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CORPORATE VALUATION MODELING FOR STRATEGIC FINANCIAL DECISIONS

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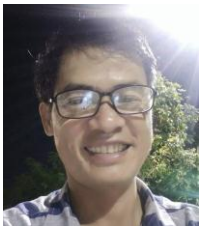

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ABSTRACT

This paper develops a framework for the application of corporate valuation model in strategic financial decisions. The framework includes four main steps for corporate valuation modeling and financial decision considerations on corporate value. In this paper, the corporate valuation model approaches discounted cash flow (DCF) and capital asset pricing model (CAPM) for strategic financial decisions of investment appraisal and capital structure. The study provides an effective tool in corporation valuation and value based management.

Contribution/ Originality: This paper contributes a theoretical framework for the application of corporate valuation model in strategic financial decisions as the firm's value drivers.

1. INTRODUCTION

Corporate valuation is seen as having a central role in finance and nearly everything in finance could be classified under a subcategory of valuation (Keown *et al.*, 2002). Many researchers attempted to develop valuation models to provide investors and decision makers with supportive valuation tools in making strategic financial decisions (investment appraisal, capital structure, merger and acquisition) to maximize the corporate value. According to Damodaran (2012) valuation methods can be generally grouped into three categories: discounted cash flow valuation, relative valuation, and contingent claim valuation. Discounted cash flow methods use proxies of dividend, earning and cash flow, and discount them at a given rate to get the asset's present value. Relative valuation methods determine the value of an asset by comparing variables such as earning, cash flow, book value or sales. Contingent claim valuation methods apply option pricing models to measure the value of an asset with the characteristics of an option (Wang and Halal, 2010). According to Mun (2002) real option analysis requires using a DCF model, but there must be uncertainty involved in the evaluation process. These valuation methods can lead to different results depending on the assumptions used in each method (Nassaka and Rottenburg, 2011).

In literature, capital asset pricing model (CAPM) and discounted cash flow (DCF) method are mainly used for the application of corporation valuation model. The CAPM marks the birth of asset pricing theory (Sharpe, 1964; Lintner, 1965; Black, 1972). The CAPM offers powerful predictions about how to measure risk and the relation between expected return and risk (Fama and French, 2004). The DCF method uses proxy of cash flow, in which the corporate value is the present value (PV) of free cash flow (FCF) discounted by weighted average cost of capital (WACC). This DCF method is intuitively easy to understand and works regardless of a firm's accounting principles (Morris, 1994; Penman, 2010). Moreover, the corporate valuation model identifies a firm's value drivers and exams its growth and risk (Damodaran, 2011). Although many earlier researchers attempt to develop valuation models and framework, but it is still not considered strategic financial decisions as the firm's value drivers. This is also a gap between finance and strategic planning (Myers and Majluf, 1984). For that reasons, this paper develops a theoretical framework for the application of corporate valuation model in strategic financial decisions. The study result provides a theoretical insight on corporation valuation that explains the firm's value drivers and exams its growth and risk in strategic financial decisions.

2. THEORETICAL FRAMEWORK

The primary objective of financial management is to maximize the corporate value or stockholder value. However, to maximize value, managers should understand the relationship between the stockholder value and the corporate value, they also need a tool for estimating the effects of alternative strategies. Many researchers have been developed valuation models. The question is how to use these valuation models to guide their financial decisions. To deal with this problem, let's explore the breakdown of corporation valuation to see how to measure stockholder value and corporate value as in Figure 1.

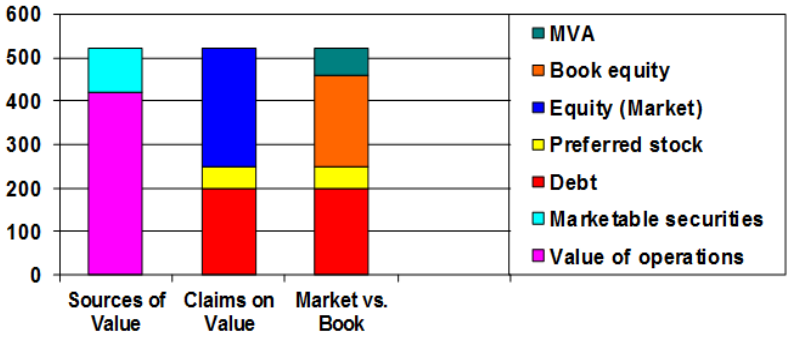


Figure-1. Breakdown of corporate value

Source: Brigham and Daves (2014)

Sources of value indicate market value of firm assets that includes operating assets and non-operating assets. The non-operating assets are financial investments under marketable securities that can be exchanged with the market price (short and long term securities). The operating assets are investments in real assets going operations to create free cash flows in the future that affect corporate value, where value of operations presents the market value of these operating assets. Claims on value indicate who get benefit (value) from operations. The value of debt and preferred stock in balance sheet are also represented the market value. Meanwhile, stock price represents stockholder value. Even the corporate value and the stockholder value are two different measures, but the objective is given the same way to maximize the market value added (MVA) that is also the gap between the market value and the book value of both corporate value and stockholder value.

The stockholder value depends on the stream of income to investors and the riskiness of that stream. Therefore, the managers need to know how alternative actions are likely to affect stock prices. The dividend discount model is used to determine the market value of stock (stock price) as in Equation (1).

$$P_0 = \sum_{i=1}^{\infty} \frac{D_i}{(1+R_s)^i} \quad (1)$$

Where, P_0 = market value of stock

D_i= dividend of period i

R_s= return on stock.

Dividend growth model is considered as an extension to dividend discount model and is built with several assumptions: (1) the cost of capital cannot be higher than the growth rate of the company; (2) companies uses their cost of capital as a discount rate; and (3) this model has a constant rate. In order to determine the required rate of return on the firm's stock, the capital asset pricing model (CAPM) presents the relationship between stock's risk and expected return on stock (Torrez *et al.*, 2006) as in Figure 2.

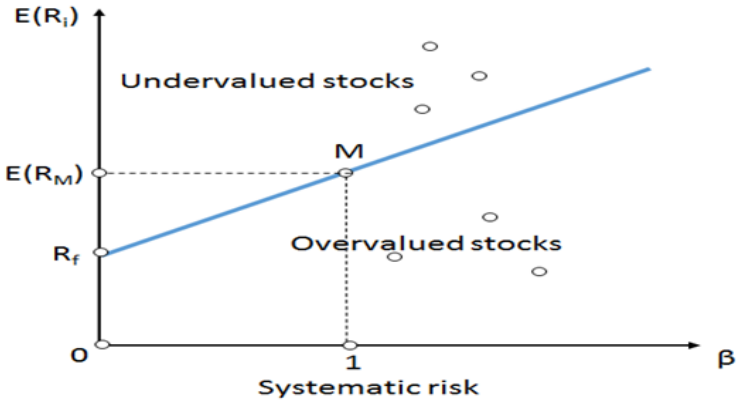


Figure-2. Security market line

Source: Adapted from Torrez *et al.* (2006)

$$E(R_i) = R_f + \left(E(R_M) - R_f\right) \times \beta_i \quad (2)$$

Where, $E(R_i)$ = expected return on stock i

R_f = risk free rate

β_i = risk of stock i

$E(R_M)$ = expected return of the market

The capital asset pricing model is built upon perfect capital market in which security market line (SML) is presentation for the relationship between the expected return on stock and the risk of stock. While the CAPM includes a single factor of systematic risk (Ardalan, 1999) the CAPM model has not specified the stated variables that characterize the uncertainty (Chiang and Doong, 2000). Fama and French (1996) settled a new multifactor model in which the returned value depends on several variables.

Corporate value includes both values of both non-operating assets and operating assets, in which the value of non-operating assets is estimated by market price of marketable securities and investment securities in the stock market. The value of operating assets (V_{op}) depends on an infinite stream of free cash flow (FCF) and weighted average cost of capital (WACC) as illustrated in Equation (3).

$$V_{op} = \sum_{i=1}^{\infty} \frac{FCF_i}{(1+WACC)^i} \quad (3)$$

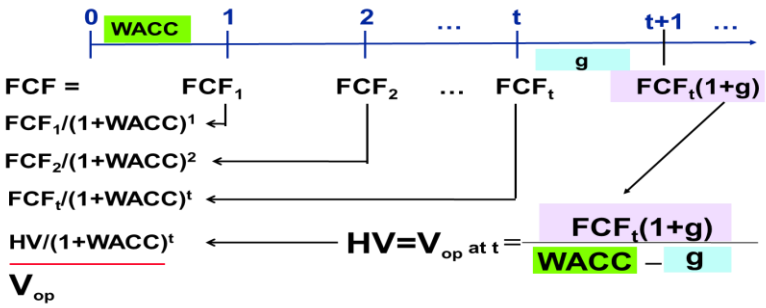


Figure-3. The typical corporate valuation model
Source: Brigham and Daves (2014)

The typical corporate valuation model divides into two periods as in Figure 3. The first period presents expected free cash flows for initial forecast years (t years) that are based upon investment and financing strategy. The second period is assumes with constant growth rate of g after year t. The present value at year t of free cash flows (FCF) after year t with constant growth is so-called horizon value (continuing value). The following formula shows how to measure the value of operations (V_{op}).

$$V_{op} = \sum_{i=1}^{t} \frac{FCF_i}{(1+WACC)^i} + \frac{FCF_t(1+g)}{(WACC-g)\times(1+WACC)^t} \quad (4)$$

From above formula, the value of operations (V_{op}) depends on investment and financing decisions. While investment decisions affect expected free cash flows (FCF), financing decisions affect both weighted average cost of capital (WACC) and expected free cash flow (FCF).

The free cash flow (FCF), the difference between cash flow from operations and cash investment in operations (Penman, 2010) is measured by net operating profit after tax (NOPAT) and investment in net operating assets including fixed assets and working capital.

$$FCF = NOPAT - Investment\ in\ net\ operating\ assets \quad (5)$$

The weighted average cost of capital (WACC) is the rate of return that investors expect from investing in a given company instead of other companies with similar risk (Myers *et al.*, 2009). The WACC depends on weight and cost of each source of capital.

$$WACC = R_d(1-T)W_d + R_sW_s \quad (6)$$

Since the corporate value includes value of operating assets and value of non-operating assets (financial investments), the relationship between corporate value and stockholder value is illustrated as follows:

$$V_{op} + Financial\ Investment = Debt + Preferred\ Stock + Stockholder\ Value \quad (7)$$

The value of operations (V_{op}) can be rewritten as follows:

$$V_{op} = Debt + Preferred\ Stock + Stockholder\ Value - Financial\ Investment \quad (8)$$

By replacing V_{op} into formula (4) to estimate constant growth rate of g as follows:

$$g = \frac{\left(V_{op} - \sum_{i=1}^{t}\frac{FCF_i}{(1+WACC)^i}\right)\times(1+WACC)^t \times WACC - FCF_t}{\left(V_{op} - \sum_{i=1}^{t}\frac{FCF_i}{(1+WACC)^i}\right)\times(1+WACC)^t + FCF_t} \quad (9)$$

3. CORPORATE VALUATION MODEL

The corporate valuation model can be set up by using four steps. In the first step, the value of operations (V_{op}) is determined upon the relationship between sources of value and claims on value. The second step involves determining weighted average cost of capital (WACC) as discount rate to determine present value of the free cash flows (FCF). The third step forecasts free cash flows for initial t-year period (so-called forecast period). This forecasted FCF is based on capital budgeting and financing planning. Additionally, the constant growth rate (g) is

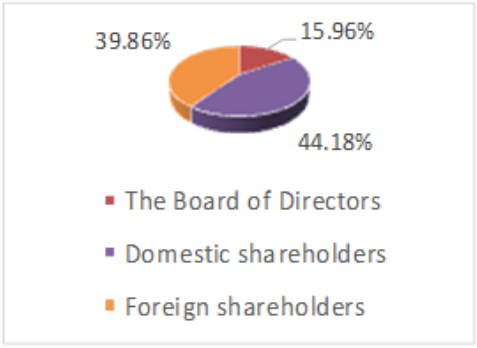
also estimated for the continuing period (for years after terminal year t) in this third step. The last step explains how to project expected stream of free cash flows in details. There are strict consistent assumptions for corporate valuation model as follows:

- Firms can be grouped into homogeneous classes based on business risk.
- Investors have identical expectations about firms' future earnings.
- There are no transactions costs.
- The book value of equity is also the stockholder value.

Hoa Sen Group is used as a case study for corporate valuation modeling in this paper. Hoa Sen Group was established in accordance with the Business Registration Certificate ("BRC") No. 3700381324 issued by the Department of Planning and Investment of Binh Duong Province on August 8th, 2001. Starting from a steel sheet retail store, Hoa Sen Group (ticker symbol: HSG) is now known as the leading steel sheet enterprise in Viet Nam and South East Asia with VND 1,300 billion of charter capital and nearly 6,000 employees. The Company's shares were listed on Ho Chi Minh City Stock Exchange in accordance with Decision No. 117/QD-SGDHCM dated 5 November 2008.

Table-1. Shareholder structure on November 25th, 2015

No.	Shareholder	Owning volume	Owning rate
1	The Board of Directors	16,089,960	15.96%
2	Domestic shareholders	44,525,873	44.18%
	➢ *Domestic individuals*	16,680,335	16.55%
	➢ *Domestic organizations*	27,845,538	27.63%
3	Foreign shareholders	40,174,957	39.86%
	Total	**100,790,790**	**100%**



Source: Annual report: The fiscal year 2014-2015

Step 1: Value of Operations (V_{op})

$$V_{op} = Stockholder\ Value + Debt + Preferred\ Stock - Financial\ Investment$$

Table-2. Value of Operations (V_{op}) in 2015

Value of Operations (Vop) in 2015 (Unit: Mil. VND)	
Outstanding shares (millions of share)	97.90
Book value of share (VND)	29,732
Debt	6,529,892
Preferred stock	0
Financial investments	38,353
- *Short-term*	*0*
- *Long-term*	*38,353*
Value of Operations (V_{op})	**9,402,261**

Step 2: Weighted average cost of capital (WACC)

$$WACC = R_d(1 - T)W_d + R_sW_s$$

Where: R_s = cost of equity

R_d = cost of debt

W_s = weight of equity

W_d = weight of debt

T = corporate income tax rate

Using CAPM model to calculate R_S

$$R_s = R_f + (R_M - R_f) \times \beta = R_f + RP_M \times \beta$$

Where, R_f: The interest rate of treasury bonds that has maturity in 2015 = 9.36%

R_M: Average rate of return VN-Index in a period of 2001-2014 = 17.23%

RP_M : Risk premium = $R_M - R_f$ = 7.87%

β:the volatility of firm's stock correlated with market= 1.3

$$\Rightarrow R_s = R_f + RP_M \times \beta = 9.36\% + 7.87\% \times 1.3 = 19.59\%$$

Table-3. Weighted Average Cost of Capital (WACC) in 2015

Weighted Average Cost of Capital (WACC) in 2015	
Debt (D)	6,529,892
Owners' equity (S)	2,910,722
Total liabilities and owners' equity	9,440,614
W_d	69.168%
W_s	30.832%
$R_s = R_f + (RP_M) \times \beta$	19.59%
R_d	9.50%
T	22%
WACC = W_d*R_d*(1-T) + W_s*R_s	**11.17%**

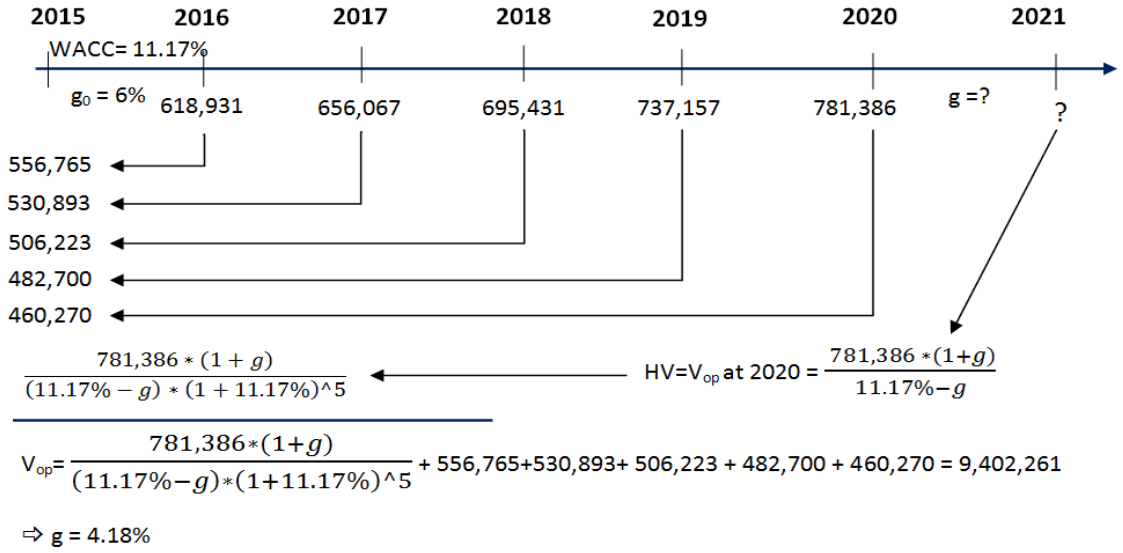
***Step 3*: Current free cash flow (FCF_0) and growth rate (g)**

FCF 2015 = NOPAT – Net investment in fixed assets – Net operating working capital

Table-4. Free Cash Flow (FCF) in 2015

Free Cash Flow (FCF) in 2015 (Unit: Mil. VND)	
Net Operating Profit After Tax (NOPAT)	1,045,935
Net investment in fixed assets = Fixed assets in 2015 – Fixed assets in 2014	380,349
+ Fixed assets in 2015	*4,034,359*
+ Fixed assets in 2014	*3,654,010*
Net operating working capital (NOWC) = NOWC in 2015 - NOWC in 2014	81,689
+ NOWC in 2015	*-385,739*
+ NOWC in 2014	*-467,428*
FCF 2015	**583,897**

Find the value of operations by discounting the free cash flows at the weighted average cost of capital (WACC = 11.17%). By setting 2015 is the base year, $FCF_0 = FCF_{2015}$ = 583,897. Assume that FCF has growth rate of 6% in initial 5-year period. Then, FCF grows at a constant rate of g after year 2020. From the formula (9), the growth rate of g is estimated with annual growth rate of 4.18% after the year 2020.



Step 4: Stream of free cash flows (FCF)

From the base year 2015, free cash flow (FCF) forecasts to grow at 6% each year for the initial 5-year period. Then, free cash flow will grow at 4.18% annually. Table 5 presents the percentage of completion method to determine free cash flow during 2016-2020. In reality, the growth rate (g) and free cash flows (FCF) are estimated upon capital budgeting and financing planning.

Table-5. The HSG's free cash flows (Unit: Mil. VND)

ITEMS	2015	2016	2017	2018	2019	2020
Net revenues from sale of goods and rendering of services	**17,446,872**	**18,493,684**	**19,603,305**	**20,779,504**	**22,026,274**	**23,347,850**
Costs of goods sold and services rendered	(14,869,355)	(15,761,516)	(16,707,207)	(17,709,640)	(18,772,218)	(19,898,551)
Gross profit from sale of goods and rendering of services	**2,577,517**	**2,732,168**	**2,896,098**	**3,069,864**	**3,254,056**	**3,449,299**
Selling expenses	(864,211)	(916,064)	(971,027)	(1,029,289)	(1,091,046)	(1,156,509)
General and administrative expenses	(511,798)	(542,506)	(575,056)	(609,560)	(646,133)	(684,901)
Operating profit	**1,201,508**	**1,273,598**	**1,350,014**	**1,431,015**	**1,516,876**	**1,607,889**
Other income	64,879	68,772	72,898	77,272	81,908	86,823
Other expenses	(41,011)	(43,472)	(46,080)	(48,845)	(51,775)	(54,882)
Other profit	23,868	25,300	26,818	28,427	30,133	31,941
Profit before tax	**1,225,376**	**1,298,899**	**1,376,832**	**1,459,442**	**1,547,009**	**1,639,830**
Current corporate income tax expense	(207,704)	(220,166)	(233,376)	(247,379)	(262,222)	(277,955)
Deferred income tax benefit	28,263	29,959	31,756	33,662	35,681	37,822
Net operating profit after tax (NOPAT)	**1,045,935**	**1,108,691**	**1,175,213**	**1,245,725**	**1,320,469**	**1,399,697**
Net investment in fixed assets	380,349	403,170	427,360	453,002	480,182	508,993
Net operating working capital	81,689	86,590	91,786	97,293	103,130	109,318
FCF	**583,897**	**618,931**	**656,067**	**695,431**	**737,157**	**781,386**

4. STRATEGIC FINANCIAL DECISIONS

The strategic financial decisions include investment appraisal and capital structure. While investment in real assets going operations generates free cash flows (FCF) and growth rate (g), changes in capital structure affect

weighted average cost of capital (WACC) and free cash flows (FCF). These strategic financial decisions have influence on the corporate value.

4.1. Investment Decisions

The financial managers need a tool to analyze effect of investment project to the firm value; it requires to understand cash flows and risks related to both the project and the firm. Let's consider a proposed investment project with some assumptions.

- The project has the same risk as the firm.
- The project has the same capital structure and cost of capital as the firm.

It proposes that Hoa Sen Group (HSG) is considering in installing additional equipment to upgrade production system to save fuel and reduce oil loss. The new production equipment will generate revenue of 65,000 Mil. VND with the operating cost of 52,000 Mil. VND in first year and revenue growth rate is 20%. In order to use the new production system, the project needs 12% of revenue for net operating working capital. Corporate tax rate is 22%. The required rate of return of the project is the same as WACC of HSG. The project employs straight-line depreciation method for 5 year life cycle. Information on the new equipment is given in Table 6.

$$Depreciation\ per\ year = \frac{20{,}000 + 10{,}000 + 10{,}000}{5} = 8{,}000\ Mil.VND$$

Table-6. HSG's project information (Unit: Mil. VND)

Purchasing cost of equipment	**20,000**
Shipping cost	10,000
Installing cost	10,000
Usage years	5
Salvage price	0
Corporate tax rate	22%
WACC	11.17%
Revenue in year 1	65,000
Operating cost in year 1	52,000
Revenue growth rate	20%
%NOWC/Revenue	12%
Depreciation per year	8,000

Net present value (NPV) is determined by discounting project cash flow (CF) with required rate of return (R_q = 11.17%)

$$NPV = \sum_{i=1}^{n} \frac{CF_i}{(1+R_q)^i} - C_0 = \sum_{i=1}^{5} \frac{CF_i}{(1+11.17\%)^i} - 47{,}800 = 15{,}342.32 > 0$$

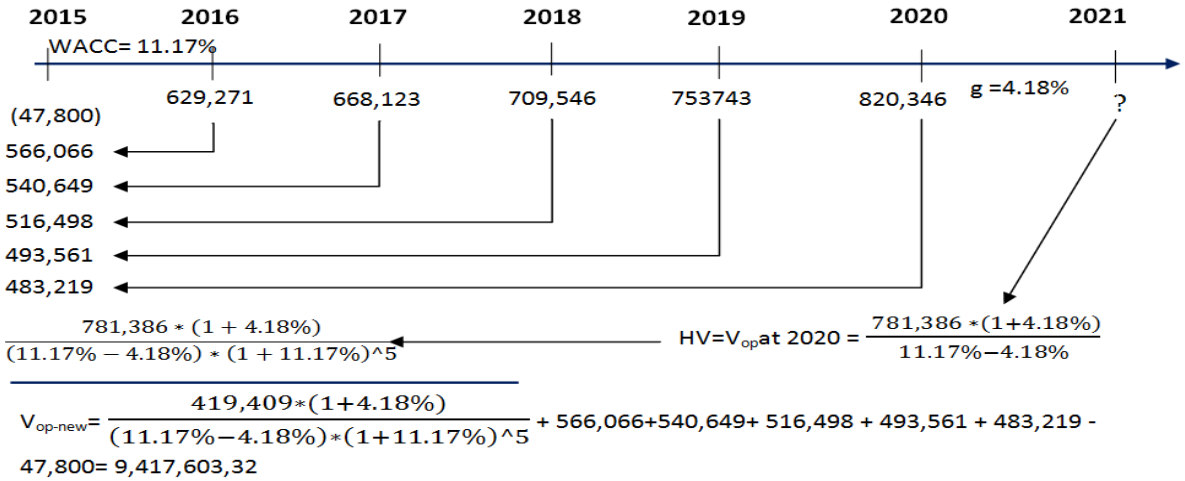
$$NPV = \sum_{i=1}^{n} \frac{CF_i}{(1+IRR)^i} - C_0 = 0 \Rightarrow \sum_{i=1}^{5} \frac{CF_i}{(1+IRR)^i} - C_0 = 0 \Rightarrow IRR = 20.77\%$$

Table-7. HSG Project's cash flows (Unit: Mil. VND)

Items	2015	2016	2017	2018	2019	2020
Initial CF	(40,000)					
Investment	(40,000)					
Revenue		65,000	78,000	93,600	112,320	134,784
Operating expenses		52,000	62,400	74,880	89,856	107,827
Gross profit		13,000	15,600	18,720	22,464	26,957
Depreciation		8,000	8,000	8,000	8,000	8,000
EBT		5,000	7,600	10,720	14,464	18,957
Income tax expense		1,100	1,672	2,358	3,182	4,170
EAT		3,900	5,928	8,362	11,282	14,786
Depreciation		8,000	8,000	8,000	8,000	8,000
Operating CF		11,900	13,928	16,362	19,282	22,786
NOWC		7,800	9,360	11,232	13,478	16,174
CF from NOWC	(7,800)	(1,560)	(1,872)	(2,246)	(2,696)	13,478
Net CF	(47,800)	10,340	12,056	14,115	16,586	38,960

Since NPV is positive (NPV=15,342.32) and IRR = 20.77% > R_q, the project is accepted under both NPV and IRR methods. The following diagram shows the impact of the project on HSG's free cash flows. As a result, the new value of operations (V_{op-new}) is sum up the value of operations (V_{op}) and net present value of the project (NPV).

$$V_{op-new} = V_{op} + NPV = 9{,}402{,}261 + 15{,}342.32 = 9{,}417{,}603.32$$



4.2. Capital Structure

For the capital financing decision, the managers need to tool to analyze optimal capital structure to maximize the firm value. Let's consider proposed changes in capital structure with some assumptions.

- Changes in capital structure do not affect firm's free cash flows.
- There is no transaction costs associated with changes in capital structure.

HSG has the current capital structure of 69.17% debt and 30.83% equity. HSG would find out an optimal capital structure that minimize WACC and maximize the firm value. When debt ratio increases in capital structure, the possibility of bankruptcy also increases. Therefore, cost of debt will go up to compensate with this bankruptcy cost as showed in Table 8.

By using Hamada's equation, beta (β_L) and cost of equity (R_s) are estimated as follows.

$$\beta_L = \beta_U[1 + (1 - T) \times (D/S)]$$

Where, β_U = the beta of a firm without debt leverage

β_L = the beta of a firm with debt leverage D/S

T = corporate income tax rate

For the current capital structure, D = 69.17% and S = 30.83%, T = 22%, β_L = 1.3.

$$\beta_U = \frac{\beta_L}{1 + (1 - T) \times D/S} = \frac{1.3}{1 + (1 - 22\%) \times 69.17\%/30.83\%} = 0.473$$

Table-8. Capital structure and cost of capital

W_d	D/S	β_L	R_d	R_s	WACC	V_{op} (Mil. VND)
0%	0.00	0.473	0.00%	13.08%	13.08%	7,361,877
10%	0.11	0.514	5.50%	13.40%	12.49%	7,889,057
20%	0.25	0.565	5.80%	13.81%	11.95%	8,445,094
30%	0.43	0.631	6.20%	14.32%	11.48%	8,996,470
40%	0.67	0.719	6.70%	15.02%	11.10%	9,492,850
50%	1.00	0.842	7.50%	15.98%	10.92%	9,753,403
60%	1.50	1.026	8.50%	17.43%	10.95%	9,702,335
69.17%	2.24	1.300	9.50%	19.59%	11.17%	9,402,261
70%	2.33	1.333	9.60%	19.85%	11.20%	9,359,583
80%	4.00	1.948	11.00%	24.69%	11.80%	8,610,582
90%	9.00	3.791	12.80%	39.20%	12.91%	7,511,169

Table 8 shows β_L, R_s, WACC, and V_{op} corresponding with different debt ratios. The weighted average cost of capital (WACC) is minimized and the value of operations (V_{op}) is maximized at the debt ratio of 50% in capital structure.

Total corporate value (V_{Firm}) is the sum of value of operations (V_{op}) and financial investments ($V_{non\text{-}op}$).

$$\text{Total corporate value } (V_{Firm}) = V_{OP} + \text{Financial Investments}$$

The value of debt (D) and the value of equity (S) are calculated at the current capital structure of 69.17% debt and 30.83% equity as follows:

$$D = W_d \times V_{Firm} = 69.17\% \times 9{,}440{,}614 = 6{,}529{,}892$$
$$S = V_{Firm} - D = 9{,}440{,}614 - 6{,}529{,}892 = 2{,}910{,}722$$

Then, stock price is determined for W_d= 69.17% as follows:

$$P = \frac{[S + (D - D_0)]}{n_0} = \frac{[2{,}910{,}722 + (6{,}529{,}892 - 6{,}529{,}892)]}{97.9} = 29{,}732 \text{ VND}$$

Repeating these steps for the others of W_d and the results on changes in capital structure are presented in the following tables.

Table-9. Capital structure and stock price (Unit: Mil. VND)

W_d	Firm value, V_{Firm} (Mil. VND)	Debt Value, D (Mil. VND)	Stock Value, S (Mil. VND)	Stock Price, P (VND)	Shares repurchased (Mil. Share)	Shares remaining (Mil. Share)
0%	7,400,230	-	7,400,230	8,890	(734.52)	832.42
0%	7,927,410	792,741	7,134,669	14,275	(401.90)	499.80
20%	8,483,447	1,696,689	6,786,758	19,955	(242.21)	340.11
30%	9,034,823	2,710,447	6,324,376	25,587	(149.28)	247.18
40%	9,531,203	3,812,481	5,718,722	30,657	(88.64)	186.54
50%	9,791,756	4,895,878	4,895,878	33,318	(49.04)	146.94
60%	9,740,688	5,844,413	3,896,275	32,797	(20.90)	118.80
69.17%	9,440,614	6,529,892	2,910,722	29,732	-	97.90
70%	9,397,936	6,578,555	2,819,381	29,296	1.66	96.24
80%	8,648,935	6,919,148	1,729,787	21,645	17.98	79.92
90%	7,549,522	6,794,570	754,952	10,415	25.41	72.5

In order to change to the optimal capital structure (50% of debt and 50% of equity) as showed in Table 9, number of purchasing shares and number of remaining shares are determined as follows:

$$\text{Number of purchasing shares} = \frac{(D - D_0)}{P} = \frac{(4{,}895{,}878 - 6{,}529{,}892)}{33{,}318} = (49.04)$$

$$\text{Number of remaining shares} = \frac{S}{P} = \frac{4{,}895{,}878}{33{,}318} = 146.94$$

Table 9 shows the relationship between capital structure and firm value. At the optimal capital structure, the WACC is minimum, the firm value and stock price are maximum. But the capital structure at 60% debt and 40% equity is close to the optimal values. Therefore, the HSG may change debt ratio in range of 50% to 60% in capital structure.

5. CONCLUSIONS

The paper develops a framework for the application of the corporate valuation model in strategic financial decisions including capital budgeting and capital financing. Capital budgeting and financing planning not only makes a long run financial plan between investment needs and financing funds, but also considers proper growth rate and optimal capital structure that maximize the firm value. The framework approaches discounted cash flow method and introduces four main steps for corporate valuation modeling. Then, the corporate valuation model is used to analyze strategic decisions on investment appraisals and capital structure. The analysist performs a useful exercise by identifying the firm's value drivers as well as examining its growth and risk.

The limitations of the DCF method include its large dependency on WACC and continuing value assumptions, even small changes in these values have a considerable impact on the firm value. In addition, this paper assumes perfect market information; in which stockholder value reflect through book value of equity in financial reports. In fact, stockholder value (stock price in the market) may be higher or lower than its book value of equity. Thus, the further researches should conduct market value instead of book value of equity. It is also advised to use more than one valuation method, such as relative valuation method because there is a great deal of uncertainty in relation to value estimation as it involves predicting cash flows, WACC, and growth rate of the firm. The paper provides a clear understanding on corporate valuation that creates many potential opportunities for researches on corporate valuation and value based management in reality.

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Appendixes

1. HSG's Balance Sheet (Unit: Mil. VND)

BALANCE SHEET	September, 30th		
ASSETS	**2015**	**2014**	**2013**
A. CURRENT ASSETS	**5,169,207**	**6,399,612**	**4,214,833**
I. Cash and cash equivalents	**276,693**	**155,963**	**177,313**
1. Cash	276,553	139,263	177,313
2. Cash equivalents	140	16,700	-
II. Current account receivables	**755,197**	**823,122**	**748,159**
1. Trade receivables	463,585	639,992	548,363
2. Advances to suppliers	167,829	79,368	187,575
3. Other receivables	128,763	106,945	15,225
4. Provision for doubtful	(4,980)	(3,183)	(3,004)
III. Inventories	**3,543,825**	**4,746,912**	**3,019,573**
1. Inventories	3,556,894	4,747,945	3,020,464
2. Provision for obsolete inventories	(13,0692)	(1,033)	(891)
IV. Other current assets	**593,492**	**673,615**	**269,788**
1. Short-term prepaid expenses	70,777	63,447	79,882
2. Value-added tax deductible	505,939	605,809	169,584
3. Tax and other receivables from the State	-	107	4
4. Other current assets	16,776	4,252	20,318
B. NON-CURRENT ASSETS	**4,271,407**	**3,806,028**	**2,927,338**
I. Long-term receivable	**25,000**	-	-
1. Other long-term receivable	25,000	-	-
II. Fixed assets	**4,034,359**	**3,654,010**	**2,789,680**
1. Tangible fixed assets	3,403,034	3,189,284	2,235,720
Cost	5,246,749	4,589,466	3,304,810
Accumulated depreciation	(1,843,715)	(1,400,182)	(1,069,090)
2. Finance lease assets	225,652	165,182	122,417
Cost	283,931	197,948	141,198
Accumulated depreciation	(58,279)	(32,766)	(18,781)
3. Intangible assets	294,659	233,117	234,454
Cost	320,751	255,736	253,522
Accumulated amortisation	(26,092)	(22,619)	(19,068)
4. Construction in progress	111,014	66,427	197,089
III. Long-term investments	**38,353**	**45,924**	**59,456**
1. Investments in an associate	33,986	37,284	44,456
2. Other long-term investment	4,367	8,640	15,000
IV. Other long-term assets	**173,695**	**106,094**	**78,202**
1. Long-term prepaid expenses	110,639	70,471	57,767
2. Deferred tax assets	59,470	31,208	16,019
3. Other long-term assets	3,586	4,415	4,416
TOTAL ASSETS	**9,440,614**	**10,205,640**	**7,142,171**
RESOURCES			
A. LIABILITIES	**6,529,892**	**7,826,443**	**4,931,735**
I. Current liabilities	**5,554,946**	**6,867,040**	**4,338,668**
1. Short-term loans and debts	4,521,419	4,756,011	2,814
2. Trade payables	626,270	1,885,979	1,317,685
3. Advances from customers	134,062	61,287	73,221
4. Statutory obligations	71,264	47,194	51,640
5. Payable to employees	40,673	41,256	38,337
6. Accrued expenses	104,041	42,578	22,393
7. Other payables	48,854	23,487	16,514
8. Bonus and welfare fund	8,363	9,248	4,464
II. Non-current liabilities	**974,946**	**959,403**	**593,067**
1. Long-term loans and debts	969,894	953,821	588,027
2. Provision for severance allowance	5,052	5,582	5,040
B. OWNERS' EQUITY	**2,910,722**	**2,379,197**	**2,210,436**
I. Capital	**2,910,722**	**2,379,197**	**2,210,436**
1. Issued share capital	1,007,908	1,007,908	1,007,908
2. Share premium	487,291	451,543	451,543
3. Treasury shares	(52,114)	(81,039)	(81,036)
4. Financial reserve fund	8,525	8,525	8,526
5. Other funds belonging to owners' equity	6,605	13,278	2,008
6. Undistributed earnings	1,452,507	978,982	821,487
TOTAL LIABILITIES AND OWNERS' EQUITY	**9,440,614**	**10,205,640**	**7,142,171**

2. HSG's Income Statement (Unit: Mil. VND)

ITEMS	2015	2014	2013
1. Revenues from sale of goods and rendering of services	**17,469,895**	**15,005,075**	**11,772,644**
2. Less deductions	(23,023)	(14,714)	(12,745)
3. Net revenues from sale of goods and rendering of services	**17,446,872**	**14,990,361**	**11,759,899**
4. Costs of goods sold and services rendered	**(14,869,355)**	**(13,240,125)**	**(10,052,386)**
5. Gross profit from sale of goods and rendering of services	**2,577,517**	**1,750,236**	**1,707,513**
6. Finance income	31,595	30,491	39,687
7. Finance expenses	(424,656)	(256,363)	(246,585)
In which: Interest expenses	*(224,013)*	*(183,559)*	*(167,862)*
8. Selling expenses	(864,211)	(672,775)	(491,3467)
9. General and administrative expenses	(511,798)	(393,176)	(350,540)
10. Operating profit	**808,447**	**458,413**	**658,728**
11. Other income	64,879	96,439	37,178
12. Other expenses	(41,011)	(31,463)	(16,909)
13. Other profit	**23,868**	**64,976**	**20,269**
14. Profit before tax	**832,315**	**523,389**	**678,997**
15. Current corporate income tax expense	**(207,704)**	**(128,235)**	**(106,637)**
16. Deferred income tax benefit	**28,263**	**15,188**	**8,479**
17. Net profit after tax	**652,874**	**410,342**	**580,839**
18. Weighted average number of ordinary shares in issue (shares)	**125,298,205**	**125,207,027**	**97,766,865**
19. Earnings per share ***(VND/share)***			
- ***Basic earnings per share***	*5,211*	*3,277*	*5,941*
- ***Diluted earnings per share***	*5,211*	*3,277*	*5,941*