



Using the Equity Residual Approach to Valuation: An Example (Abridged)

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Lina Wang, Matt Baker, Philippe Rio
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Executive Summary

Purpose

- Accomplish the valuation project of Whirlpool Corporation.
- Analyze the company's profitability and risk
- Create pro forma financial statements using the technique of historical statistical trend analysis
- Evaluate the common equity of Whirlpool based on the three models.
 - Dividend Model
 - Free Cash Flows Model
 - Residual Income Model

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Valuation Assumptions:

- Obtained five years of Whirlpool Financial Statements from 2009 to 2013 from Mergent Online- OU Library
- Took monthly market stock prices of Whirlpool and S&P 500 from December 2008 until December 2013 from Yahoo finance.com
- Profitability and risk analysis are based from the FSAP template.
- Two correlated input variables for simulation purposes are (Adj. MATT)¹⁰
- Three valuation models are based on the beta value and cost of equity we calculated from Whirlpool and S & P 500 stock price returns.
- We assumed the Risk Free rate is 2% and the Market Risk premium is 1%

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Company Background

- Started in 1908 by Lou Upton for manufacturing household equipment in Michigan
- 1929: Merged with 19th Hundred Washer Company in New York and grew steadily in spite of Great Depression in the 1930s; experimenting with new products at the same time.
- Leading manufacturer and marketer of major home appliances
- During WWII, factories were modified to provide aircraft and military equipment for the war effort; in summer of 1945, they began producing washers again, which began a period of explosive growth.
- 1945: First automatic washer and electric dryer were commercially available.
- 1949: Company changed name to Whirlpool Corporation.
- 1970s: Expanded product markets and introduced innovative products that performed more efficiently.
- 2003: Became world's first appliance manufacturer to announce a global greenhouse gas target.
- 2006: Acquired Maytag Corporation to offer more to consumers in the Global marketplace.
- 2011: 19 Billion revenue,
- Popular market brands worldwide:
- Whirlpool, Maytag, KitchenAid, Jenn-Air, Amana, Brastemp, Consul, Bauknecht and other major brands in nearly every country around the world.

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Ratio Analysis

Risk Factors:

Liquidity ratios are used to help measure a company's ability to repay its short-term debt and meet its current obligations as well as its cash needs.

- Average current ratio = 1.094
- Quick ratio = .546

FIGURE 1: WHIRLPOOL'S LIQUIDITY RATIOS

Year	2009	2010	2011	2012	2013
Current Ratio	1.28	1.11	1.02	1.02	1.01
Quick Ratio	0.55	0.57	0.55	0.49	0.58
Operating Cash flow to Current Liabilities	26.5%	17.8%	8.2%	10.9%	10.5%

Solvency ratios are used to measure a company's ability to meet its long-term obligations and whether or not the company will be able to continue this.

- Average total assets/ total liabilities = 71.68%
- Average total liabilities / shareholder's equity = 255.64%
- Long-term debt / long-term capital ratio = 33.52%
- Long-term debt / shareholder's equity = 32.9%

FIGURE 2: WHIRLPOOL'S SOLVENCY RATIOS

Year	2009	2010	2011	2012	2013
Total Liabilities / Total Assets	73.4%	72.2%	71.8%	71.6%	67.6%
Total Liabilities / Shareholders' Equity	301.4%	280.7%	251.7%	252.6%	208.8%
L.T. Debt / LT Capital	65.2%	57.7%	57.7%	50.8%	29.8%
L.T. Debt / Shareholders' Equity	66.5%	59.8%	49.7%	44.5%	30.1%
Operating Cash flow to Total Liabilities	14.7%	9.5%	4.3%	6.5%	11.7%
Interest Coverage Ratio (reported earnings)	2.24	3.62	0.87	2.80	6.18
Interest Coverage ratio (adjusted earnings)	2.24	3.62	0.87	2.80	6.18

Profitability

Profitability ratios are used to measure a company's operating efficiency and show its ability to generate income and cash flows. This in turn helps a company obtain debt and equity financing.

- Average return on Assets= 4.42%
- Average return on equity=12.8%
- Overall profit margin=3.66%
- Average days receivables held= 45 days
- Average days inventory turnover=57.4 days

FIGURE 3: WHIRLPOOL'S PROFITABILITY RATIOS

Year	2009	2010	2011	2012	2013
RETURN ON ASSETS (based on reported earnings)					
Profit Margin for ROA	5.9%	4.3%	5.9%	5.1%	5.1%
Assets Turnover	1.2	1.2	1.2	1.2	1.2
Return on Assets	7.7%	5.2%	7.6%	6.0%	6.2%
RETURN ON COMMON EQUITY (based on reported earnings)					
Profit Margin for ROCE	2.1%	3.5%	2.2%	2.3%	4.2%
Assets Turnover	1.2	1.2	1.2	1.2	1.2
Capital Structure Leverage	4.2	3.8	3.6	3.5	3.3
Return on Common Equity	10.5%	16.1%	9.5%	9.9%	18.1%

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Beta and Cost of Equity

Monthly stock price from December 2008 to December 2013 for Whirlpool and S&P 500---> Returns

- Beta-Equity risk factor (market beta) 2.11
- Risk free rate 2.0%
- Market risk premium 1.0%
- Required rate of return on common equity: 3.46%

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Pro Forma

Average between the current period being reported 2013 and the previous period being reported 2012 to apply the average variables to the future periods-Historical statistical trend analysis

	Actuals			Forecasts				
	2011	2012	2013	2014	2015	2016	2017	2018
INCOME STATEMENT								
Revenues	18,666,000	18,143,000	18,769,000	18,829,857	19,185,233	19,397,378	19,687,667	19,943,834
common size	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
rate of change		-2.8%	3.5%	0.3%	1.9%	1.1%	1.5%	1.3%
Cost of Goods Sold	16,089,000	15,250,000	15,471,000	15,179,715	15,146,805	14,987,795	14,892,878	14,767,548
common size	86.2%	84.1%	82.4%	80.6%	79.0%	77.3%	75.6%	74.0%
rate of change		-5.2%	1.4%	-1.9%	-0.2%	-1.0%	-0.6%	-0.8%
Gross Profit	2,577,000	2,893,000	3,298,000	3,650,142	4,038,428	4,409,583	4,794,789	5,176,286
common size	13.8%	15.9%	17.6%	19.4%	21.0%	22.7%	24.4%	26.0%
rate of change		12.3%	14.0%	10.7%	10.6%	9.2%	8.7%	8.0%
Selling, General and Admin. Expense	-1,621,000	-1,757,000	-1,828,000	-1,941,618	-2,041,188	-2,156,961	-2,273,437	-2,399,292
common size	-8.7%	-9.7%	-9.7%	-10.3%	-10.6%	-11.1%	-11.5%	-12.0%
rate of change		8.4%	4.0%	6.2%	5.1%	5.7%	5.4%	5.5%
Intangible Amortization Expense	-28,000	-30,000	-25,000	-23,810	-21,259	-19,614	-17,804	-16,294
common size	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
rate of change		7.1%	-16.7%	-4.8%	-10.7%	-7.7%	-9.2%	-8.5%
Restructuring Cost	-136,000	-237,000	-196,000	-251,826	-265,907	-311,209	-346,420	-395,528
common size	-0.7%	-1.3%	-1.0%	-1.3%	-1.4%	-1.6%	-1.8%	-2.0%
rate of change		74.3%	-17.3%	28.5%	5.6%	17.0%	11.3%	14.2%

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