An Investment Analysis Case Study: The Home Depot

This case is a group project that is due on March 29 before 10.30 am

Stating the obvious: Each group will turn in one report (sounds obvious, but might as well make it explicit) **electronically (as a pdf file).** While you should include your cash flows tables in your report, you don't have to attach any excel spreadsheets.

Cover page: Each report should have a cover page that contains the following – the names of the group members in alphabetical order and the following summary information on the analysis:

1. Decision on Investment: Invest or Do not invest
2. Cost of capital: % value
3. Return on capital: % value
4. NPV – 15-year life: $ value
5. NPV- Longer life: $ value

Report format: Please try to keep your report brief. In the report, be clear about:

a. Any assumptions you made to get to your conclusion
b. Your final recommendation

Exhibits: Please make sure that you include the following in your exhibits

a. The table of earnings/cash flows by year, <u>with line item details</u>.
b. Your computation of cost of equity/capital/discount rate

Time: To keep time straight, you can assume the following:

Next year: Year 1

Most recent year: Just ended

Right now: Time 0. Any "up front" expenditure is incurred immediately.

Home Depot Furniture

The Home Depot has had a good run, with its stock price almost tripling over the last five years and its income posting significant increases during the period. However, as a company that is almost entirely in the building supplies retail business in the United States, it faces a saturated market, and future growth is expected to slow significantly. Exhibit 1A summarizes The Home Depot's income statement for the most recent financial year, and Exhibit 1B summarizes its balance sheet for the last year and Exhibit 1C summarizes when the debt comes due (with an average maturity).

The Home Depot is considering expanding into the furniture business (Home Furniture), making and selling high-priced furniture to homeowners and plans to open stores globally. You have been asked to collect the data to make the assessment and have come back with the following information:

1. Starting Investment: To get established in the furniture business, The Home Depot will spend $ 1 billion immediately to acquire interests in a number of furniture manufacturers in North Carolina. This investment will be depreciated over ten years, using straight line depreciation, starting in year 3.
2. Close, revamp & reopen – The Recycled stores: The first Home Furniture stores are expected to be operational at the beginning of year 3. To accommodate this schedule, the Home Depot will spend $ 500 million over the next two years - $ 250 million at the end of each year - converting 50 existing US Home Depot store sites into Home Furniture Stores. This investment will be capitalized and depreciated over ten years, using straight-line depreciation as well, starting in year 3. The Home Depot stores chosen for conversion have been poorly performing stores; they have a current book value of $ 250 million (depreciable over 5 years using straight line depreciation), and are expected to each generate, on average, $ 1 million in after-tax operating income each year for the next 10 years if they remain as traditional Home Depot stores.
3. New Stores: Starting in year 4, the Home Depot plans to open ten new furniture stores at the beginning of each year for ten years (Years 4-13). The cost of opening a store is expected to be $ 15 million in year 4, and grow at the inflation rate beyond that. Like the other capital investments, these expenses will be depreciated using straight-line depreciation over ten years, starting the year of each investment. Home Depot is

planning to open 40% of these new stores in the United States, but the remaining 60% will be in other countries, with the following mix for the 100 new stores that will be opened between years 4-13.

Region	*Number of new stores*
United States	40
Western Europe	20
Asia	30
Latin America	10
Total	**100**

For the rest of the case, the revenues and expenses at non-US stores will be converted into and presented in US dollar terms.

4. Market Testing: You have employed a major market-testing organization to do a market study. Their initial study, which has already been completed, cost $ 250 million and has provided you with a sense of the magnitude of this market, and The Home Depot's potential in the market. This market testing cost has already been expensed.
5. Store Economics: Each of the stores in the first year of operations (year 3) is expected to generate $ 40 million in revenues, and these per-store revenues are expected to grow at the inflation rate (which is 2%). Starting in year 4, the new stores (see item 3) will match the existing stores in per-store revenues. (There will be 50 stores generating $ 40 million in revenues each in year 3 (Total revenue = $ 2 billion), 60 stores generating $ 40.8 million in revenues each in year 4 (Total revenues = $2.448 billion), 70 stores generating $ 41.62 million each in year 5….) After year 13, the growth in revenues per store will continue to track the inflation rate.
6. Profit Margins: The pre-tax gross profit margins (prior to depreciation, advertising expenses and allocations of corporate costs) are expected to be 20% of revenues.
7. Allocated costs: The Home Depot will allocate 10% of its existing G&A costs to the new division, starting in year 3. These costs now total $500 million for the entire firm and are expected to grow 5% a year in the long term. Specific to this project, it is expected that the Home Depot will have an increase of $ 25 million in general and administrative costs in year 3 when the new division starts generating revenues, and that this amount will grow with the new division's revenues after that.

8. Infrastructure Needs: While the new business will need distributional support, it is anticipated that the Home Depot can use excess capacity in its existing distribution network. The existing building supplies business is currently using 55% of the distribution capacity, and revenues from the business are growing 5% a year (it will use 57.75% next year, 60.64% the year after and so on..). The furniture business will use 20% of the capacity in year 3 (which is the first year of revenue generation) and its usage will track revenue growth beyond that point. When the Home Depot runs out of distribution capacity, it will have to pay for an expansion of the distribution network. This is a major endeavor and will cost a substantial amount. (The current estimate of the cost of expansion is $ 500 million, but this cost will grow at the inflation rate. You can assume that investment in distribution capacity is also depreciated straight line over 10 years)
9. Advertising: The Home Depot spent $ 1 billion in advertising expenses in the most recent year and expects these expenses to grow 2% a year for the next 15 years, if the furniture division is not created. If the furniture division is added to the company, the total advertising costs will be 15% higher than they would have been without the furniture division each year from year 3 (the first year of sales for the division) for as long as the furniture division is in operation.[1]
10. Working Capital: The furniture division will create working capital needs, which you have estimated as follows:
    - The sale of furniture on credit to customers will create accounts receivable amounting to 10% of revenues each year.
    - Inventory (of furniture) will be approximately 10% of the cost of goods sold (not including depreciation, allocations or advertising expenses).
    - The credit offered by suppliers will be 5% of the cost of goods sold (not including depreciation, allocations or advertising expenses).

[1] For instance, if you have $1.2 billion in year 3 and $1.25 billion in advertising expenses in year 4 without the furniture division, the advertising expenses will be $1.38 billion in year 3 (15% higher than $1.2 billion) and $143.75 billion (15% higher than $1.25 billion) in year 4 if you take the furniture project.

All of these working capital investments will have to be made at the beginning of each year in which goods are sold. Thus, the working capital investment for the third year will have to be made at the beginning of the third year.

11. Side Benefits: If the Home Depot opens the furniture stores, there is the potential for a spill over benefits with its US stores, where customers from the furniture stores increasing sales at the Home Depot's building supply stores. The Home Depot expects to generate about $100 million in additional revenues at its building supply stores in the US in year 3, growing at the inflation rate for as long as the furniture stores continue in operation. The Home Depot expects to generate the same pre-tax operating margin on these revenues as it did on all of its revenues in the fiscal year ended January 2017 (in Exhibit IA).
12. Risk Measures: The beta for the Home Depot is 1.08, calculated using weekly returns over the last 2 years and against the S&P 500 Index; you can assume that this is an adequate measure of the risk in Home Depot's current operating and financial risk exposure. The details of the beta calculation are included in Exhibit 2A and the top holders of shares in the Home Depot are listed in Exhibit 2B. The Home Depot currently is rated BBB+, and BBB+ rated bonds trade at a default spread of 1.5% over the long-term treasury bond rate. The firm also has operating lease commitments that are summarized in the table below (next year is year 1, two years from now is year 2 etc…):

Year	Lease Commitment
Most recent year	$922
1 (next year)	$868
2	$804
3	$708
4	$624
5	$543
Beyond year 5	$3,547

The current stock price for the firm is $145.00 and there are 1,220 million shares outstanding. The Home Depot expects to finance the furniture division using the same mix of debt (with operating leases considered as debt) and equity (in market value terms) as it is using currently in the rest of its business.

13. Taxes: The Home Depot's effective tax rate in 2016 was 36% but the marginal tax rate is 40%.

14. Macro Data on Rates and ERP: The current 3 month T.Bill rate is 0.5%, the 10-year US treasury bond rate is 2.5%, and the expected inflation rate in US dollars is 2%. The equity risk premium for the US is 5.69% but you are provided with a breakdown of regional equity risk premiums in the table below:

Region	*Equity Risk Premium*
Africa	12.00%
Asia	7.12%
Australia & New Zealand	5.70%
Caribbean	13.92%
Latin America	10.21%
Eastern Europe & Russia	9.09%
Middle East	7.50%
North America (US & Canada)	5.69%
Western Europe	6.81%

15. You have collected information on other furniture retailers in Exhibit 3. The data includes the betas of these companies, their market values for debt (including operating leases) and equity, annual revenues and operating income.

Questions on the Project

1. **Accounting Return Analysis**
    - Estimate the operating income from the proposed investment to the Home Depot over the next 15 years.
    - Estimate the after-tax return on capital for the operating portion of this period (Years 3-15)
    - Based upon the after-tax return on capital, would you accept or reject this project?

    This will require you to make some assumptions about allocation and expensing. Make your assumptions as consistent as you can and estimate the return on capital.
2. **Cash Flow Analysis**
    - Estimate the after-tax incremental cash flows from the proposed investment to the Home Depot over the next 15 years.
    - If the project is terminated at the end of the 15th year, and both working capital and investment in other assets can be sold for book value at the end of that year, estimate the net present value of this project to the Home Depot. Develop a net present value profile and estimate the internal rate of return for this project.
    - If the furniture division is expected to have a life much longer than 15 years, estimate the net present value of this project, making reasonable and consistent assumptions about investments and cash flows after year 15. Develop a net present value profile and estimate the internal rate of return for this project.

Based upon your analysis, and any other considerations you might have, tell me whether you would accept this project or reject it. Explain, briefly, your decision.

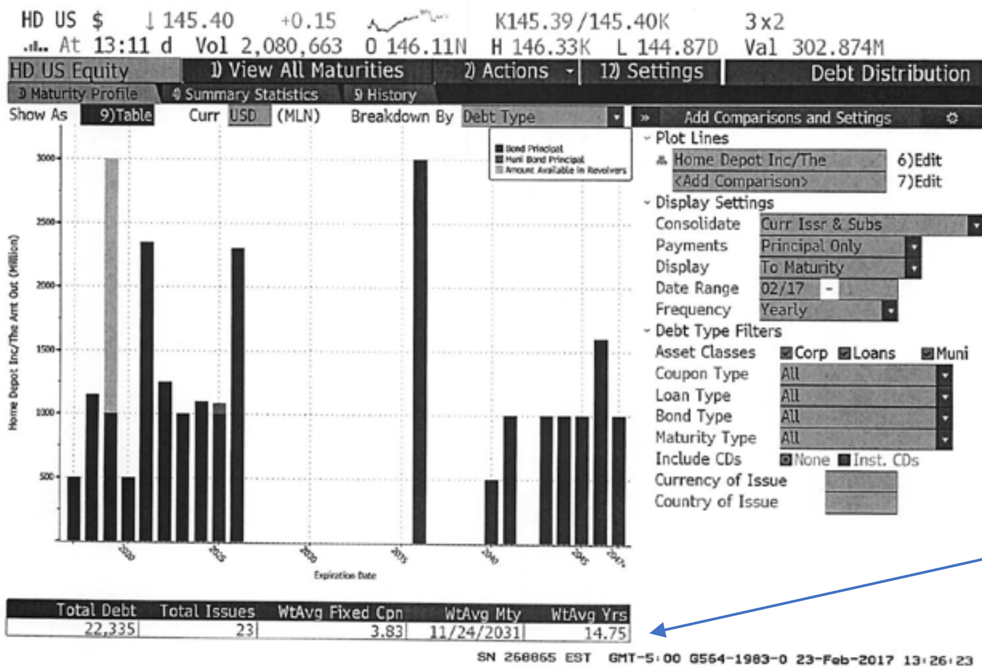
Exhibit 1A: Income Statements for the Home Depot: Last year

	Fiscal year ending					
	Jan-12	**Jan-13**	**Jan-14**	**Jan-15**	**Jan-16**	**Jan-17**
Revenue	**$70,395**	**$74,754**	**$78,812**	**$83,176**	**$88,519**	**$94,595**
Cost of Goods Sold	$46,133	$48,912	$51,897	$54,787	$58,254	$62,282
Gross Profit	**$24,262**	**$25,842**	**$26,915**	**$28,389**	**$30,265**	**$32,313**
Selling General & Admin Exp.	$16,028	$16,373	$16,122	$16,280	$16,871	$17,132
Depreciation & Amort.	$1,573	$1,568	$1,627	$1,640	$1,690	$1,754
Operating Income	**$6,661**	**$7,901**	**$9,166**	**$10,469**	**$11,704**	**$13,427**
Interest Expense	$606	$632	$711	$830	$919	$972
Interest and Invest. Income	$13	$20	$12	$337	$166	$36
EBT Excl. Unusual Items	**$6,068**	**$7,289**	**$8,467**	**$9,976**	**$10,951**	**$12,491**
Impairment of Goodwill	-	-$97	-	-	-	-
Insurance Settlements	-	-	-	-	$70	-
Other Unusual Items	-	$29	-	-	-	-
EBT Incl. Unusual Items	**$6,068**	**$7,221**	**$8,467**	**$9,976**	**$11,021**	**$12,491**
Income Tax Expense	$2,185	$2,686	$3,082	$3,631	$4,012	$4,534
Net Income to Company	**$3,883**	**$4,535**	**$5,385**	**$6,345**	**$7,009**	**$7,957**

Exhibit 1B: Balance Sheet – The Home Depot – Last year

	Fiscal year ending				
	Jan-12	**Jan-13**	**Jan-14**	**Jan-15**	**Jan-16**
ASSETS					
Cash and Equivalents	$1,987	$2,494	$1,929	$1,723	$2,225
Accounts Receivable	$1,245	$1,395	$1,398	$1,484	$1,890
Inventory	$10,325	$10,710	$11,057	$11,079	$11,809
Other Current Assets	$963	$773	$895	$1,016	$1,069
Total Current Assets	$14,520	$15,372	$15,279	$15,302	$16,993
Net Property, Plant & Equipment	$24,448	$24,069	$23,348	$22,720	$22,191
Long-term Investments	-	-	-	-	$34
Goodwill	$1,120	$1,170	$1,289	$1,353	$2,102
Other Intangibles	$135	-	-	-	$563
Deferred Tax Assets, LT	$25	$30	$49	$51	$48
Other Long-Term Assets	$270	$443	$553	$520	$618
Total Assets	$40,518	$41,084	$40,518	$39,946	$42,549
LIABILITIES					
Accounts Payable	$4,856	$5,376	$5,797	$5,807	$6,565
Accrued Exp.	$3,317	$3,471	$3,568	$3,630	$3,932
Short-term Borrowings	-	-	-	$290	$350
Curr. Port. of LT Debt	$30	$1,321	$33	$38	$37
Curr. Port. of Cap. Leases	-	-	-	-	$40
Curr. Income Taxes Payable	$23	$22	$12	$35	$34
Unearned Revenue, Current	$1,150	$1,272	$1,339	$1,519	$1,568
Total Current Liabilities	$9,376	$11,462	$10,749	$11,269	$12,526
Long-Term Debt	$10,758	$9,475	$14,691	$16,869	$20,247
Capital Leases	-	-	-	-	$723
Def. Tax Liability, Non-Curr.	$340	$319	$514	$642	$854
Other Non-Current Liabilities	$2,146	$2,051	$2,042	$1,844	$1,883
Total Liabilities	$22,620	$23,307	$27,996	$30,624	$36,233
Common Stock	$87	$88	$88	$88	$88
Additional Paid In Capital	$6,966	$7,948	$8,402	$8,885	$9,347
Retained Earnings	$17,246	$20,038	$23,180	$26,995	$30,973
Treasury Stock	-$6,694	-$10,694	-$19,194	-$26,194	-$33,194
Comprehensive Inc. and Other	$293	$397	$46	-$452	-$898
Total Common Equity	$17,898	$17,777	$12,522	$9,322	$6,316
Total Liabilities And Equity	$40,518	$41,084	$40,518	$39,946	$42,549

Exhibit 1C: Debt Maturity



Debt Maturity

Exhibit 2A: Beta Calculation for the Home Depot

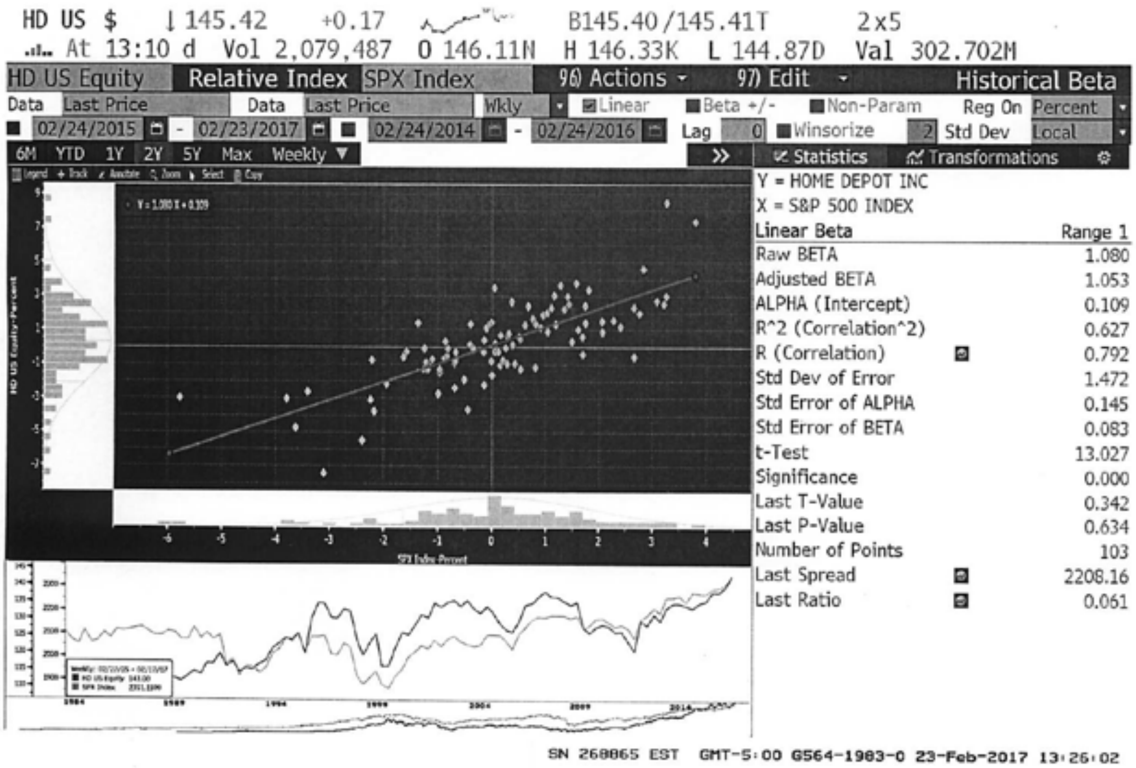


Exhibit 2B: Holdings Analysis

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HD US Equity | 25) Export | 26) Settings | Security Ownership

HOME D[illegible] INC CUSIP 43707610

1) Current | 2) Historical | 3) Matrix | 4) Ownership Summary | 5) Insider Transactions | 6) Options

Search Name: All Holders, Sorted by Size | 21) Save Search | 22) Delete Search | 23) Refine Search

Text Search | Holder Group: All Holders | Allocate Multi-Managed

24) Color Legend | Shrs Out 1,218.2M | % Out 76.18 | % Float 99.89 | SI % Out 0.69

Holder Name	Portfolio Name	Source	Opt	Position↑	% Out	Latest Chg	File Dt
		All	All				
1. CAPITAL GROUP COMPANIES I	Multiple Portfolios	13F		103,459,565	8.49	-5,572,727	12/31/16
2. BLACKROCK		13G		78,329,405	6.43	0	12/31/16
3. VANGUARD GROUP		ULT-AGG		77,162,511	6.33	399,472	12/31/16
4. STATE STREET CORP		ULT-AGG		55,351,612	4.54	1,843,830	12/31/16
5. FMR LLC		ULT-AGG		33,909,906	2.78	-3,470,858	12/31/16
6. JPMORGAN CHASE & CO		ULT-AGG	Y	26,151,276	2.15	1,637,950	01/31/17
7. BANK OF AMERICA CORPORATI	BANK OF AMERICA	13F	Y	19,745,248	1.62	630,699	12/31/16
8. T ROWE PRICE GROUP INC		ULT-AGG		18,316,306	1.50	8,308,531	01/31/17
9. NORTHERN TRUST CORPORATI	NORTHERN TRUST CORPO	13F		17,402,203	1.43	-804,698	12/31/16
10. BNY MELLON		ULT-AGG		15,362,409	1.26	-105,009	12/31/16
11. TIAA-CREF		ULT-AGG		15,002,648	1.23	2,216,372	12/31/16
12. UBS		ULT-AGG	Y	13,771,279	1.13	-970,827	01/31/17
13. WELLS FARGO & COMPANY		ULT-AGG	Y	13,095,226	1.07	-184,037	12/31/16
14. GEODE CAPITAL MANAGEMENT	GEODE CAPITAL MANAGEM	13F		11,466,877	0.94	351,803	12/31/16
15. NORGES BANK	NORGES BANK	13F		11,341,516	0.93	239,460	12/31/15
16. JANUS CAPITAL MANAGEMENT		ULT-AGG		10,968,498	0.90	2,754,905	12/31/16
17. GOVMT PENSION INVST FUND	Multiple Portfolios	MF-AGG		9,811,968	0.81	0	03/31/16
18. MORGAN STANLEY		ULT-AGG		8,693,429	0.71	704,695	12/31/16
19. FISHER ASSET MANAGEMENT L	FISHER ASSET MANAGEME	13F		8,541,556	0.70	61,041	12/31/16
20. AMERIPRISE FIN GRP		ULT-AGG		8,540,900	0.70	-102,138	12/31/16
21. ALLIANCE BERNSTEIN		ULT-AGG		8,120,618	0.67	-1,941,064	12/31/16
22. WELLINGTON MANAGEMENT GR	WELLINGTON MANAGEMEN	13F		7,832,471	0.64	-765,378	12/31/16

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Comparable Company Data

Company Name	Regression Beta	Total Debt	Market Cap	Cash	Revenues	Operating Income
Mohawk Industries, Inc.	1.18	$2,511.50	$16,690.90	$121.70	$8,959.10	$1,279.90
Leggett & Platt, Incorporated	1.10	$959.80	$6,552.10	$281.90	$3,749.90	$482.50
Tempur Sealy International, Inc.	1.39	$1,888.10	$2,529.10	$65.70	$3,127.30	$404.30
La-Z-Boy Incorporated	1.34	$0.59	$1,386.40	$126.00	$1,524.40	$122.60
Ethan Allen Interiors Inc.	1.28	$40.30	$797.50	$57.10	$784.20	$77.20
Flexsteel Industries, Inc.	1.82	$0.00	$412.70	$40.80	$478.70	$34.10
Hooker Furniture Corporation	0.86	$49.00	$383.60	$43.10	$463.90	$31.00
Bassett Furniture Industries, Inc.	1.23	$7.11	$293.80	$58.30	$432.00	$28.20
The Dixie Group, Inc.	1.18	$122.10	$54.10	$0.09	$402.60	$3.71
Nova Lifestyle, Inc.	0.99	$8.03	$48.20	$5.84	$114.80	$1.06
Live Ventures Incorporated	1.49	$75.50	$33.10	$1.59	$91.00	$5.30
Stanley Furniture Company, Inc	1.32	$0.00	$11.90	$4.21	$44.60	-$5.57