms. His study revealed that, market value of share prices was generally associated with fair value disclosures. Furthermore, the inclusion of unrealized gains and losses affect the net income and the net income and book values jointly and individually are positively and significantly related to stock prices, and fair value disclosures are founded to be relevant.

To summarize, many studies have found that fair value accounting is value relevant and affects share prices, earnings, market values and future performance. However, another studies has reported some concerns about the use of fair value accounting especially when there are no available market conditions for fair value measurements, or active market is absence.

3. Research Design

3.1 Population of the Study

Real estate companies listed in Amman Stock Exchange (ASE) for the years (2008-2011) were chosen; including real estate companies that applied asset fair value revaluations. The year 2008 was selected as the starting year for the study because it was the first year after the new fair value regulations enacted by Jordan Securities Commission at the end of 2007 concerning fair value use. The community of the study consists of 41 firms (66 observations over 3 years); firms that have missing data or values were removed from the sample.

3.2 Data Sources

The primary data of the study gathered from the Jordanian companies guide (2008-2012) and from annual reports of the respective companies. The secondary data are obtained from accounting literature through journal papers, conferences, thesis, accounting text books and any other related sources.

3.3 Methodology

Wilson (2001) argued that, a well valuation model could provide significant and reasonable results for fair value estimates when measuring values of assets, and any changes in these valuation models will significantly report different results. In active markets that characterized by sufficient liquidity and full transparency this problem is not found. However, the market for investment properties is always founded to be inefficient and heterogenic.

The fair values of investment properties in almost all markets are based on estimations, predictions, and judgments rarely observed prices are available. For this reason, asset prices for investments that are traded in weak markets subject to volatility due to estimations when determining fair values, these estimations can provide a tool for discretion and manipulation to increase or decrease to adapt the financial position or income. Even if we assumed managers honesty in these estimations of the reported fair values, these predictions varies from one company to another and reduce the required comparability of financial statements between these companies (Wilson, 2001).

The reported of unrealized gains and losses that result from changes in fair values in net income or loss and in owners' equity for current period could provide effects to net income or loss and thus the market value will be affected for these companies. Muyingo (2003) argued the expected effects of changes in fair values, he pointed out that, solidity (equity-assets ratio), is tend to increase as the fair value of the investment properties increases if fair value model is adopted. Total equity, (shareholder's equity) which is the sum of restricted equity and the retained earnings also tend to increase also if fair value changes are reported in income. And finally, the volatility of net income and share prices are also expected to increase or decrease if the fair value model is adopted (Alkhadash, 2012).

Fair value model as an alternative measurement method is supported due to the fact that, fair value represents the current market price and these prices reflects the views of all market participants for an asset or a liability of economic attributes, including assumptions about cash flows, profit margins and risk (Muyingo, 2003). An accounting amount is considered value relevant if it has association with equity market values which is depicted through valuation model (Barth, 2000; Alkhadash, 2012).

Based on our prior discussion the hypothesis of our study is:

IAS 40 Fair value measurements' is irrelevant in valuing Jordanian real estate Company's market value.

Almost all of the accounting fair value relevance valuation models are referred to the contribution of Ohlson (1995). His efforts for linking accounting information, such as book values and earnings to market value of equity or share prices has provided theoretical support for the value relevance issue.

Barlev and Haddad (2003) pointed out that, fair value model provide more international harmonization for accounting practices. However, they mentioned some concerns about the use of fair value accounting. One argument against fair value accounting is the complexity of fair value numbers reported in the financial statements, these numbers are obtained through subjective methods of predictions and result in discretionary estimations. Therefore, there is a possibility that these reported results make confusion to decision makers especially if these changes of values mirrored in income and finally cause many distortions to the reported financial information. This result is expected to be greater if fair value model is applied for long lived assets associated with absence of active markets. For this reason, opponents of fair value accounting encouraged the IASB for issuance a particular standards with more measurement options, that allows the companies to choose the appropriate relevant method for measurements of their assets, as in IAS 40 companies are in favor for choosing either between fair value model or the traditional historical cost model (Cairns, 2006).

As we mentioned previously, in order to measure fair value effect, the book value (BV) of Jordanian real estate companies will be separated for two parts: book value before unrealized gains and losses recognized under IAS 40 and after the inclusion of unrealized gains and losses. We compared the incremental explanatory power of book value to that of book value before unrealized gains and losses to capture how unrealized gains and losses increase or decrease the incremental explanatory power of share price. So this ratio is obtained as follows, the BV is figured out twice, first when BV of owner equity (OE) include unrealized gains or losses of valuing investment property by fair value (**BViIP**) and the second time when the BV of OE exclude unrealized gains or losses (**BVeIP**). Therefore, the book value ratio (**BV_{Ratio}**) model that employed appear as follows:

$$BV_{Ratio} = BViIP_{it} / BVeIP_{it}$$

Where:

BViIP_{it}: The book value per share when owner equity *includes* unrealized gains or losses of valuing investment property at fair value for firm i during period t.

BVeIP_{it}: The book value per share when owner equity *excludes* unrealized gains or losses of valuing investment property at fair value for firm i during period t.

If the result of this ratio shows **1** this means that: **BViIP=BVeIP t** and that no unrealized gains or losses are included in owners' equity, but if the ratio result is greater than **1**, this means that, owners equity include unrealized gains, finally if the ratio result is less than **1** that means, the owners equity has reported unrealized losses.

Our reason for applying Ohlson (1995) model for examining the study hypothesis, is that, this model is the dominant used model in many previous studies by many researchers. This model clearly represents the value of any firm's equity as a function of its earnings and its book values, therefore, the equation of our study model is:

$$P_{it} = a_0 + a_1EPS_{it} + a_2BV_{it} + E_{it} \quad (1)$$

Where

P_{it}: market share price Firm i at the end of year t.

EPS_{it}: Earning per share for firm i during period t.

BV_{it}: Book value per share for firm i at the end of period t.

E_{it}: any other value relevant information of firm i for period t.

As previous studies, we followed Collins et al. (1997) methodology for comparison of the explanatory power of earnings and book values on share prices, Collins et al. (1997) decomposes the combined explanatory power of earnings and book value as measured by the coefficient of determination of equation (1) into three components:

- Book value incremental explanatory power.
- Earnings incremental explanatory power.
- Explanatory power common to both earnings and book value together.

For our calculations two new equations are derived from the respected original model the two equations are as (Collins et al. 1997) estimated:

$$P_{it} = b_0 + b_1EPS_{it} + E_{it} \quad (2)$$

$$P_{it} = c_0 + c_1BV_{it} + E_{it} \quad (3)$$

R² for equations (1), (2) and (3) are presented as R²_(EPS, BV), R²_(EPS) and R²_(BV) respectively. The incremental explanatory power for earnings (Incr. ER) can be measured by calculating the difference between R²_(EPS, BV) and R²_(BV). The incremental explanatory of book value (Incr. BV) is the difference between R²_(EPS, BV) and R²_(EPS).

The remaining R²_(EPS, BV) – Incr. EPS – Incr. BV, represents the explanatory power common to both earnings and book values and is represented as (Incr. COM). In order to capture the effect of unrealized gains reported in book value and its affect on the value relevance of market value (represented by share price), the previous analysis will be repeated using a measure of book value when unrealized gain and losses and are not reported then we make a comparison with explanatory power that obtained before.

4. Results of the Study

As previously mentioned in our study, the researchers will figure the book value ratio by using the following equation:

$$BV_{Ratio} = BViIP_{it} / BVeIP_{it}$$

Table 1 presents the results of book value ratios obtained for Jordanian real estate companies for the period under study. As shown in table 1, the use of fair value accounting has a significant effect on the firms' reported financial performance and on book value. The BV ratio found to be greater than 1 (**BV ratio >1**) for all years which means that, there are unrealized gains for all years, thus, the owner equity of these real estate firms are overstated by fair value revaluation amounts. The fair value of investment properties figures that used for analysis were calculated based on the disclosures of the balance sheet statements (owner equity), income statements and in the annual reports of respected companies. However, according to fair value requirements in Jordan, when fair value is applied alternative choice to historical cost for any company, fair value changes should be disclosed to the notes in annual reports.

Table 1. Book valueratios for real estate companies

During the Period of 2008–2011	
Year	BV ratio
2008	1.156
2009	1.113
2010	1.119
2011	1.120

Table 1 also show, the book value ratio has decreased from 1.156 in 2008 to 1.120 in 2011, the period that followed the last financial crises immediately this decrease could be justified by the more rationality practices when applying fair value, and another justification for this downward decrease is the newly enacted instructions for careful use of companies to fair value model.

The results in Table 1 also showed that, fair value accounting measurements effected firms' reported financial performance and consequently its **BV** ratio. As we argued earlier, fair value accounting might result in market price fluctuations for companies reported financial performance. The application of fair value model in well developed markets considers capital market is efficient, and any newly information is reflected in share prices quickly with sufficient accuracy. On the other hand, capital markets in developing countries react to these changes of values abnormally and share prices are fluctuated randomly based on noise rather than relevant information. The use of fair values based on these market prices may create abnormal fluctuations in firms net income and market value. This raises concerns that both the relevance and reliability of financial information will be reduced (Alkhadash, 2012).

To continue our investigation for the role of unrealized gains and losses, we conducted test of means difference between the value of **BViIP** and the value **BVeIP** when unrealized gains and losses were included or excluded, a paired t-test was employed to capture this effect. The comparison results between the two means of **BViIP** and **BVeIP** are shown in Table 2.

Table 2. Statistical tests to compare measures of book valuevolatility

Paired-sample means (T test)		
	BViIP	BVeIP
BV means	0.396	0.352
BV variance	0.458	0.431
Observations	67	
Df	66	
t Stat	2.982	
P(T <= t) two-tail	0.004* (P < 0.05)	
Two-related-samples test (Wilcoxon)		
z Stat	2.596	
P(T <= t) two-tail	0.000*(P < 0.05)	

Note: *The results are significant (P < 0.05).

In Table 2 the mean of **BVeIP** (0.352) appears less than the mean of **BViIP** (0.396), the variance also for the **BVeIP** is less than that of **BViIP**. These results prove that using fair value measurement result in to more increase in book value. These information generally affect the perception of current and potential investors, create debt covenants, and in some cases change credit ratings. As also appears in Table 2 both parametric and non parametric statistical tests were employed for testing the means difference of book value. The results showed that, the calculated **t-statistic** (t-stat) was 2.982 and the **P-value** (two-tails test) was 0.004 which is significantly below 0.05. This means that, there is a

significant difference in the value of *BViIP* and the value of *BVeIP* due to unrealized gains and losses inclusion. Also the two related samples test (Wilcoxon) show that, the z-statistic (Z-stat) was 0.000, which is significantly below 0.05. Consequently, Jordanian real estate firm's t-stat test and Z-stat test, parametric and non parametric statistical tests supports the results that we obtained by our previous tests that, there is a significant difference witnessed between the means of *BViIP* and *BVeIP*.

4.1 Regression Results

For further investigation about the effect of fair value relevance, the researchers tested the main hypothesis of the study by regressing the previously discussed model of Ohlson (1995) three times, once for equation (1) and once each for the derived equations (2) & (3). Different symbols for each equation coefficients were used by the researchers for more clarity, as shown in Table 3.

Table 3 presents regression results of coefficients and t-statistics for equations 1, 2 and 3 when we included unrealized gains in owner equity. These results of equation (1) show that, there is a strong association between stock prices and operating income and book values, income and book value is significant at better than 1% level for all years combined.

Table 3. The regression results of prices on income and book values for 2008–2011

Equation 1: $MV_{it} = a_0 + a_1NI_{it} + a_2BV_{it} + E_{it}$								
Equation 2: $MV_{it} = b_0 + b_1NI_{it} + E_{it}$								
Equation 3: $MV_{it} = c_0 + c_1BV_{it} + E_{it}$								
Year	N	a ₁	a ₂	R ² _(NI&BV)	b ₁	R ² _(NI)	c ₁	R ² _(BV)
2008-2011	66	0.500	0.522	0.424	1.321	0.174	0.476	0.376
t-stat		2.231**	6.361**		(2.507)**		7.034**	
F-stat				25.285		6.286		49.595
Sig		0.001	0.000	0.000	0.015	0.015	0.000	0.000
* sig at 5%		** sig at 1%						

Table 4. Results of the decomposition of adjusted R²

Year	R ² _(NI&BV)	R ² _(NI)	R ² _(BV)	Incr.NI *	Incr.BV **	Incr.COM ***
2008-2011	0.424	0.174	0.376	0.048	0.25	0.126
* $Incr.NI = R^2_{(NI&BV)} - R^2_{(BV)}$ ** $Incr.BV = R^2_{(NI&BV)} - R^2_{(NI)}$ *** $Incr.COM = R^2_{(NI&BV)} - Incr.NI - Incr.BV$						

The results shown in Table 3 for equations (2) and (3) indicate that, net income and book values are individually explains a significant percentage of the change of stock prices for all years combined. The adjusted R² also proves that, the net income alone, book value alone, and net income and book value combined explain 17.4 %, 37.6% and 42.4%, respectively of changes in market prices.

Table 4 also shows the results for the decomposition of adjusted R². The results revealed that, book value added to explanatory power more than that of net income. The incremental information content of book value, *Incr. BV*, is higher by 25%. By contrast, the incremental information content of net income, *Incr. NI*, is only 4.8%. The common explanatory power of earnings and book value together, *Incr. COM*, is 12.6% where $Incr.COM = R^2_{(NI&BV)} - Incr.NI - Incr.BV$.

As mentioned earlier, the study also aimed to examine the role of unrealized gains and losses when included in book value, and whether this inclusion explain the changes in market value through the increase or decrease in stock prices for these companies. We excluded the unrealized gains and losses from owner equity and use the resulting earnings number in the regression equations (1) and (3) and compared the coefficients and incremental explanatory power of the new measure of earnings.

Table 5 presents the regressions results for equations 1, 2 and 3. The results show a strong relationship between stock prices and net income before unrealized gains and losses and book values. The adjusted R² for the regression revealed that, net income and book values before unrealized gains and losses jointly explain about 30.9% of the

changes in share prices with a decrease of 27%. The results of equation (3) also show that, when we removed unrealized gains and losses from book value reduction in the explanatory power was witnessed, it decreased from 37.6% as shown in Table 4 to 24.3% in table 6, which equals approximately about 35% decrease in book value explanatory power.

The decomposition of adjusted R^2 as appear in Table 6 revealed that excluding unrealized gains and losses from the measure of earnings reduces the incremental information content, compared to the results shown in Table 4. The incremental information content of book value before unrealized gains and losses (*Incr. BVBGL*), is relatively low at 13.1% relative to 25% for book value as appeared in Table 4. On the contrary, the incremental information content of net income (*Incr.NI*) was increased up to reach 6.2% from approximately 5%. The common explanatory power of earnings and book value (*Incr. COM*), is about 11.2%. However, when unrealized gains and losses are excluded from book value, the net income makes more addition to the explanatory power of the model than owner equity. Generally, our study results at the end showed that, unrealized gains and losses has important role in explaining the market value (represented by share prices) of Jordanian real estate companies, and the reported unrealized gains and losses in owners' equity affect the incremental explanatory power of book values.

Based on the previously discussed results we reject the null hypothesis and accept the alternative one that is, IAS 40 fair value measurements is relevant in valuing Jordanian real estate companies market value, and thus fair value accounting is relevant for the Jordanian context.

Table 5. Excluding unrealized gain & losses from owner equity on the explanatory power of earnings

Equation 1 : $MV_{it} = a_0 + a_1NI_{it} + a_2BVBGL_{it} + E_{it}$								
Equation 2: $MV_{it} = b_0 + b_1NI_{it} + E_{it}$								
Equation 3: $MV_{it} = c_0 + c_1BVBGL_{it} + E_{it}$								
Earnings measure	N	a₁	a₂	R²_(NI&BVBGL)	b₁	R²_(NI)	c₁	R²_(BVBGL)
<i>BVBGL</i>	66	0.108	0.297	0.305	1.321	0.174	0.313	0.243
<i>t-stat</i>		(0.614)*	4.803**		(2.507)**		5.604**	
<i>F-stat</i>				15.743		6.286		31.410
<i>Sig</i>		0.029	0.000	0.000	0.000	0.015	0.000	0.000

* sig at 5% ** sig at 1%

Table 6. Results of the decomposition of adjusted R^2

Earnings measure	R²_(NI&BVBGL)	R²_(NI)	R²_(BVBGL)	<i>Incr.NI</i> *	<i>Incr.BVBGL</i> **	<i>Incr.COM</i> ***
<i>BVBGL</i>	0.305	0.174	0.243	0.062	0.131	0.112

* $Incr.NI = R^2_{(NI \& BVBGL)} - R^2_{(BVBGL)}$ ** $Incr. BVBGL = R^2_{(NI \& BVBGL)} - R^2_{(NI)}$
 *** $Incr.COM = R^2_{(NI \& BVBGL)} - Incr.NI - Incr. BVBGL$

5. Conclusion

The general findings of our study when examining the association between Jordanian real estate companies fair value revaluations and its market value (represented by share prices) provided a conclusive evidence that the market value of Jordanian real estate companies are associated with the use of fair value model of IAS 40, and statistically significant in Jordan, our findings agrees with the results of prior international, regional and local studies of value relevance of fair value accounting.

The study results provide another evidence added to the Jordanian accounting literature when it confirmed that, fair value measurements are highly related to market values, and it is statistically significant through the entire period under study. Furthermore, our conclusions confirmed prior results of local and regional value relevant studies, (Alkhadash, 2012; El-Shamy and Kayed, 2005; Alkhadash & Abdullatif, 2009; Alsaeed, 2005; Al-Barrak, 2011) for developing countries. The overall Results of our study showed and confirmed that fair value accounting

measurements in the Jordanian context are value relevant and serve the primary objective of accounting information in helping the different users in their decision.

6. Limitations of the Study

Each study has limitations. Our limitations of this study arise from the unavailability of data sources, missing data from the Jordanian companies guide data which resulted in excluding some of firms observations. This generally could increase the risk to generalize our results from such a small sample (there were only 55% of the total number of observations are found by the researchers). Therefore, similar to many value relevance studies, the study was restricted by a small sample size, which is common in emerging markets, and this might decrease the comparability of our results to those of international and some regional studies.

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