Review of Valuation Models for Private Enterprises in Nigeria

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Abstract
The objective of this paper is to ascertain which of the two models (i) a model based on earnings variables alone and (ii) a model based on both net asset and earnings variables proves to be better than the other in valuing private enterprises in Nigeria using three sample firms. It is true assets are very important in a firm but it is not easy to adjust the value of the assets in the balance sheet to get the net asset because of the obvious differences between the historical cost of the assets and their current market value. To incorporate asset variables in model (ii), equity value was ascertained by subtracting long-term debt (balance sheet item) from firm value. Model (ii) therefore which recognizes the contributions of assets in earning potentials of a firm appears to be better than the model that recognizes earnings alone. The theoretical formulations, and empirical support of the valuation approaches are evidence of the model`s reliability and validity.
Key words: Identify, valuation models, Private enterprises, earnings, earnings/asset

1.0 INTRODUCTION

Business valuation is a process and a set of procedures used to estimate the economic value of an owner`s interest in a business (Campbell, Johnson and Howard, 2001). In the process, valuation tools are used by market participants to determine firm value in circumstances surrounding buy/sell of a business. Many approaches/formulas are advocated by researchers in carrying out this important assignment. The major approaches as identified by Price, Vos and Dixon (1987) include the book value, adjusted book value, replacement value, liquidation value, the capitalization of earnings, the excess earnings, discounted cash flow and the market valuation techniques. While Fernander, (2006) classified valuation methods into six groups – the balance sheet, income statement, mixed goodwill, cash-flow discounting, value creation and options.

The above approaches could basically be grouped into four major groups namely - the asset-based, the income/earnings-based, the cash flow discounting and the market-based valuation approaches (Stevenson, Roberts and Grousebeck 1989). Researchers and professionals advocate these approaches in the literature as being theoretically correct for valuation of private businesses using data from publicly quoted companies (Anderson, 2009, Mastracchio and Lippitt, 1996; Lippitt and Mustracchio, 1993; Pratt, 1993; Buns and Walker, 1991; Lloyd and Hand, 1982; Boatman and Baskin, 1981; Carland and White, 1980 and LeClair, 1990). It is revealed in some studies that no single technique of valuation method will give a value that will be considered to be accurate because each approach has its advantages and drawbacks; most often more than one technique are combined and reconciled with each other to arrive at an acceptable value calculated (Corporate Professionals, 2012). However, finance and accounting literatures do not appear to have agreed on any generally accepted model for determining the value of private firms.

Because of the dominance of small and medium enterprises (SME`s) in the entrepreneurial industry in Nigeria, coupled with capital market imperfections, sellers and buyers of SME`s most often determine the value of their firms through an intricate process of negotiation between them which most of the time may involve an intermediary called agent at a percentage cost (Okafor and Onwumere, 2011). Such a process of business valuation through negotiation could be assumed to be unscientific, and lacking in strong theoretical support in the literature. Therefore, in choosing the appropriate approach for valuing private firms in the Nigerian business environment, appraisers should consider the theoretical support of the approach in relation to Nigeria's business environment.

In the previous study of Okafor and Onwumere (2011), the authors considered the process and common techniques for estimating the value of firms and the type of data utilized in the process. Two basic models were evident – (i) the earnings valuation model and (ii) the model involving combination of balance sheet and income statement variables. The two models capture the environmental conditions in the economy and have evidence of theoretical support in the literature. In this study, we shall empirically use descriptive and quantitative data to ascertain which of the two models proves to be better than the other in valuing SME`s in Nigeria.

2.0 THEORETICAL FORMULATIONS OF THE VALUATION MODELS

Valuation determines the price, which is the agreed offer and acceptance involving the buyer and the seller respectively before a property is said to be bought. Apart from the fact that valuation tells the buyer the highest price he should pay, and the seller the lowest price at which he should be prepared to sell, valuation could be used for a wide range of purposes; one of which is for strategic and financial planning. This is because valuation is fundamental for deciding what products to continue, business lines to maintain, countries to do business with and customers to maintain grow or abandon (Fernandez 2006). It is also fundamental for identifying sources of economic value creation and destruction within the enterprise and provides a means for measuring the impact of the enterprise contributions to the economy (Fernandez, 2002). Owners and investors need to know the value of their equity shares to determine their effective ownership when considering harvesting the value of a firm (Okafor, 2008; Petty et al, 1999).

Also, credit institutions are interested in the market value of a firm because it helps them assess the risk involved in extending credit to a firm (Okafor, 2011). It is also important to establish the value of a firm for the purchase of insurance policy and for reaching an equitable settlement in damage cases such as dispute in sharing assets, divorce litigations. In addition, the value of a firm can provide an important performance measure for management and for employee benefit planning purposes (Petty et al, 1999). Finally, valuation of a business is a prior step in the decision to reconstruct, sell, merge, milk, the business or buys other businesses (Aguolu, 2010).

In determining which approaches to use, the appraisers must exercise discretion as each technique has advantages and drawbacks which must be considered. It is advisable to consider more than one technique and reconcile with each other to arrive at a value conclusion (Corporate Professionals 2012). A measure of professionalism, knowledge of financial management, mathematics and understanding entrepreneurial environmental conditions would be helpful.

3.0 EMPIRICAL REVIEW

The issue of developing appropriate models for the evaluation of private businesses has been addressed by many researchers. Boatsman and Baskin (1981); Carland and White (1980); Shilt (1984); LeClair (1990); Lloyd, et. al. (1982), Lippitt and Mastracchio (1993); Mustracchio and Lippitt (1996) as well as Pricer and Johnson (1997) have all tested the reliability of different valuation models. All the researchers used publicly quoted firms in their study because the market prices of small firms' shares are difficult to ascertain.

Boastman and Baskin (1981) have developed a model based on the capital asset pricing model, and applied it through a two stage process in estimating the market value of an unquoted firm. First, he selected a publicly quoted firm which cash flows closely correlated with that of the private small firm being assessed. The model was applied to the surrogate quoted firm and the resulting assessed value adopted as the approximate value for the private small firm being assessed. Both the earnings capitalization and the excess earnings valuation approaches were applied in the valuation. The authors indicated that their empirical results provided more support for the capitalization valuation approach.

Further more, Mastracchio and Lippitt (1996) have examined the relative abilities of the earnings capitalization model and the excess earnings using publicly traded firms of some industries. They provided empirical evidence to show that excess earnings can provide estimates of value that are superior to those of the earnings capitalization model. Shilt (1984) tried to provide the validity of the excess earnings model by arguing that firms with high rate of earnings on tangible assets should have a lot of goodwill. Thus, goodwill was calculated as the difference between market value and net worth. The result however, indicated no strong correlation between return on net tangible assets and percentage of net worth comprising the goodwill component. Therefore, the result provided very limited support for the excess earnings model. LeClair (1990) compared earnings capitalization model (EC model) with the excess earnings model. Based on his comparison on an industry-by-industry base, he developed an adjusted book value model, which is used to derive the value of a firm.

LeClair model leads to large margins of error when applied across industries. It displayed a disturbing tendency to yield overvaluation and undervaluation depending on the industries. The poor performance of the excess earnings

model could be traced by lack of linkage to a market determined discount rate. As Pratt (1989) has argued, the most difficult thing in a valuation based on EC model and other historical earnings models is the determination of what rate of capitalization to use. Evaluators either rely on a market determined rate or else build their own rates based on the prevailing risk free rate of return and the appropriate risk premium.

Most arguments in the literature maintain that book value provides sound basis for estimating firm value because it is the assets of a business which are manipulated to generate income (Pricer and Johnson, 1997). In spite of the laudable arguments of previous researchers in favour of asset valuation model, the position of this study is that the asset valuation model may not yield optimal results in Nigeria because of the peculiar environment. It has been established that sole proprietorship and retail and service type of businesses constitute greater percentage of small businesses existing in Nigeria (Okafor, 2007). This form and this type of businesses dominant in Nigeria do not possess large asset base and the value of such firms may be in their ability to reach a profitable market through location where they offer unique products and services which may result in large earnings. Thus, the value of such firms should be derived from the earnings stream generated by the business.

An analysis of the models above shows that none of the models identified by the authors could be used effectively in Nigeria because of the limitations and challenges in the approaches. It is imperative to modify a model from those approaches to get a likely valuation model of private business valuation model for the Nigerian government.

4.0 MODEL DEVELOPMENT AND SPECIFICATION

In modifying an appropriate model for the valuation of private businesses in Nigeria, the following issues must be considered Okafor and Onwumere, 2011):

- The theoretical support of the model in the literature,
- The level of risk associated with a business and its earnings stream which are influenced by the environmental conditions for entrepreneurship in Nigeria,
- The simplicity of the model realizing that many entrepreneurs in Nigeria are not properly educated in financial management, and
- The feasibility of the model, i.e., the possibility of accessing necessary data for applying the model.

It is noted that the level of risk associated with a business and its earnings stream is significantly affected by the environmental conditions of entrepreneurship. In Nigeria for instance, the business environment is affected to a large extent by peculiar macro and micro economic factors. In a study of the entrepreneurial environment in Hungary, Fogel (2001) identified four major issues which defined the operating environment of small business, namely: the level of financial and non-financial assistance received; the level of entrepreneur or business skill; socio-economic conditions and government policy. The Fogel model is defined as:

$$\sum ECE = (FA + NFA + EBS + SEC + GPPEA)$$

where:

ECE = Environmental Conditions of Entrepreneurship; FA = Financial Assistance; NFA = Non-Financial Assistance; EBS = Entrepreneur and Business Skills; SEC = Socio-Economic Conditions; GPPEA = Government Policy and Proceedings for Entrepreneurship Activities

Okafor (2008) adopted this model in her study of the business environment of small entrepreneurs in Nigeria. In both studies, it was found that constraints or deficiencies in any of these variables could affect the earnings as well as the value of a small business. Before specifying a model, the dependent and independent variable must be identified. The dependent variable is the value of a firm and the independent variables which are factors influencing the value of a firm are identified as net asset, earnings and a measure of the risk factor in the environment. The relationship between this dependent variable (value of a firm), and the independent variable (net assets, earnings and the risk factor of doing business in the environment) is explored in deriving the valuation model. Two models are advocated in this paper. The first model is basically based on earnings variables alone, while the second model is a combination of net asset and earnings stream. The models are expressed in equations one, two and three below:

First Model
The model is adopted from Petty, Martin and Kinsinger, (1999:40) and is stated as follows:

$$FV = \sum NI + (IT + IE + D + A) \text{ multiplied by the earnings capitalization rate or} \quad (Cr\ldots.(i)$$

where: FV = Firm Value; Ni = Net income; IT = Income taxes; IE = Interest expense; D = Depreciation; A = Amortization; Cr = Capitalization rate or earnings multiple.

Derivation
The expected earning is capitalized using a desired rate of return. Typically, this capitalization rate (or multiple) is derived from market sources data or the valuation experience of the person doing the valuation. In determining the multiple, implicit assumptions must be made about the firm's riskiness and its expected future earrings growth. The greater the firms risk, the lower the multiple should be; and the greater the expected growth rate of earnings, the higher the multiple should be. The multiple will also reflect the competitive operating conditions of the industry.

Second Model
This second model is a modification of Pricer and Johnson (1997) model. It is a combination of asset and earnings variables data as well as the consideration of risk of doing business in the environment. The model is expressed as follows:

$$V = f(NA, \underline{Er},) \, Ec,) \ldots\ldots\ldots\ldots\ldots\ldots.. \text{ (ii)}$$
$$5$$

where:

V = Value of a firm; NA = Net asset value; $\underline{Er}$ = Average earnings $\underline{(EAITDA)}$
$ 5 5$

Ec = Environmental conditions of entrepreneurship (risk of doing business in the environment)

The implication of the equation implies that the value of a firm is heavily dependent on its net asset, and earnings potentials, both of which are heavily affected by the environmental conditions of entrepreneurship (risk of doing business in the environment). The equation can be transformed to a more testable form as:

$$V = ao, + a_1 NA + a_2 \underline{Er} \, x \, Cr + e \ldots\ldots\ldots \text{ (iii)}$$
$$5$$

where:

a_1, a_2, are the co-efficients of the independent variables – net asset, and average earnings (EAITDA) for the past five years respectively; e is the error term.

The co-efficient of each of the independent variables should be significantly related, to the value of a firm.

Derivations
Net asset is represented by total book value of the assets (TA) less current liabilities (CL), i.e, TA – CL = Net Assets. Average earnings after interest, taxes, deprecation and amortization = (EAITDA) for a track of 5 years. Both net assets and EAITDA could be ascertained from the financial records (the balance sheet and income statement respectively. EAITDA is capitalized at some rate of return called capitalization rate, which reflects the risk factor in the environment. In this paper, 5% capitalization rate is used based on the experience of the evaluator after considering environmental conditions in the economy at the time of the research.

5.0 EMPIRICAL SUPPORT
Data Collection
Data for the study were collected from three SME firms in Nigeria that fairly keep financial records. Information collected from the financial records of the firms include: net income, income taxes, interest expenses, depreciation amount, long-term debts, and earnings for the accounting year of the firms under review. It was not easy for the researchers to adjust the value of the assets in the balance sheet to get the net asset because of the obvious differences between the historical cost of the assets and their current market value. In addition to secondary data, face-to-face interview was used to collect information on the assumptions taken to fix the capitalization rate.

The Data

Table 1: Financial Information from the Sampled Firms

Variables	Firm A N"000"	Firm B N"000"	Firm C N"000"
Net Income	701,250	147,340	73,480
Income Taxes	476,250	93,241	42,111
Interest Expenses	17,250	3,222	1,501
Depreciation	17,625	3,410	1,731
Long-term Debt	20,250	4,775	2,781
Net Asset	-	-	-
Earnings: EBITDA EAITDA	1212355 191,125	247213 47,467	122823 28,137
Capitalization rate/risk factor	5%	5%	5%

Source: From survey data

Equation i, ii, and iii in the models were tested.

Equation i is restated thus:

$FV = \sum NI + (IT + IE + D + A)\, Cr$………..(i)

Substitution with data collected is reflected in table 2. to get firm value.

Table 2: Computation of Firm Value

Variables	Firm A N"000"	Firm B N"000"	Firm C N"000"
Net Income	701,250	147,340	73,480
Income Taxes	476,250	93,241	42,111
Interest Expenses	17,250	3,222	1,501
Depreciation	17,625	3,410	1,731
EBITDA	1,212,355	247,213	122,823
Multiple by Cr	5	5	5
Firm value	6,061,775	1,236,065	614,115
Long-term debt	(20,250)	(4,775)	(2,781)
Equity value	6,041,525	1,231,290	611,334

Source: From survey data

The table shows firm value for firms A, B and C as ₦6,061,775,000; ₦1,236,065,000 and ₦604,115,000 respectively. Equity value is ascertained by subtracting long-term debt of the business from firm value. Firm A, B and C would not like to receive anything less than the equity value of ₦6,041,525,000; ₦1,231,290,000 and ₦6,111,334,000 respectively, even though firm value is higher than equity value. The data in Table 1 have to be substituted in equation (ii) to ascertain value of a firm based on net asset

Equation (ii) is restated thus: $V = f(NA, \underline{Er},)\, \dfrac{Cr}{5}$

The implication of the equation is that the value of a firm is heavily dependent on its net assets and average earnings potentials for the past 5 years.

Restating the equation is thus:

$$V = a_0 + a_1 NA + a_2\, \underline{Er} \times \frac{Cr}{5} + e \dots\dots\dots\dots\dots (iii)$$

The value of a firm is a dependent variable. The co-efficient of net asset and average earnings which are independent variables should be significantly related to the value of a firm.

6.0 WHICH IS THE BEST MODEL?

The values of firms A, B, and C in table 2 were derived using models (i) or (ii). Model (i) was based on variables from income statement alone, while model (ii) was based on both variables from income statement and balance sheet. The good thing of the two models is that capitalization rate is applied in both models. The magnitude of the firm's risk influences the capitalization rate/earnings multiple, as well as the expected growth in earnings. This rate capitalization or earnings multiple is normally determined using the experience of the professional making the

valuation and market data which takes into considerations the environmental conditions for entrepreneurship. Information collected from the entrepreneurial environment helped on the assumption taken to fix the capitalization rate   (risk of doing business in the environment).

Studies reveal that each approach of valuation has its advantages and drawbacks, and combination of approaches is recommended to reconcile one from the other. It was not easy for the researchers to adjust the value of the assets in the balance sheet of the sample firms in order to get the net asset because of the obvious differences between the historical cost of the assets and their current market value. Equation (ii) is restated thus: $V = f(NA,(Er/5)Cr$. The implication of the equation is that the value of a firm is heavily dependent on its net assets and average earning potentials for the past 5 years.

Alternatively equity value is ascertained by subtracting long-term debt of the business from firm value even though firm value is higher than equity value. The owners would not like to receive anything less than the equity value. From the arguments evident in the literature and in the analysis, the model combining balance sheet and income statement variables proves to be better than the one using only income statement variables alone. Business income is derived from the effective manipulation of the business assets, and there is no way you can formulate a model for valuing a business without incorporating its assets variables. The reliability and validity of the model is derived from the theoretical formulation and empirical review.

7.0 SUMMARY AND CONCLUSION

Four valuation approaches are being advocated by various researchers for determining the value of small businesses. However, no particular approach is generally accepted, which explains why many small business appraisers especially those in developing economy fall back on unscientific methods of evaluation for small businesses whenever the need arises.

This paper advocates two models for evaluating private businesses in the Nigerian environment. The first model is the earnings valuation model using earnings variables and an appropriate capitalization rate generally derived as the reciprocal of the price earnings multiple. This rate is normally derived from the market data where the market is efficient. It could also be based on the experience of a professional doing the valuation. In determining the capitalization rate, many assumptions are made regarding the environmental risk of a firm as well as its expected future growth in earnings. From the data collected, firm value was ascertained by adjustment of Net Income to arrive at EBITD which is multiplied by the capitalization rate to derive firm value as reflected in Table 2.

The second model uses a combination of asset and earnings variables derived from the balance sheet and income statement of the sample firms.   The net asset and earnings are capitalized making an assumption similar to those in model one. In both cases, the magnitude of the firm's risk influences the capitalization /multiple, as well as the expected growth in earnings, and finally reflects in the value of a firm.
The two models obviously conform to the theoretical frameworks in the literature, and have advantage to give the appraisers some opportunity to incorporate the impact of environmental conditions in the economy at the time of valuation. The models are also simple and feasible to apply. The theoretical validity of both models is not in doubt.

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