

# Equity Valuation of Honda and Nissan

Buy, Sell or Hold?

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## ABSTRACT

The equity valuation of the automobile manufacturers Honda and Nissan has been carried out herein using six different methods to arrive at a meaningful conclusion for investors looking at their prospective stock prices.

## EXECUTIVE SUMMARY

The objective of this report is to come up with the equity valuations of the two powerhouses of the automotive industry, Nissan and Honda, using the fundamental analysis approach. This is achieved by collecting information about the above companies, preparing common-size statements, calculating various financial ratios, and assessing the financial health of the same for the years 2015-2017.

It was estimated that Nissan and Honda would enjoy revenue growths of approximately 14% and 20% percent for the period 2015 to 2017. A corporate tax rate of 34.62 percent was assumed for the three year period. Also it was assumed that capital structure of the two companies was unchanged over the period. The value per share of Nissan and Honda was 868.16 yen and 5368.27 yen respectively, for 2015. This value increases to 1024.26 yen and 5608.443 yen respectively, in 2016, representing a 17.9% and 4.4% increase over the 2015 value. The value per share continues to increase steadily to a maximum of 1103.12 yen and 5834.56 yen respectively, in 2017. The major problem encountered during this exercise was in determining the future earnings and cash flows when predicting stock prices. The yield on Government of Japan long term bonds was given as 0.4%. The market rate of return was taken as the CAGR of the Nikkei 225 index over the last 10 years and was 6.66%. The beta value was found to be 0.97 for Nissan and 1.23 for Honda. Using these values, the cost of equity using the CAPM model was found to be 6.47% for Nissan, and 8.01% for Honda.

The WACC (Weighted Average Cost of Capital) was used as the discounting rate in calculating the present value of the free cash flow, terminal values and the net present values for the years 2015 to 2017. The results for the same show erratic behaviour in free cash flow numbers for Nissan (negative in all three years) and positive for Honda for the same period. In addition, the net present value increased steadily over the three years, from 2010168.81 yen in 2015 to 2407826.84 yen in 2017 for Nissan, and from 97367217.7 yen in 2015 to 105814321.9 yen in 2017 for Honda. This represents 19.7% increase for Nissan and 8.6% increase for Honda over the three years. The equity value increased from 1819663.36 yen in 2015 to 2312139.52 yen in 2017 for Nissan and from 9721678.77 yen in 2015 to 10566389.19 yen in 2017 for Honda. This represents a 27% increase for Nissan and 8.6% for Honda over the three year period.

**Finally, our recommendations to present shareholders were to keep holding onto Nissan and Honda stocks, given their positive outlook. For prospective shareholders, our recommendation was to buy Honda stocks now, given their strong forecasted growth. For Nissan stocks, it was recommended to wait for a period of one-two years to gain a better entry point into the market.**

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# 1. INTRODUCTION

Business valuation comprises of a set of processes and procedures that seek to quantify an owner's interest in business. Valuation is often used to estimate the amount of money that owners are willing to pay or receive the effect the sale of their businesses. Valuation often consists of two phases [1]:

- 1) Defining the standard of value - Hypothetical conditions under which the business will be valued.
- 2) Defining the premise of value - Relates to the assumptions, such as assuming that the business will continue forever in its current form (going concern), or that the value of the business lies in the proceeds from the sale of all of its assets minus the related debt (sum of the parts or assemblage of business assets).

The standards of value are often assessed using the following methods:

- Fair Market Value - A value of a business enterprise determined between a willing buyer and a willing seller both in full knowledge of all the relevant facts and neither compelled to conclude a transaction.
- Investment Value - A value the company has to a particular investor. Note that the effect of synergy is included in valuation under the investment standard of value.
- Intrinsic Value - The measure of business value that reflects the investor's in-depth understanding of the company's economic potential.

The premise of value can be assessed using the following methods:

- Going Concern - Value in continued use as an ongoing operating business enterprise.
- Assemblage of Assets - Value of assets in place but not used to conduct business operations.
- Orderly Disposition - Value of business assets in exchange, where the assets are to be disposed of individually and not used for business operations.
- Liquidation - Value in exchange when business assets are to be disposed of in a forced liquidation.

Business valuation can thus vary considerably depending on the choice of both the standard and premise of value. In this report, we wish to analyse two key players of the Japanese automotive sector, Nissan and Honda from a business valuation perspective using the methods identified above. After developing common size statements, financial ratios are calculated and forecasting techniques are applied to evaluate the cash flows and stock prices for future years. Based on the above analysis, we then try to arrive at a conclusion as to whether the market is indeed valuing the company's equity correctly, and propose our reasoning as to whether one should buy, sell or hold shares of the above companies.

## 2. INDUSTRY ANALYSIS

Globally, the automobile industry has been enjoying a period of strong growth and profitability. Economic growth in countries like India and China has resulted in high demand for automobiles in these markets. Analysis of the automotive industry can be done using Porter's five forces analysis [2]:

### 2.1 Barrier to Entry

The automotive industry is a high capital industry and the barriers to enter the industry are enormous. Although barriers exist to new companies, established companies are entering new markets through strategic partnerships, buyouts or mergers with other industries. The merger of Daimler-Benz and Chrysler Corporation is one such example. Entry barriers also exist in the emerging under developed markets of Asia, Africa and South America. If a new successful company should emerge in one of these new market one of the global giants would quickly snatch and incorporate it into its fold, to take advantage of their expertise and knowledge.

### 2.2 Power of Suppliers

In the relationship between the automobile industry and its suppliers, the power is tipped in favour of the industry. There are two specific characteristics that make members of the automotive industry powerful buyers: 1) there are only a few automotive manufacturers and the four largest in Japan control about 80 percent of the market; 2) automotive parts are standardized components which can only be used in automobiles. Furthermore, the amount of suppliers is relatively large compared to automakers.

### 2.3 Power of Customers

The bargaining power of customer is also described as the market output, the ability of customers to put the company under pressure. In the relationship between the automobile industry and its ultimate customers, the power is skewed in the customer's favour. Customers wield the greatest power in this relationship due to the fairly standardized nature of the automotive commodity and the relatively low switching cost associated with selecting competing brands. The automaker can take measure to reduce customer power, such as implementing a loyalty program.

### 2.4 Substitutes

The threat of substitutes in the automotive industry is fairly mild. A variety of other forms of transportation are available, but none offers the utility convenience, independence and value afforded by the automobile. The switching costs associated with using a different mode of transportation, such as train, may be high in terms of personal time, convenience and utility but not necessarily monetarily.

### 2.5 Industry Rivalry

For most industry the intensity of competitive rivalry is the major determinant of the competitiveness of the industry. Despite the high concentration seen in the US and Japanese markets, rivalry in the global automotive industry is very intense. Market growth is slow in the established Western markets and companies must fight fiercely to secure gains or prevent losses in market share. The degree of rivalry is further amplified by the high fixed cost associated with auto manufacturing and the low switching cost for consumer when buying different makes and models. The degree of success will vary from company to company depending on their individual business model.

### **3. FINANCIAL ANALYSIS**

#### **3.1 SHORT-TERM SOLVENCY RATIOS**

##### **3.1.1 Current Ratio**

The values for Honda declined steadily for 1.32 to 1.22 over the three year period. The values for Nissan were higher and experienced a slight increase over the same period, increasing from 1.59 in 2012 to 1.66 in 2014. Compare to the industry average of 1.25, Honda ratio decreased too slightly below the industry average, whereas Nissan ratio was well above the industry average. This would signal to short-term creditors that both firms are in position to cover their bills over the short term.

##### **3.1.2 Quick Ratio**

The quick ratio for Honda declined slightly from 1.03 to 0.95 over the three year period whilst Nissan realized a marginal increase over the same period, from 1.34 to 1.43. The quick ratio for both companies was well above the industry average of 0.60. The fact that the ratio of both companies are above the industry average indicates that both companies have liquid assets to cover their current liabilities. This means that both companies are carrying fewer inventories than their competitors.

##### **3.1.3 Cash Ratio**

The cash ratios for Honda were 0.35, 0.29 and 0.25 and that for Nissan was 0.18, 0.15 and 0.16 for the period 2012 to 2014. The average industry cash ratio is 0.20. Honda cash ratio declined slightly over the three year period, but was slightly above the industry average. Nissan ratio fluctuated just below the industry over the same period. This ratio is seldom used in financial reporting, since it is not a realistic for a company to purposefully maintain high levels of cash assets to cover current liabilities.

##### **3.1.4 Net Working Capital to Total Asset**

The ratio for Honda declined from 9.8 to 6.8 percent, while Nissan increased from 22.2 to 23.3 percent over the period 2012 to 2014. The ratio for both companies was well above the industry average of 5.2 percent. This indicates that both companies are in pretty good conditions to make payments to their suppliers on time

#### **3.2 LONG TERM SOLVENCY RATIOS**

##### **3.2.1 Total Debt Ratio**

This higher this ratio, the more leveraged the company and the greater its financial risk. Honda use of debt was constant for 2012 and 2013 with a debt ratio 0.62, whilst there was a slight reduction in 2014. Nissan use of debt increased marginally over the same period from 0.62 to 0.67. Compare to the industry average of 0.42 both companies are utilizing more than 50 percent debt more than the industry average.

##### **3.2.2 Debt to Equity Ratio**

The debt to equity ratio of Honda fluctuated between 1.62 and 1.56 for the three years under consideration. The ratio for Nissan increased steadily over the same period from 1.78 to 2.01. Both companies are operating well above the industry average of 0.72. This high debt/equity ratio signals that both companies have been very aggressive in financing their growth with debt. The auto manufacturing industry is capital intensive and a ratio above 2 is common. However, this can result in a volatile earning as a result of the additional interest.

##### **3.2.3 Times Interest Earned (TIE)**

Honda times interest earned increased substantially over the three year period from 8.6 in 2012 to 24.2 in 2014. The TIE for Nissan experienced a slight increase in 2013 followed by a marginal decrease in 2014. This reinforces the signal that both companies are more than capable of meeting their financial obligations.

### **3.3 ASSET MANAGEMENT RATIOS**

#### **3.3.1 Inventory Turnover**

The inventory turnover of both companies was well above the industry average of 4. Honda's ratio increased slightly over the three year period from 5.72 to 6.72. The ratio for Nissan fluctuated well about the industry average. A high inventory turnover ratio indicates better liquidity, but also indicates a inadequate inventory levels, whereas a low ratio indicate poor liquidity and possible over stocking.

#### **3.3.2 Net Working Capital Turnover (NWC)**

The net working capital of Honda increased steadily over the three year period, whilst Nissan experienced a slight decreased over the same period. The NWC of both companies were well below the industry average of 14.6. The low inventory turnover for both companies is a possible cause for concern.

#### **3.3.3 Fixed Asset Turnover**

The fixed asset turnover for both companies was well above their industry average of 0.9. This signals that both companies have been more effective in using their investment in fixed assets to generate revenue than the industry.

#### **3.3.4 Total Asset Turnover**

Both companies are operating close to the industry average of 0.72, so there is no problem with fixed asset turnover. The ratio for Honda increased slightly from 0.67 to 0.76 over the period in review, whilst that of Nissan decreased from 0.85 to 0.72.

### **3.4 PROFITABILITY RATIOS**

#### **3.4.1 Profit Margin**

The profit margin for Honda increased from 2.8 to 5.1 percent as compared to that of Nissan which experience a slight increase in 2013 followed by a marginal decrease in 2014. The profit margin for both companies is more than 50 percent below the industry average of 10.7 percent. This is an indication that both companies need to better control their costs.

#### **3.4.2 Return on Assets**

Both companies generated less per dollar asset than the industry. Both Honda and Nissan return on asset increased slightly over the period under review, but were well below the industry average of 7.6 percent.

#### **2.4.3 Return on Equity**

The ROE for Honda increased from 4.9 to 9.96 percent over the three year period. Nissan's ROE experience a slight increase in 2013 followed by an increase in 2014. The ROE for both companies was lower than the industrial average of 13.1 percent. This is an indication that the management of both companies are less efficient in its utilization of its equity base and better the return to its investors. Shareholder may want to move their money where they can realize a better return. The fact that both ROA and ROE is very less than the industry average is a worrying signal. However, the fact that ROE exceeds the ROA reflects that both companies use of financial leverage.

## 4. FORECASTING FINANCIAL STATEMENTS

Using trend projections, sustainable growth rates, key management initiatives, extrapolations and subjective analysis, the forecasted financial statements for Honda and Nissan were made for the years 2015, 2016 and 2017. The methodology, results and associated discussions are below.

In both the case of Honda and Nissan, the trends that drive revenue and COGS can be narrowed down to the behaviour of gross profit. The varying trends in gross profit can often prove to be a good indicator of the company's efficiency, and is affected by the following four factors:

- **Sales Changes** - Both external and internal factors influence changes in sales. External factors include economic health, market stability, and natural factors, such as weather-related disasters. Internal factors include the marketing effort behind the company's product line, pricing, and payment options available to the customer.
- **Materials Price Changes** - Raw materials are a major component of cost of goods sold. External factors are generally considered to be a substantial driver of raw materials price changes. Political unrest, weather and geological disasters, and global supply issues are the common factors that affect cost of goods sold. A change in materials price is a sure-fire way of affecting gross profit.
- **Labour Price Changes** - In addition to materials, labour costs are another major part of cost of goods sold. Changes in labour costs can include a range of labour-related costs, including labour cost changes, insurance changes and changes in other fringe benefits. Poor human resource management is a key reason for labour cost increases in a company. Additionally, regulation regarding minimum wage is an external source of labour costs increases.
- **Inventory Method Changes** - The inventory method that is implemented in a company has an impact on a company's gross profit. The FIFO (first in, first out) inventory method uses inventory that is purchased first earliest in the production process, causing cheaper materials to be used in the current period. Inventories that are purchased at earlier dates are typically considered to be purchased at a lower price due to inflation. LIFO (last in, last out) uses the most recently purchased materials first, resulting in higher material prices, decreasing gross profit.

In Honda's case, revenues have seen 1.5 to 2 times growth due to decrease in operating expenses, and an increase in net sales. Forecasted trends for 2015-2017 predict an increase in revenues at approximately 1.09 times, the decrease being due to increase in investment in R&D, possibly to develop a new product for the market. In Nissan's case, past revenues have increased roughly by 1.14 times. However, revenue in 2015 dips by 0.8 times compared to 2014, before picking up again by 1.08 times in 2016. This slight dip is caused by increases in asset acquisitions, as indicated by increases in capital expenditure on fixed assets, and the revenue thus does not grow as quickly as Honda. This may also indicate that the company is investing for the future, and does not fixate on short-term gains.

For Honda, we expect to see approximately a 1.09 times increase in both sales and cost of goods sold, as we did not find any information on the pricing of new products which Honda may release in the next three years, or on any new manufacturing plants that Honda may have purchased or created for products which require significant advances in manufacturing technology and hence significant investment. A similar trend is observed for Nissan as well.



For Honda, we see less than 1% increases in a/c receivables and payables overall years. For Nissan, a/c receivables go down by 0.2 times from 2012-2013, before picking up by 1.1 times in 2014. In the case of Honda, we expect the purchases on fixed assets to be of the same taxation class in the countries where the former is done, and hence we do not expect the depreciation to change during 2015-2017. For Nissan, we expect that the fixed assets purchased belong to different classes, and hence depreciation will not be the same. Further, we expect that some of these may be sold, scrapped or retired before their lifetime ends, and hence there will be a decrease in accumulated depreciation and amortization from 2015-2017.

For Honda, we forecast a 1.09 times increase in administrative expenses for 2015-2017. For Nissan, we find a 0.2 times decrease in 2013-2013, followed by an approximately 1.07 times increase in the subsequent years. This trend could be due to reduction in staff or related expenses in 2012-2013, followed by an increase in the same in the coming years. The interest on debt is expected to increase by 1.0 times for both Honda and Nissan in the years 2015-2017. This means that the highest payments will likely be towards the end. While this bodes well for a company like Honda, which has increased operating income, it does not bode well for Nissan, whose revenues show erratic behaviour.

Based on the discussion above, we do believe that Honda will not divest assets before their lifetime ends, due to a constant depreciation being assumed. Nissan, on the other hand, is expected to divest some of assets before their lifetime, and is expected to lose approx. 2.5 percent on a yearly basis from 2015-2017.

The Japanese government reduce the corporate tax rate by 2.51 percent to 32.1 percent in April of 2015. This value is expected to reduce to 31.3 percent and eventually to 30 percent over the next few years. These reductions intended to boost corporate profitability and bolster economic growth. For companies like Honda and Nissan reduction in the corporate tax rate will increase the net income, making more money available for increases to workers, investment in new projects and payment of dividend to shareholders. Honda dividend payments to its shareholders have increased steadily over the last five years, from 1.35 percent in 2010 to 2.26 percent in 2014. This expected to continue in 2015 and 2016. The company dividend policy is to make distribution after taking into account its long-term consolidated earnings performance. Nissan also experience a steady increase in dividend payments over the last five years given the positive outlook and the forecasted growth in sales.

The retained earnings of both Honda and Nissan have increased over the period 2012 to 2014. This value is projected to continue increasing over the period 2015 to 2017, partly due to increase in revenue from sales and reduction in the corporate income tax rate. The actual retained earnings will depend on the dividend management decide to pay in the particular year and on the availability of projects for the company to undertake. The value of property, plant and equipment for both companies has grown progressively over the past three years to satisfy the increasing demand for vehicles. Both companies are projecting continued growth over the period 2015 to 2017. This would require both companies to invest in new properties, land and equipment to realize the increase in their output. This would definite require additional capital expenditure but will realize higher profitability.

## 5. FORECASTED EQUITY VALUATIONS

The stock value for both companies was predicted using the forecasted balance sheets and income statements. 6 different methods were used to value the companies. A summary of the results can be seen in the following sections. For more detailed calculations, see Appendices I and J.

### 5.1 FOR HONDA:

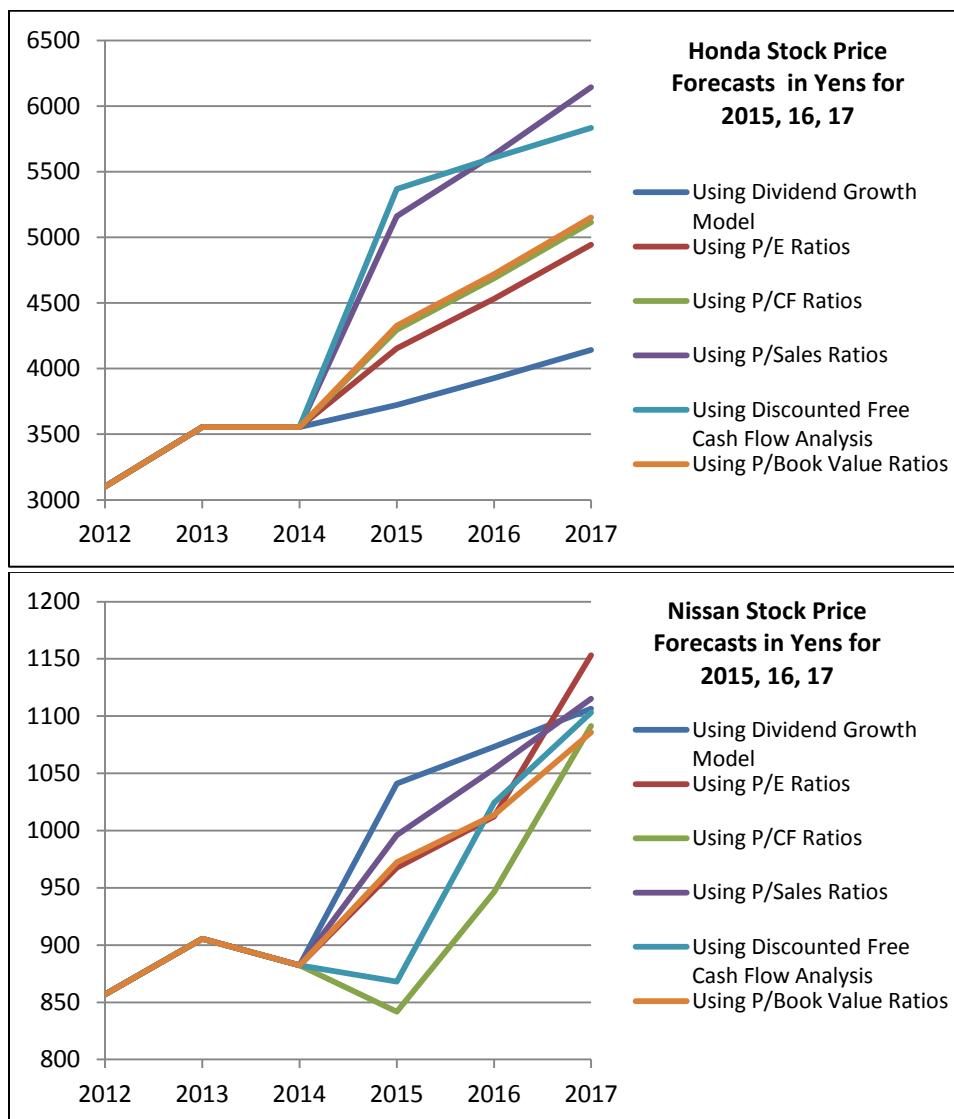
	Forecasted Share Price (Yen)		
Method Used:	2015	2016	2017
Dividend Growth Model	3722.37	3927.10	4143.09
P/E Multiple	4153.83	4531.83	4944.23
P/CF Multiple	4296.60	4687.64	5114.16
P/Sales Multiple	5161.45	5631.14	6143.58
P/ Book Value	4326.79	4720.53	5150.09
Discounted Cash Flow Method	5368.13	5606.44	5834.56

### 5.2 FOR NISSAN:

	Forecasted Share Price (Yen)		
Method Used	2015	2016	2017
Dividend Growth Model	1040.97	1073.15	1106.42
P/E Multiple	967.60	1012.25	1153.18
P/CF Multiple	841.70	946.19	1091.35
P/Sales Multiple	996.14	1053.95	1115.12
P/ Book Value	972.27	1013.75	1085.78
Discounted Cash Flow Method	868.16	1024.26	1103.12

## 6. RECOMMENDATIONS

The graphs below summarize our valuation forecasts for Honda and Nissan respectively:



To present shareholders: We recommend that they hold onto stocks of both Honda and Nissan, given their positive forecasts over the next three years. Even though Nissan has been beset by negative free cash flows for some time now, they are definitely increasing and will be further boosted by growing sales in other Asian markets. We expect Nissan stock to pick up momentum after a period of twelve to eighteen months [3] [4].

To prospective shareholders: We recommend that they buy Honda stocks now, given its strong market position and future growth. On the other hand, we recommend that they refrain from buying Nissan stock, on account of its negative cash flows presently. After a period of twelve to eighteen months, one can avail a better entry point in the market with higher certainty.

## **7. REFERENCES**

- [1] Wikipedia, 'Business valuation', 2015. [Online]. Available:  
[https://en.wikipedia.org/wiki/Business\\_valuation](https://en.wikipedia.org/wiki/Business_valuation). [Accessed: 21- Jul- 2015].
- [2] Wikipedia, 'Porter five forces analysis', 2015. [Online]. Available:  
[http://en.wikipedia.org/wiki/Porter\\_five\\_forces\\_analysis](http://en.wikipedia.org/wiki/Porter_five_forces_analysis). [Accessed: 21- Jul- 2015].
- [3] Investopedia, 'Investopedia - Educating the world about finance', 2015. [Online]. Available:  
<http://www.investopedia.com>. [Accessed: 21- Jul- 2015].
- [4] Strategyand.pwc.com, 'Strategy& - the global strategy consulting team at PwC', 2015. [Online].  
Available: <http://www.strategyand.pwc.com>. [Accessed: 21- Jul- 2015].

## 8. APPENDIX

### Appendix A: Nissan Balance Sheet Common Size Analysis

				%		
	12	13	14	12	13	14
<b>ASSETS</b>						
<b>Current Assets</b>						
Cash on hand and in banks	765,423	690,817	822,863	6.913108165	5.394828807	5.596411933
Trade notes and accounts receivable	820,008	712,165	785,954	7.406106167	5.561542721	5.345388411
Sales finance receivables	3,210,342	4,161,925	5,033,558	28.9950021	32.50191134	34.23396611
Securities	77,476	107,651	13,470	0.69974376	0.84068388	0.091611445
Merchandise and finished goods	665,262	711,402	769,676	6.008479186	5.55558419	5.234679346
Work in process	153,228	104,259	94,386	1.383916786	0.814194579	0.641933027
Raw materials and supplies	200,476	309,460	287,789	1.810648847	2.416680138	1.957295192
Deferred tax assets	266,540	244,133	210,395	2.407322292	1.906519008	1.430927249
Other	506,947	608,588	650,143	4.578617895	4.752674115	4.421717884
Allowance for doubtful accounts	-55,630	-53,296	-58,956	-	-	-
				0.502436179	0.416206891	0.400968402
Total current assets	6,610,072	7,597,104	8,609,278	59.70050902	59.32841188	58.5529622
<b>Fixed assets</b>						
<b>Property, plant and equipment</b>						
Buildings and structures, net	615,921	641,915	615,127	5.562843675	5.012936181	4.183568933
Machinery, equipment and vehicles	1,874,277	2,326,711	2,658,776	16.92799881	18.17009067	18.08272548
Land	649,509	644,656	642,932	5.866202049	5.034341598	4.372674815
Construction in progress	255,333	313,243	337,635	2.306103484	2.446222893	2.296305148
Other, net	336,206	436,088	503,568	3.036528095	3.405561972	3.424839814
Total property, plant and equipment	3,731,246	4,362,613	4,758,038	33.69967611	34.06915332	32.36011419
Intangible fixed assets	120,114	121,698	92,334	1.08483946	0.95038176	0.627977074
<b>Investments and other assets</b>						
Investment securities	371,259	448,862	930,293	3.353117981	3.505318555	6.327059117
Long-term loans receivable	5,617	13,111	13,529	0.050731332	0.102388332	0.092012713

Deferred tax assets	92,378	103,200	117,437	0.834334879	0.805924482	0.798706259
Other	144,605	161,296	185,047	1.306036017	1.259616233	1.258531783
Allowance for doubtful accounts	-3,238	-2,714	-2,553	-	-	-
				0.029244802	0.021194564	0.017363327
Total investments and other assets	610,621	723,755	1,243,753	5.514975407	5.652053038	8.458946545
Total fixed assets	4,461,981	5,208,066	6,094,125	40.29949098	40.67158812	41.4470378
Total assets	11,072,053	12,805,170	14,703,403	100	100	100

#### LIABILITIES AND EQUITY

	12	13	14	12(%)	13(%)	14(%)
Trade notes and accounts payable	1,377,254	1,336,234	1,511,910	12.43901199	10.43511332	10.28272163
Short-term borrowings	244,582	519,180	706,576	2.209003154	4.05445613	4.805526993
Current portion of long-term borrowings	822,268	779,881	910,546	7.426517919	6.090360378	6.192756874
Commercial papers	38,437	219,453	151,175	0.3471533238	1.713784354	1.028163344
Current portion of bonds	187,198	181,336	226,590	1.690725288	1.416115522	1.541071819
Lease obligations	38,190	32,678	32,838	0.3449224819	0.2551938006	0.2233360536
Accrued expenses	660,369	659,970	693,438	5.96428684	5.153933919	4.716173528
Deferred tax liabilities	136	116	316	0.00122831782	0.0009058841077	0.00214916234
Accrued warranty costs	85,535	87,424	93,151	0.7725306228	0.6827242434	0.6335336112
Accrual for loss on disaster	0	0	0	0	0	0
Other	691,259	743,973	860,709	6.243277557	5.80994239	5.853808129
Total current liabilities	4,145,228	4,560,245	5,187,249	37.43865749	35.61252994	35.27924114
Long-term liabilities						
Bonds	584,962	678,585	918,783	5.283229768	5.29930489	6.248777919
Long-term borrowings	1,877,997	2,352,450	2,682,381	16.96159691	18.37109542	18.24326654
Lease obligations	34,584	22,795	23,580	0.3123539961	0.1780140365	0.1603710379
Deferred tax liabilities	486,699	555,249	605,140	4.395743048	4.336131422	4.115645881
Accrued warranty costs	100,431	93,519	105,884	0.9070675511	0.7303222058	0.7201326115
Accrued retirement benefits	159,369	164,503	—	1.439380754	1.284660805	---
Accrued directors' retirement benefits	544	395	216,583	0.004913271279	0.003084691574	1.473012744

Other	232,242	303,436	292,275	2.097551376	2.369636639	1.987805136
Total long-term liabilities	3,476,828	4,170,932	4,844,626	31.40183668	32.57225011	32.94901187
Total liabilities	7,622,056	8,731,177	10,031,875	68.84049417	68.18478005	68.22825301
Net assets						
Shareholders' equity						
Common stock	605,814	605,814	605,814	5.471559791	4.73101099	4.120229854
Capital surplus	804,470	804,470	804,485	7.265770856	6.282384381	5.47142046
Retained earnings	3,009,090	3,254,206	3,526,646	27.17734462	25.41321982	23.98523661
Treasury stock	-149,542	-149,549	-149,315	-1.35062576	-1.167879849	-1.015513211
Total shareholders' equity	4,269,832	4,514,941	4,787,630	38.5640495	35.25873534	32.56137372
Accumulated other comprehensive income						
Unrealized holding gain and loss on securities	16,979	20897	81,630	0.1533500607	0.1631918983	0.5551776007
Unrealized gain and loss from hedging instruments	-5,108	-8578	-7,015	-0.04613417223	-0.0669885679	-0.04771004372
Adjustment for revaluation of the accounts of the consolidated subsidiaries based on general price level accounting	-13,945	-13945	-13,945	-0.1259477353	-0.1089013266	-0.09484198998
Translation adjustments	-1,121,059	-780013	-469,202	-10.12512314	-6.091391212	-3.191111609
Premeasurements of defined benefit plans	0	0	-40,444	0	0	-0.275065575
Total accumulated other comprehensive income	-1,123,133	-781639	-448,976	-10.14385498	-6.104089208	-3.053551617
Share subscription rights	2,415	2,415	2,401	0.02181167305	0.01885957	0.0163295531
Minority interests	300,883	338,276	330,473	2.717499636	2.641714245	2.247595336
Total equity	3,449,997	4,073,993	4,671,528	31.15950583	31.81521995	31.77174699
Total liabilities and equity	11,072,053	12,805,170	14,703,403	100	100	100

## Appendix B: Nissan Statement of Income Common Size Analysis

	%					
	12	13	14	12	13	14
Net sales	9,409,026	9,629,574	10,482,520	100	100	100
Cost of sales	7,772,832	8,022,658	8,636,063	82.61037859	83.31269898	82.38537107
Gross profit	1,636,194	1,606,916	1,846,457	17.38962141	16.68730102	17.61462893
Selling, general and administrative expenses				0	0	0
Total selling, general and administrative expenses	1,090,355	1,083,372	1,348,092	11.58839395	11.25046653	12.8603809
Operating income	545,839	523,544	498,365	5.80122746	5.436834485	4.754248024
Non-operating income				0	0	0
Total non-operating income	69,152	66,022	111,146	0.734953862	0.685617038	1.060298478
Non-operating expenses				0	0	0
Total non-operating expenses	79,901	60,246	82,322	0.84919523	0.625635153	0.785326429
Ordinary income	535,090	529,320	527,189	5.686986092	5.49681637	5.029220073
Special gains				0	0	0
Total special gains	55,991	23,610	27,128	0.595077535	0.245182186	0.258792733
Special losses				0	0	0
Total special losses	61,752	36,216	24,939	0.656305977	0.376091403	0.23791035
Income before income taxes and minority interests	529,329	516,714	529,378	5.62575765	5.365907152	5.050102456
Income taxes-current	115,185	105,659	131,990	1.224196851	1.097234416	1.259143794
Income taxes-deferred	36,321	40,692	-16,939	0.386022953	0.42257321	-0.161592823
Total income taxes	151,506	146,351	115,051	1.610219804	1.519807626	1.097550971
Income before minority interests	377,823	370,383	414,327	4.015537846	3.84630722	3.952551486
Income attributable to minority interests	36,390	27,917	25,293	0.386756291	0.289908982	0.2412874
Net income	341,433	342,446	389,034	3.628781555	3.556190544	3.711264085



**Appendix C: Nissan Forecasted Statement of Income, 2015-2017. Millions of Yen.**

	12	13	14	15	16	17
Net sales	9,409,026	9,629,574	10,482,520	11090928.05	11734648.25	12415730.12
Cost of sales	7,772,832	8,022,658	8,636,063	9205470.278	9739758.044	10305056
Gross profit	1,636,194	1,606,916	1,846,457	1885457.768	1994890.202	2110674.121
Selling, general and administrative expenses						
Depreciation and amortization	48718	48361	43515	40000	39000	38000
Total selling, general and administrative expenses	1,090,355	1083372	1,348,092	1441820.646	1525504.272	1614044.916
Operating income	545,839	523544	498,365	443637.1219	469385.9298	496629.205
Non-operating income						
Total non-operating income	69,152	66022	111146	106472.9092	117346.4825	124157.3012
Non-operating expenses						
Interest expense	32,892	27,471	28677	30000	30000	30000
Total non-operating expenses	79,901	60,246	82322	100927.4452	106785.299	112983.1441
Ordinary income	535,090	529,320	527189	449182.5859	479947.1132	507803.3621
Special gains						
Total special gains	55,991	23,610	27128	28836.41292	30510.08544	32280.89832
Special losses						
Total special losses	61,752	36216	24939	18000	18000	18000
Income before income taxes and minority interests	529,329	516714	529378	460018.9988	492457.1987	522084.2604
Income taxes-current	115,185	105659	131990	115004.7497	123114.2997	130521.0651
Income taxes-deferred	36,321	40692	-16939	0	0	0
Total income taxes	151,506	146,351	115051	115004.7497	123114.2997	130521.0651
Income before minority interests	377,823	370383	414327	345014.2491	369342.899	391563.1953
Income attributable to minority interests	36,390	27,917	25293	23000	22000	21000
Net income	341,433	342446	389034	322014.2491	347342.899	370563.1953
EBITDA	574,549	564,629	576277	507018.9988	539457.1987	569084.2604
EBIT	525,831	516,268	532762	467018.9988	500457.1987	531084.2604
Operating Cash Flow	423,043	418,278	461226	392014.2491	416342.899	438563.1953
Corporate Tax Rate	0.38	0.35	0.33	0.33	0.33	0.33
NOPAT	338420.18	340303.6	333904.55	297236.8716	314488.573	332741.5673

**Appendix D: Nissan Forecasted Balance Sheet, 2015-2017. Millions of Yen**

	12	13	14	15	16	17
<b>ASSETS</b>						
Current Assets						
Cash on hand and in banks	765,423	690,817	822,863	887274.2437	962241.1561	1042921.33
Trade notes and accounts receivable	820,008	712,165	785,954	850810.9186	932341.9154	1020470.969
Sales finance receivables	3,210,342	4,161,925	5,033,558	5545464.023	5984670.605	6456179.665
Securities	77,476	107,651	13,470	14000	15000	16000
Merchandise and finished goods	665,262	711,402	769,676	798984.3792	827746.0124	857154.7952
Work in process	153,228	104,259	94,386	108952.4154	112874.4562	116884.7448
Raw materials and supplies	200,476	309,460	287,789	302645.5982	313540.1562	324679.8467
Deferred tax assets	266,540	244,133	210,395	199636.7048	187754.3719	173820.2217
Other	506,947	608,588	650,143	830015.6828	739078.8947	744943.8074
Allowance for doubtful accounts	-55,630	-53,296	-58,956	-60000	-60000	-60000
Total current assets	6,610,072	7,597,104	8,609,278	9477783.966	10015247.57	10693055.38
Fixed assets	2,464,844					
Property, plant and equipment						
Buildings and structures, net	615,921	641,915	615,127	669666.0427	707641.283	755532.7391
Machinery, equipment and vehicles, net	1,874,277	2,326,711	2,658,776	2894511.218	3058652.376	3265654.595
Land	649,509	644,656	642,932	699936.3191	739628.118	789684.366
Construction in progress	255,333	313,243	337,635	367570.7526	388414.8551	414701.8362
Other, net	336,206	436,088	503,568	548215.8803	579303.9577	618509.853
Total property, plant and equipment	3,731,246	4,362,613	4,758,038	5179900.213	5473640.589	5844083.389
Intangible fixed assets	120,114	121,698	92,334	100520.6151	106220.9108	113409.686
Investments and other assets				421,862	293740.3763	370442.7998
Investment securities	371,259	448,862	930,293	1012775.625	1070207.83	1142636.916
Long-term loans receivable	5,617	13,111	13,529	14728.52255	15563.74361	16617.06026
Deferred tax assets	92,378	103,200	117,437	127849.3239	135099.3687	144242.5683

Other	144,605	161,296	185,047	201453.8334	212877.8228	227284.8806
Allowance for doubtful accounts	-3,238	-2,714	-2,553	-2779.356795	-2936.967806	-3135.734707
Total investments and other assets	610,621	723,755	1,243,753	1354027.948	1430811.798	1527645.691
Total fixed assets	4,461,981	5,208,066	6,094,125	6634448.776	7010673.298	7485138.766
Total assets	11,072,053	12,805,170	14,703,403	16112232.74	17025920.87	18178194.15

## LIABILITIES AND EQUITY

Trade notes and accounts payable	1,377,254	1,336,234	1,511,910	1614109.857	1707793.191	1806913.929
Short-term borrowings	244,582	519,180	706,576	805611.6371	885347.885	981622.4839
Current portion of long-term borrowings	822,268	779,881	910,546	998958.43	1055607.094	1127048.037
Commercial papers	38,437	219,453	151,175	161122.3274	170259.2087	181781.9415
Current portion of bonds	187,198	181,336	226,590	241683.4911	255388.813	272672.9122
Lease obligations	38,190	32,678	32,838	32224.46548	34051.84173	36356.38829
Accrued expenses	660,369	659,970	693,438	805611.6371	851296.0433	908909.7073
Deferred tax liabilities	136	116	316	400	450	500
Accrued warranty costs	85,535	87,424	93,151	112785.6292	119181.4461	127247.359
Accrual for loss on disaster	0	0	0	0	0	0
Other	691,259	743,973	860,709	966733.9645	1021555.252	1090691.649
Total current liabilities	4,145,228	4,560,245	5,187,249	5739241.439	6100930.775	6533744.407
Long-term liabilities			3,422,029	3738542.527	3914316.794	4159310.973
Bonds	584,962	678,585	918,783	1047295.128	1106684.856	1272473.59
Long-term borrowings	1,877,997	2,352,450	2,682,381	3061324.221	3234924.965	3453856.888
Lease obligations	34,584	22,795	23,580	32224.46548	34051.84173	36356.38829
Deferred tax liabilities	486,699	555,249	605,140	644489.3097	681036.8346	727127.7658
Accrued warranty costs	100,431	93,519	105,884	104729.5128	110668.4856	118158.2619
Accrued retirement benefits	159,369	164,503	—	0	0	0
Accrued directors' retirement benefits	544	395	216,583	161122.3274	170259.2087	181781.9415
Other	232,242	303,436	292,275	322244.6548	340518.4173	363563.8829

Total long-term liabilities	3,476,828	4,170,932	4,844,626	5373429.619	5678144.609	6153318.718
Total liabilities	7,622,056	8,731,177	10,031,875	11112671.06	11779075.38	12687063.13
Net assets			1,080,796	666404.3252	907987.7421	
Shareholders' equity			328,034	247283.799	244285.5377	
Common stock	605,814	605,814	605,814	605,814	605,814	605,814
Capital surplus	804,470	804,470	804,485	802768	802768	802768
Retained earnings	3,009,090	3,254,206	3,526,646	3,718,660	3,931,003	4,161,566
Treasury stock	-149,542	-149,549	-149,315	-149,315	-149,315	-149,315
Total shareholders' equity	4,269,832	4,514,941	4,787,630	4,977,927	5,190,270	5,420,833
Accumulated other comprehensive income						
Unrealized holding gain and loss on securities	16,979	20897	81,630	96673.39645	102155.5252	109069.1649
Unrealized gain and loss from hedging instruments	-5,108	-8578	-7,015	-10000	-10000	-10000
Adjustment for revaluation of the accounts of the consolidated subsidiaries based on general price level accounting	-13,945	-13945	-13,945	-13,945	-13,945	-13,945
Translation adjustments	-1,121,059	-780013	-469,202	-322244.6548	-306466.5756	-290851.1063
Measurements of defined benefit plans	0	0	-40,444	-40,444	-40,444	-40,444
Total accumulated other comprehensive income	-1,123,133	-781639	-448,976	-289960.2584	-268700.0504	-246170.9415
Share subscription rights	2,415	2,415	2,401	2400	2400	2400
Minority interests	300,883	338,276	330,473	309195	322875	314069
Total equity	3,449,997	4,073,993	4,671,528	4,999,562	5,246,845	5,491,131
Total liabilities and equity	11,072,053	12,805,170	14,703,403	16,112,233	17,025,920	18,178,195

## Appendix E: Honda Balance Sheet Common Size Analysis

	Comprehensive statement of financial position			Common-Size statement of financial position		
	2012	2013	2014	2012	2013	2014
<b>ASSETS</b>						
Current assets				%	%	%
Cash	1247113	1,206,128	1,168,914	10.6	8.8	7.5
Cash Receivables	2456194	2,901,504	3,299,457	20.8	21.3	21.1
Inventory	1035779	1,215,421	1,302,895	8.8	8.9	8.3
Total current assets	4739086	5,323,053	5,771,266	40.2	39	36.9
Fixed assets						
Net property, plant and equivalent	1973458	2,399,530	2,818,432	16.8	17.6	18.0
Finance receivables	2364393	2788135	3,317,553	20.1	20.4	21.2
Investment and advances	623607	668790	817,927	5.3	4.9	5.2
Property on operating leases	1472757	1843132	2,236,721	12.5	13.5	14.3
Others	607458	612717	660,132			4.2
Total fixed assets	7041673	8,312,304	9,850765	59.8	61.0	63.1
Total Assets	11780759	13,635,357	15,622,031	100%	100%	100%
<b>LIABILITIES AND EQUITY</b>						
Short term debt	964848	1,238,297	1,319,344	8.2	9.1	8.5
Current portion of LTD	911395	945,046	1,303,464	7.7	6.9	8.3
Trade payable	1703516	1,905,661	2,088,521	14.5	14	13.4
Total Current liabilities	3579759	4,089,004	4,711,329	30.4	30	30.2
Long term debt (LTD)	2235001	2,710,845	3,234,066	19	19.9	20.7
Other liabilities	1437709	1,630,085	1,563,238	12.2	11.9	10.0
Total LTD liabilities	3672710	4,340,930	4,797,304	31.2	31.8	30.7
Total liabilities	7252469	8,429,934	9,508,633	61.6	61.8	60.9
Owners' Equity						
Shareholders' equity	4402614	5,043,500	5,918,979	37.4	37	37.9
Non-controlling interests	125676	161,923	194,419	1.0	1.2	1.2
Total equity	4528290	5,205,423	6,113,398	38.4	38.2	39.1
Total liabilities and equity	11780759	13635357	15,622,031	100%	100%	100%

## Appendix F: Honda Statement of Income Common Size Analysis

	Comprehensive statement of the income			Common-Size statement of the income		
	2012	2013	2014	2012	2013	2014
					%	%
Sales	7948095	9,877,947	11,842,451	100	100	100
Cost of goods sold	(5919633)	(7,345,162)	(8,761,083)	-74.5	-74.4	-74.0
Operating expenses	(1797098)	(1,987,975)	(2,331,087)	-22.6	-20.1	-19.7
Operating Income	231364	544,810	750,281	2.9	5.5	6.3
Interest paid	26039	(55,919)	(21,341)	+0.33	-0.6	-0.2
Taxable income	257403	488,891	728,940	3.2	4.9	6.1
Taxes	(135735)	(178,976)	(252,662)	-1.7	-1.8	-2.1
Income before Equity in income of affiliates	121668	309,915	476,278	1.5	3.1	4.0
Equity in income of affiliates	100406	82,723	132,471	1.3	+0.8	+1.1
Net income	222074	392,638	608,749	2.8	3.9	5.1

**Appendix G: Honda Forecasted Statement of Income, 2014-2017. Millions of Yen**

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Net sales and other operating revenue	11842451	12920114	14095844	15378566
Operating costs and expenses:				
Cost of sales	8761083	9558342	10428151	11377112
Selling, general and administrative	1696957	1851380	2019856	2203663
Research and development	634130	691836	754793	823479
Total operating costs and expenses	11092170	12101557	13202799	14404254
Operating income	750281	818557	893045	974312
Other income (expenses):				
Interest income	24026	26212	28598	31200
Interest expense	(12703)	13859	15120	16496
Other, net	(32664)	35636	38879	42417
Total other income (expense)	(21341)	23283	25402	27713
Income before income taxes and equity in income of affiliates	728940	795273	867643	946599
Income tax expense:				
Current	207236	226094	246669	269116
Deferred	45425	49559	54069	58989
Total income tax expense	252662	275654	300739	328106
Income before equity in income of affiliates	476278	519619	566905	618493
Equity in income of affiliates	132471	144526	157678	172026
Net income	608749	664145	724582	790519
Less: net income attributed to non-controlling interests	34642	37794	41234	44986
Net income attributed to Honda Motor Co., Ltd.	574107	626351	683349	745533

## Appendix H: Honda Forecasted Balance Sheet, 2014-2017

<b>ASSETS</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Total current assets	5771266	6296451	6869428	7494546
Net property on operating leases	2236721	2440263	2663327	2904598
Net property, plant and equipment	2818432	3074909	3354726	3660006
Total assets	15622031	17043636	18594607	20286716
<b>LIABILITIES AND EQUITY</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Total current liabilities	4711329	5140060	5607805	6118116
Total liabilities	9508633	10373919	11317945	12347878
Total equity	6113398	6669717	7276661	7938838
Total liabilities and equity	15622031	17043636	18594607	20286716



## Appendix I: Honda Share Price Forecasting

The total number of shares outstanding at the end of 2014 was 1.811 billion per the 2014 Annual Report. This will be used throughout this report. All figures which are not ratios are in millions of yen. This will be used throughout this section. All figures which are not ratios are in yen.

### 1. Dividend Growth Model:

Looking at the annual reports and associated management statements, the rate of growth of dividends has been,  $g=5.50\%$ . Using this dividends for the next 3 years were found and the stock prices forecasted using the dividend growth model equation, for year 't',

$$P_t(\text{Share price}) = D_t(\text{Dividends per share})[1+g]/(r-g)$$

Here, the discount rate 'r' has already been calculated earlier to be 8.01%. The forecasted share prices are subsequently,

Year	2012	2013	2014	2015	2016	2017
Share Price	3102.12	3555.67	3554.23	3722.37	3927.10	4143.09

### 2. Using P/E Ratios:

We found the P/E ratios for 2012-2014, and then average them to find the values for 2015-2017.

Year	2012	2013	2014	2015	2016	2017
P/E	26.80	17.45	10.48	18.24	18.24	18.24

To find the earnings for each year, we find the fraction of earnings that dividends occupy in relation to net income, and then subtract that portion to find the actual earnings. For example, in 2012, it was  $123,901/222,074=0.557$ . In 2013, the ratio was  $136,015/392,838=0.34$ . In 2014, it was  $152,058/608,749=0.249$ . Hence for 2015-2017, we take the average of these as the portion of net income given out as dividends, which comes out to be 0.382. The earnings for 2012-2017 are given below:

Year	2012	2013	2014	2015	2016	2017
Earnings	137241.73	242650.38	376206.88	410441.61	447791.61	488540.74

The undiscounted stock price for 2015-2017 is therefore given below:

Year	2015	2016	2017
Stock price (yen)	4153.83	4531.83	4944.23

### 3. Using P/CF Ratios:

We found the P/CF ratios for 2012-2014, and then average them to find the values for 2015-2017.

Year	2012	2013	2014	2015	2016	2017
P/CF	4.26	3.89	3.61	3.92	3.92	3.92

To find the operating cash flow for each year, we find the operating income and net working capital for those years, and add them. They are shown below for 2012-2017:

Year	2012	2013	2014	2015	2016	2017
OCF	1390691	1778859	1810218	1974948	2154688	2350742

The undiscounted stock price for 2015-2017 is therefore given below:

Year	2015	2016	2017
Stock price (yen)	4296.60	4687.64	5114.16

#### 4. Using P/Sales Ratios:

We found the P/Sales ratios for 2012-2014, and then average them to find the values for 2015-2017.

Year	2012	2013	2014	2015	2016	2017
P/Sales	0.7	0.67	0.8	0.72	0.72	0.72
Sales per share				7168.68	7821.03	8532.74

Using the forecasted values for sales, the stock price for 2015-2017 is calculated below: The undiscounted stock price for 2015-2017 is therefore given below:

Year	2015	2016	2017
Stock price (yen)	5161.45	5631.14	6143.57

#### 5. Using P/Book Ratios:

To calculate the P/Book Value ratio, we divided the share price by the shareholders' equity per share for the first 3 years and used the average for forecasting purposes.

Year	2012	2013	2014	2015	2016	2017
Historical Share Price	3102.12	3555.67	3554.23	-	-	-
Shareholders' equity per share	2442.77	2798.36	3284.12	3582.98	3909.03	4264.75
P to book value ratio	1.26	1.27	1.08	1.20	1.21	1.21
Forecasted Share Price (yen)	-	-	-	4326.78	4720.53	5150.09

#### 6. Using Discounted Free Cash Flow Analysis

For Honda, WACC is 4.24%.

Item	2015	2016	2017
Net Sales	12920114	14095844	15378566
Net Income	664145	724582	790519
CAPEX (5.2% of net sales) [4]	671845.93	732983.89	799685.43
Free Cash Flow (FCF)	4699117.07	4689638.11	4679298.57
Terminal Value (TV)	105624298.10	1054112350	105178828.20
Net Present Value (2014)	97367217.70	101683109.30	105814321.90
Equity value	9721678.77	10153267.93	10566389.19
Value per share	5368.127	5606.443	5834.56

## Appendix J: Nissan Share Price Forecasting

The total number of shares outstanding at the end of 2014 was 2.096 billion per the 2014 Annual Report. This will be used throughout this report. All figures which are not ratios are in millions of yen.

### 1. Dividend Growth Model:

Looking at the annual reports and associated management statements, the rate of growth of dividends has been,  $g=3.10\%$ . Nissan's dividends have experienced a very high initial thrust in 2011, after which its growth rate has been declining rapidly. This unusual earlier hike was carried out to build investor confidence, till such a time when operations would become usual. Therefore, from 2014 onwards, dividends will continue to grow albeit at a lower rate. Using these dividends for the next 3 years were found and the stock prices forecasted using the dividend growth model equation, for year 't',

$$P_t(\text{Share price}) = D_t(\text{Dividends per share})[1+g]^{t-g}$$

Here, the discount rate 'r' has already been calculated earlier to be 6.47%. The forecasted share prices are subsequently,

Year	2012	2013	2014	2015	2016	2017
Share Price	856.84	905.56	882.43	1040.97	1073.15	1106.42

### 2. Using P/E Ratios:

We found the P/E ratios for 2012-2014, and then average them to find the values for 2015-2017.

Year	2012	2013	2014	2015	2016	2017
P/E	5.43	5.54	4.60	5.19	5.19	5.19

To find the earnings for each year, we find the fraction of earnings that dividends occupy in relation to net income, and then subtract that portion to find the actual earnings. For example, in 2012, it was  $76452/341433=0.223$ . In 2013, the ratio was  $109449/342446=0.32$ . In 2014, it was  $126402/389034=0.324$ . Hence for 2015-2017, we take the average of these as the portion of net income given out as dividends, which comes out to be 0.288. The earnings for 2012-2017 are given below:

Year	2012	2013	2014	2015	2016	2017
Earnings	243100.29	243821.55	276992.20	405617.92	424335.20	483413.06

The undiscounted stock price for 2015-2017 is therefore given below:

Year	2015	2016	2017
Stock price (yen)	967.60	1012.25	1153.18

### 3. Using P/CF Ratios:

We found the P/CF ratios for 2012-2014, and then average them to find the values for 2015-2017.

Year	2012	2013	2014	2015	2016	2017
P/CF	4.38	4.53	3.87	4.26	4.26	4.26

To find the operating cash flow for each year, we find the operating income and net working capital for those years, and add them. They are shown below for 2012-2017:

<b>Year</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
OCF	423043	418278	461226	414132.21	465543.25	536964.69

The undiscounted stock price for 2015-2017 is therefore given below:

<b>Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Stock price (yen)	841.70	946.19	1091.35

#### 4. Using P/Sales Ratios:

We found the P/Sales ratios for 2012-2014, and then average them to find the values for 2015-2017.

<b>Year</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
P/Sales	0.19	0.19	0.17	0.19	0.19	0.19

Using the forecasted values for sales, the stock price for 2015-2017 is calculated below: The undiscounted stock price for 2015-2017 is therefore given below:

<b>Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Stock price (yen)	996.14	1053.95	1115.12

#### 5. Using P/Book Ratios:

We found the P/book ratios for 2012-2014, and then average them to find the values for 2015-2017.

<b>Year</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
P/book	0.43	0.42	0.37	0.409	0.409	0.409

Using the forecasted values for sales, the stock price for 2015-2017 is calculated below: The undiscounted stock price for 2015-2017 is therefore given below:

<b>Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Stock price (yen)	972.27	1013.75	1085.78

#### 6. Using Discounted Free Cash Flow Analysis:

For Nissan, WACC is 3.20%.

<b>Item</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Net Sales	11090928.05	11734648.25	12415730.12
Net Income	507018.99	539457.19	569084.26
CAPEX	461862	332740.37	408442.79
Free Cash Flow (FCF)	-231357	-69941.56	-46352.71
Terminal Value (TV)	1635718.98	18204482.09	19588022.73
Net Present Value (2014)	2010168.81	2237757.29	2407826.84
Equity value	1819663.36	2146848.96	2312139.52
Value per share	868.16	1024.26	1103.12