การวิเคราะห์การรับรู้ของตลาดต่อมูลค่าที่แท้จริงของบริษัทจดทะเบียนในประเทศไทย

A CROSS-SECTIONAL ANALYSIS OF MARKET PERCEPTIONS OF COMPANIES' INTRINSIC VALUE: EVIDENCE FROM THAILAND

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บทคัดย่อ

งานวิจัยฉบับนี้ มีวัตถุประสงค์เพื่อศึกษาว่าตลาดสามารถวิเคราะห์มูลค่าที่แท้จริงของบริษัทได้อย่างถูกต้องใกล้เคียงอย่างไร โดยใช้การเปรียบเทียบระหว่างมูลค่าทางตลาดของบริษัท และมูลค่าที่แท้จริงของบริษัทที่คำนวณจากวิธีคิดลดกระแสเงินสด งานวิจัยนี้ใช้กลุ่มตัวอย่างที่เป็นบริษัทหลักทรัพย์จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ในช่วงระยะเวลา ค.ศ. 1998-2012 โดยพบว่าตลาดประเมินมูลค่าของบริษัท สูงกว่ามูลค่าที่แท้จริง โดย ขนาดของบริษัท และประเภทอุตสาหกรรม เป็นปัจจัยสำคัญในการกำหนดมูลค่าของบริษัท ผลของงานวิจัยนี้ยังชี้ให้เห็นว่า วิธีคิดลดกระแสเงินสด จะใช้ได้ผลดี และสะท้อนให้เห็นมูลค่าที่แท้จริงของกิจการเมื่อมีการใช้กระแสเงินสดของกิจการในระยะยาวเป็นจำนวน 10 ปี ตามด้วย 12 ปี

คำสำคัญ : วิธีคิดลดกระแสเงินสด ประเภทอุตสาหกรรม ขนาดของบริษัท ประเทศไทย การกำหนดมูลค่า

ABSTRACT

The objective of this study is to examine how accurately the market values a company by comparing its market value and the company's intrinsic value as calculated using the discounted capital cash flow model. Using companies listed on the Stock Exchange of Thailand over the period 1998-2012, the results from a regression analysis show that the market has overestimated the intrinsic value of companies and that it views company size and industry to be important factors in company valuation. Moreover, the results from this study reveal that the most favorable period length to use when calculating a company's intrinsic value is 10 years, followed by 12 years. This result implies that the discounted cash flow technique is more effective for company valuations in the long term.

KEYWORDS : Discounted cash flow, Industry, Size, Thailand, Valuation

INTRODUCTION

Company valuation is one of many techniques widely employed by financial professionals. It is a set of processes used to determine the value of a company. Valuation allows the company's stakeholders, such as capital holders, creditors, analysts, investors and governments, to be knowledgeable regarding the company's value. Indeed, company valuations are particularly beneficial in that they allow stakeholders to make precise decisions to achieve their investment targets. Once the investors know the value of a company, they can estimate the expected achievable investment returns based on their available resources.

Recently, various company valuation methods have been adopted by researchers and other professionals. One of the best known methods in modern finance, used for over 80 years, is the discounted cash flow method. The fundamental concept of this method is that the value of any asset is calculated by discounting its expected future cash flows back to the present value. In addition to assets, the discounted cash flow method can be applied to estimate the value of companies, initial public offerings, other financial securities and even more complex situations (Luehrman, 1998).

Hence, this study attempts to determine if the intrinsic value computed using the discounted cash flow method is a good representation of the company's actual value as determined by the market. Moreover, this study attempts to find whether the size of a company affects market valuation because many researchers suggest that a size effect exists (Banz, 1981; Fama and French, 1998; Pereiro, 2006; Platt et al., 2009, 2010). Finally, this study examines the industry effect to understand whether different industries have a different impact on company valuations.

The results from this study are beneficial to both academics and professionals. As an academic contribution, this study provides an empirical examination of the performance of the discounted cash flow methodology taught in classrooms. Further, when considering financial valuation, there are no definite methods guiding the number of years to use in the model. The results from this study, therefore, can help academics to fine-tune the balance between the number of years used in the calculations and the efficiency of their forecasting. For professionals, discounting with the fewest years possible is in their best interests due to time and information constraints. However, the results from this study indicate that this strategy must be balanced with a tradeoff in accuracy.

LITERATURE REVIEW

Many valuation models are employed by both academics and professionals to value companies. Williams (1938) introduced the discounted dividend model to estimate the value of companies. He applied the expected dividends and then discounted them back to their present value because he believed that dividends, recognized as a company's cash flow to shareholders, are more reliable than earnings. Miller and Modigliani (1961) suggested using the discounted cash flow method, which has since become a fundamental concept for valuing a company. According to the discounted cash flow method, the company's value is equal to the discounted sum of the cash flow generated from the operating profit after deducting capital investment plus the terminal value, which is the estimated value for the rest of the forecasting period. The cost of capital was suggested as the appropriate discount rate to apply to this model.

An alternative to the traditional discounted cash flow technique is to use free cash flow, as suggested by Stern (1974). Free cash flow is defined as net operating profit after taxes, deducting capital investments. It represents the company's leftover cash, which the company can use to seek opportunities, e.g., business expansion, new product development, cash dividend payment and settlement of debts, to increase its future value. Copeland et al. (2000) also supported the use of free cash flow to value a company. They argued that free cash flow expresses the company's value better than the dividend cash flow because the former represents the amount of cash available to capital shareholders after all capital investments are deducted. Hence currently, the free cash flow model is extensively used.

In addition to the cash flow model, Ohlson (1995) proposed using the discounted abnormal earnings model to value a company. Using U.S. listed companies during 1989-1993, evidence showed that this model provided superior results in terms of a more accurate company value than other cash flow models (Francis et al., 2000). Moreover, Fernandez (2007) provided a summary of company valuation methods and theories with regard to the discounted cash flow model, identifying ten methods: free cash flow, equity cash flow, capital cash flow, adjusted present value, risk-adjusted free cash flow, risk-adjusted equity cash flow, risk-free-adjusted free cash flow, risk-free-adjusted equity cash flow, economic profit and economic value added. Although they differ in how they define and compute cash flow, these valuation models contribute undifferentiated intrinsic value. In addition, Oded and Michel (2007) noted that as long as the company rebalances its debt regularly, the four discounted valuation methods (adjusted present value, capital cash flows, cash flows to equity, and free cash flows to the company) will provide identical results.

Because the discounted cash flow method is a principle practice for company valuation, many researchers have attempted to investigate whether it can provide reasonable valuations. For example, Kaplan and Ruback (1995) examined whether the discounted cash flow model is able to provide trustworthy estimates of a company's value. Using a sample of 51 U.S. companies with highly leveraged transactions during 1983-1989, they revealed that on average, company values as estimated using the discounted cash flow model are within 10% of the market value. Moreover, they found that cash flow valuation techniques perform better than comparables or multiples valuation techniques. Next, Pereiro (2006) conducted a survey questioning companies, investment advisors and private equity funds about the practices they use to value companies. He found that in Argentina, as an example of an emerging market among others, the discounted cash flow model is a widely accepted valuation tool among professionals.

Furthermore, Ghodrati and Hashemi (2014) studied whether free cash flows can effectively explain the actual value of company. Using a sample of 56 companies listed in the Tehran Stock Exchange, they explored the idea that the predicted company value as estimated using free cash flow exceeds its market value. Lastly, Platt et al. (2010) attempted to investigate exactly how the company value determined by the market related to the estimated company value as calculated using the discounted actual future cash flow model. Using U.S. listed firms during 1988-2000, they discovered that the actual market value of a company and its estimated value based on discounted actual cash flows are significantly related; however, the values are not identical because the market valuation is lower than the discounted actual cash flow valuation.

In conclusion, many varied techniques exist that academics and professionals can employ. There is no single technique that always provides the correct value of company, as each technique requires different assumptions and inputs. Nonetheless, the discounted cash flow method continues to be one of the most important valuation methods known in academia and widely used in industry. This study attempts to examine the relationship between the actual intrinsic value and the market value of a company using the discounted cash flow model.

METHODOLOGY

The sample in this study consists of companies listed on the Stock Exchange of Thailand during the period of 1998-2012. All year-end data were obtained mainly through Reuters. Table 1 below presents a list of data applied in this study.

Regression analysis of the market perception of a company's intrinsic value

As the primary purpose of this study is to determine how accurately financial analysts and investors value a company, a company's estimated intrinsic value (ECV) using the discounted cash flow model and a company's actual value as influenced by the market (MCV) are determined. The following regression model (1) was employed:

$$MCV_{it} = \alpha_{it} + \beta_1 ECV_{it} + \varepsilon_{it} \quad (1)$$

where MCV is the actual value of the company based on market perception, ECV represents the intrinsic value of the company calculated using the discounted cash flow model.

According to regression model (1) above, if β_1 equals 1, the market value of the company equals the intrinsic value. In other words, the market is able to perfectly forecast the company's intrinsic value. If β_1 exceeds 1, the market is likely to be overestimating the future performance of the company. However, if β_1 is positive and less than 1, the market is likely to be underestimating the future performance of the company.

(a) Company value based on market perception (MCV)

For each company in the sample, the actual value of the company determined by the market (MCV) at the end of each year is computed as follows:

MCV = MarketCap + Total Liabilities - Cash

Table 1: List of data

Fundamental data			Market data
Cash	Notes payable	Net sales	Stock price
Short-term investments	Long-term debt	Interest revenue	Company beta
Current assets	Total liabilities	Depreciation	Nominal GDP growth
Total assets	Deferred taxes	Interest expense	10-year Treasury yield
Accounts payable	Capital expenditures	Net income	
Current liabilities	No. of shares outstanding		

where MarketCap is the market capitalization.

(b) Estimated company intrinsic value (ECV)

To obtain the ECV, the following discounted cash flow model was applied.

$$ECV = \Sigma_{t=1}^{T}(CCF_{i,t}) /(1+k_i)^t + TV_i /(1+k_i)^T$$

where ECV is the company's estimated intrinsic value calculated based on the actual realized capital cash flow (CCF) data, k is the unlevered cost of capital, TV is the terminal value, t is the year, T is the final year, and i is the company. The explanations for all three variables in the model are as follows.

(i) Capital cash flow (CCF)

This study applied capital cash flows as suggested by Ruback (2002) as follows:

Capital cash flow (CCF) = Net income + Depreciation expense - Capital expenditures - Increase in working capital + Increase in deferred taxes + Net interest

(ii) Unlevered cost of capital (k).

The unlevered cost of capital (k) is computed as follows:

$$k = r_f + ERP * \beta_A$$

where r_f presents the Thai risk-free interest rate using the 10-year bond yield data, obtained from the Thai Bond Market Association (ThaiBMA), as the proxy. ERP presents the equity risk premium, which is proxied in this study by Thailand's geometric average or the actual equity risk premium of 12.8% annually over the 12 years of data. Last, ?_A represents the asset beta, which was computed using the formula below.

$$\beta_A = \left(\frac{1}{1+\frac{D}{E}}\right) * \beta_S$$

where D denotes the company's total debts, consisting of short-term and long-term debts, and E presents the market capitalization, computed from multiplying the year-end stock price by the number of shares outstanding. β_S is the actual stock beta calculated from a 60-month return.

(iii) Terminal value (TV)

The study used the Gordon growth perpetuity model to calculate the terminal value (TV), consistent with Platt et al. (2010)

$$TV = \frac{CCF_{T+1}}{k - g_{TV}}$$

where g_{TV} is the terminal growth rate using the country's gross domestic product growth rate as a proxy. This is based on the assumption that the company's annual future growth rate would be in accordance with that of the country in the long-term (Platt et al., 2009). Hence, the 3% geometric average of Thailand's GDP growth from year 1998-2012 was applied.

The formulation of the "n-year" ECV model

To implement the regression analysis, an "n-year" ECV model needs to be formulated. In general, the annual cash flows for "n" consecutive years are used to calculate the intrinsic value of a company (ECV) in the "n-year" ECV model. Based on the capital cash flow data collected from years 1998 to 2012, it is found that companies have capital cash flows ranging from a low of 3 consecutive years to a high of 16 years. As a result, this study developed 14 different models, ranging from a 3-year to a 16-year ECV model. Each "n-year" ECV model was then studied individually. For each "n-year" ECV model, we calculated the ECV of each company on a rolling basis, which is different from the strategy used by Platt et al. (2010). Table 2 presents the final set of data used in this study.

Table 2 : Number of sample companies

N-Year Model	No. of Companies	No. of Observations
3	582	3,381
4	555	3,060
5	538	2,759
6	511	2,442
7	478	2,146
8	444	1,843
9	422	1,577
10	379	1,277
11	331	997
12	297	787
13	256	575
14	220	394
15	158	239
16	120	120

Regression analysis with the size effect

Platt et al. (2009, 2010) suggested that the size of a firm significantly impacts how the market values the company. Banz (1981) also showed evidence that the size effect was found in the U.S. market. Moreover, Fama and French (1998) revealed that the size effect existed in many emerging markets. However, it was found in the case of Argentina's emerging market that the size of the firm is not the primary factor for decision making (Pereiro, 2006).

Hence, this study investigates whether size is an important factor influencing market valuation. The following regression model (2) was then examined:

$$In\,(MCV_{it}) = \alpha_{it} + \delta_1 In\,(ECV_{it}) + \delta_2 In\,(SIZE_{it}) + \varepsilon_{it} \quad (2)$$

In terms of company size, if δ_2 is positive, a large firm is favored by the market, meaning that the market is likely to more highly value a large firm than a small one. However, if δ_2 is negative, then the market values small firms more highly.

RESULTS & DISCUSSION

Regression results for the market perception of a company's intrinsic value

The results from Table 3 below show that the coefficients of ECV are positive and statistically significant at the 0.01 level for all models. All of the coefficients of ECV are greater than 1, which indicates that a company's intrinsic value calculated based on the actual capital cash flow data is lower than the market value. This implies that the market tends to overestimate actual future performance. Moreover, the analysis finds that the coefficients of ECV are likely to decrease as the number of periods increase, meaning that higher coefficient values are present in the shorter n-year models. This result suggests that the terminal value could be the culprit for inflating the coefficient values. Although we used the same terminal growth rate for all models, 3-year to 16-year, the unlevered cost of capital can be different among companies. As a result, the terminal value should be calculated with caution.

In terms of the adjusted R-squared, results show that using a 10-year model to calculate company value yields the most favorable results as it best explains the variation in market valuation.

However, the findings from this study are inconsistent with those from Platt et al. (2010), who conducted a similar study in the U.S., a developed country. The opposing outcomes can largely be explained by the characteristics of emerging capital markets, which normally include higher growth potential. Another reason for this contradiction is that this

Table 3: Regression results for the market perception of a company's intrinsic value

N-Year Model	Intercept	ECV	Adjusted R^2	F-Stat
3	292.663*	4.226*	0.383	1673.344*
	(3.404)	(40.906)		
4	187.614***	4.309*	0.378	1445.925*
	(1.960)	(38.025)		
5	144.562	4.072*	0.399	1380.373*
	(1.489)	(37.153)		
6	92.120	4.029*	0.421	1304.543*
	(0.856)	(36.118)		
7	28.592	3.837*	0.578	2010.850*
	(0.318)	(44.842)		
8	44.511	3.434*	0.574	1696.380*
	(0.479)	(41.187)		
9	111.462	2.863*	0.595	1597.101*
	(1.335)	(39.963)		
10	209.194*	2.243*	0.619	1412.305*
	(2.786)	(37.580)		
11	253.035*	1.910*	0.569	901.163*
	(3.138)	(30.019)		
12	223.638**	2.037*	0.613	880.345*
	(2.462)	(29.670)		
13	247.072**	1.962*	0.525	445.344*
	(2.055)	(21.103)		
14	241.767*	2.108*	0.479	262.188*
	(1.560)	(16.192)		
15	389.201***	1.972*	0.372	107.806*
	(1.725)	(10.382)		
16	508.394	2.047*	0.315	43.783*
	(1.447)	(6.616)		

Note : The number in parentheses is the t-value. *, **, and *** present statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

study applied an equity risk premium (ERP) that was extracted from actual stock market returns.

Regression results for size and industry effects

Table 4 as in the following presents the regression results examining the relationship between the percentage change of the market value and that of the intrinsic value by taking a logarithmic transformation of MCV and ECV. Moreover, this table shows the regression results after adding size and industry effects.

According to Table 4 Panel A, the analysis finds that for all of the "n-year" ECV models, the coefficients of ECV are significantly positive and have values less than 1,

Table 4: Multivariate regression results with size and industry (Partial)

N-Year Model	*Panel A* Without Size	*Panel B* With Size	*Panel C: Industry Classification*									
			Consumer Cyclical	Consumer Noncyclical	Material	Finance	Industrial	Health	Energy	Techno	Utility	Telecom
3 year												
$ln(ECV)$	0.752*	0.178*	0.228*	0.137*	0.164*	0.212*	0.117*	0.065	-0.011	-0.009	0.118**	0.213**
	(61.485)	(15.984)	(9.200)	(5.015)	(4.910)	(8.023)	(3.593)	(1.306)	(-0.209)	(-0.193)	(2.338)	(2.599)
$ln(SIZE)$		0.900*	0.933*	0.944*	0.915*	0.832*	0.904*	1.180*	1.042*	1.087*	0.965*	1.038*
		(68.237)	(27.340)	(25.588)	(23.965)	(25.854)	(25.334)	(17.035)	(17.946)	(17.828)	(12.663)	(8.233)
4 year												
$ln(ECV)$	0.736*	0.150*	0.195*	0.175*	0.085**	0.160*	0.126*	0.058	-0.013	-0.055	0.039	0.100
	(54.772)	(12.828)	(8.584)	(6.336)	(2.313)	(5.411)	(3.377)	(1.232)	(-0.223)	(-0.762)	(0.683)	(1.446)
$ln(SIZE)$		0.942*	0.951*	0.899*	1.048*	0.910*	0.925*	1.188*	1.100*	1.062*	1.003*	1.106*
		(67.368)	(29.650)	(25.788)	(24.269)	(24.119)	(22.817)	(18.023)	(17.582)	(12.169)	(13.207)	(8.866)
5 year												
$ln(ECV)$	0.770*	0.153*	0.200*	0.130*	0.103*	0.159*	0.150*	0.114**	0.057	-0.136	0.094	0.200**
	(52.419)	(11.777)	(7.515)	(4.702)	(2.911)	(4.690)	(3.094)	(2.525)	(0.869)	(-1.612)	(1.060)	(2.590)
$ln(SIZE)$		0.953*	0.962*	0.933*	1.051*	0.929*	0.947*	1.117*	1.060*	1.155*	1.081*	0.962*
		(62.530)	(26.691)	(25.417)	(25.155)	(21.626)	(18.088)	(17.533)	(16.052)	(12.817)	(9.117)	(6.024)
6 year												
$ln(ECV)$	0.718*	0.110*	0.140*	0.127*	0.073**	0.144*	0.080**	0.120**	-0.023	-0.203*	-0.008	0.223*
	(45.885)	(8.266)	(5.440)	(4.459)	(2.086)	(3.451)	(2.554)	(2.315)	(-0.234)	(-2.689)	(-0.041)	(4.367)
$ln(SIZE)$		0.993*	1.019*	0.970*	1.101*	0.934*	0.969*	1.137*	1.088*	1.173*	1.295*	0.943*
		(61.064)	(26.902)	(24.587)	(25.900)	(17.729)	(26.216)	(16.421)	(13.388)	(10.352)	(4.711)	(9.431)
7 year												
$ln(ECV)$	0.740*	0.123*	0.171*	0.103*	0.043	0.175*	0.085**	0.095**	0.0007	0.159	0.185	0.259*
	(44.109)	(8.376)	(5.753)	(3.476)	(1.149)	(3.782)	(2.429)	(2.140)	(0.007)	(1.470)	(1.086)	(3.624)
$ln(SIZE)$		0.987*	0.994*	1.001*	1.138*	0.937*	0.965**	1.107*	1.0612*	1.364*	0.668**	0.877*
		(54.931)	(23.976)	(23.086)	(26.851)	(15.366)	(23.365)	(16.235)	(12.288)	(7.600)	(2.410)	(5.221)

Note: The number in parentheses is the *t*-value. *, **, and *** represent statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. For the 8-year to 16-year models, the results are available upon request.

indicating that if the intrinsic value of the company were to increase by 1%, the market value of this company would also increase but by less than 1%. These results then help support our prior findings that the market overestimates the intrinsic value of the company. As the market has already overpriced the intrinsic value, an increase in the intrinsic value also increases the market price but by a lower percentage. For this regression analysis, our findings are in accordance with Platt et al. (2010).

After adding SIZE to the multivariable regression of MCV on ECV, Table 4 Panel B notes that the coefficient of SIZE is statistically significant ranging from 0.900 to 1.126. A positive coefficient indicates that a larger company is likely to be valued more highly by the market than a smaller one, consistent with the evidence from the developed market found by Platt et al. (2009, 2010). Although company size positively affects the market value, findings indicate that the value of a company as determined by the market is unequally distributed when the company's size is under consideration. Large companies that have survived in the market over the long term tend to receive more recognition from the market.

In the multivariable regression, although the coefficients of the ECV are found to be positive and significant, they are close to zero. These minimal values signal that the company's intrinsic value has less impact on the market value. In other words, when valuing a company, financial analysts and investors perceive that size is a more important factor than the intrinsic value. Hence, they weigh size more heavily than intrinsic value, as generated by the discounted future cash flow, supporting the findings of Platt et al. (2010).

In terms of industry, according to Table 4 Panel C, the results for all industries except telecommunications indicate that company size is an important aspect of company valuation for both short-term and long-term valuation. Most SIZE coefficients have positive values and are greater than 1. These findings reveal that investors place a higher company value for larger firms. Especially for developing countries, investors view large firms as having a competitive advantage over smaller firms. For this reason, investors put more weight on a company's size than on the intrinsic value computed by the discounted cash flow model.

However, for the telecommunication sector in Thailand, it could potentially affect the growth of the country indirectly. In the long-run, major investments in the telecommunications sector can create and support important infrastructure that often represents the backbone of the country. Once all of the infrastructure is rolled out and as the country continues to grow, increasing numbers of people and businesses return to use the company's services, further creating higher future cash flows for telecommunications companies. For these reasons, in this particular sector, financial analysts and investors give more weight to the intrinsic value of the companies more than their size.

CONCLUSION

The discounted cash flow model is a fundamental analysis tool used for company valuation. Hence, the aim of this study was to analyze how precisely the market values a company by contrasting the market value and the intrinsic value as computed using the discounted actual cash flow model. This study reveals that a company has a lower intrinsic value than the market believes.

Besides, this study suggests that the discounted cash flow method is more useful for valuing a company over the long term, as evidence showed that the most

favorable forecasted period is 10 years, followed by 12 years. Although, in practice, investors and financial analysts prefer using as few "n-year" periods as possible in their intrinsic value calculation due to time and information limitations, a longer-term "n-year" period of cash flows presents an alternative practice that should help the investment industry determine the number of years that best fits their circumstances.

In addition, this study reports that market more heavily emphasizes the company's size in which it tends to give a higher valuation to large companies, regardless of the industry. Perhaps these results can be linked to the fact that large companies in a developing market are likely to have had a presence in the market for a long time. These companies and the quality of their products and services are well known to investors and customers alike. As a result, they normally have more access to resources such as financial and market resources, which translates into a potentially higher competitive advantage compared to smaller companies.

REFERENCES

Banz, R. W., 1981, The relationship between return and market value of common stocks. **Journal of Financial Economics** 9, pp. 3-18.

Copeland, T., Koller, T., and Murrin, J., 2000, **Valuation: Measuring and Managing the Value of Companies,** third ed. (Wiley, New York).

Damodaran, A., 2012, **Investment Valuation: Tools and Techniques for Determining the Value of Any Asset,** third ed. (Wiley, New York).

Fama, E. F., and French, K. R., 1998, Value versus growth: the international evidence. **Journal of Finance** 53, pp. 1975-1999.

Fernandez, P., 2007, Valuing companies by cash flow discounting: Ten methods and nine theories. **Journal of Management Science** 1, pp. 80-100.

Francis, J., Olsson, P., and Oswald, D. R., 2000, Comparing the accuracy and explainability of dividend, free cash flow, and abnormal earnings equity value estimates. **Journal of Accounting Research** 38, pp. 45-70.

Ghodrati, H., and Hashemi, A., 2014, A study on relationship among free cash flow, firm value and investors' cautiousness: evidence from Tehran Stock Exchange. **Management Science Letters** 4, pp. 2001-2010.

Kaplan, S. N., and Ruback, R. S., 1995, The valuation of cash flow forecasts: an empirical analysis. **The Journal of Finance** 50, pp. 1059-1093.

Luehrman, T. A., 1998, Investment opportunities as real options: getting started on the numbers. **Harvard Business Review** 76, pp. 51-66.

Miller, M. H., and Modigliani, F., 1961, Dividend policy, growth, and the valuation of shares. **Journal of Business** 34, pp. 411-433.

Oded, J., and Michel, A., 2007, Reconciling DCF valuation methodologies. **Journal of Applied Finance** 17, pp. 21-32.

Ohlson, J. A., 1995, Earnings, book values, and dividends in equity valuation. **Contemporary Accounting Research** 11, pp. 661-687.

Pereiro, L. E., 2006, The practice of investment valuation in emerging markets: evidence from Argentina. **Journal of Multinational Financial Management** 16, pp. 160-183.

Platt, H. D., Demirkan, S., and Platt, M., 2009, Perilous forecasts: implications of reliance on terminal value. **Corporate Finance Review** 14, pp. 23-34.

Platt, H., Demirkan, S., and Platt, M., 2010, Free cash flow, enterprise value, and investor caution. **Journal of Private Equity** 13, pp. 42-50.

Ruback, R. S., 2002, Capital cash flows: A simple approach to valuing risky cash flows. **Financial Management** 31, pp. 85-103.

Stern, J. M., 1974, Earnings per share don't count. **Financial Analysts Journal** 30, pp. 39-43.

Williams, J., 1938, **The Theory of Investment Value**. (Harvard University Press, Boston, Massachusetts).

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