



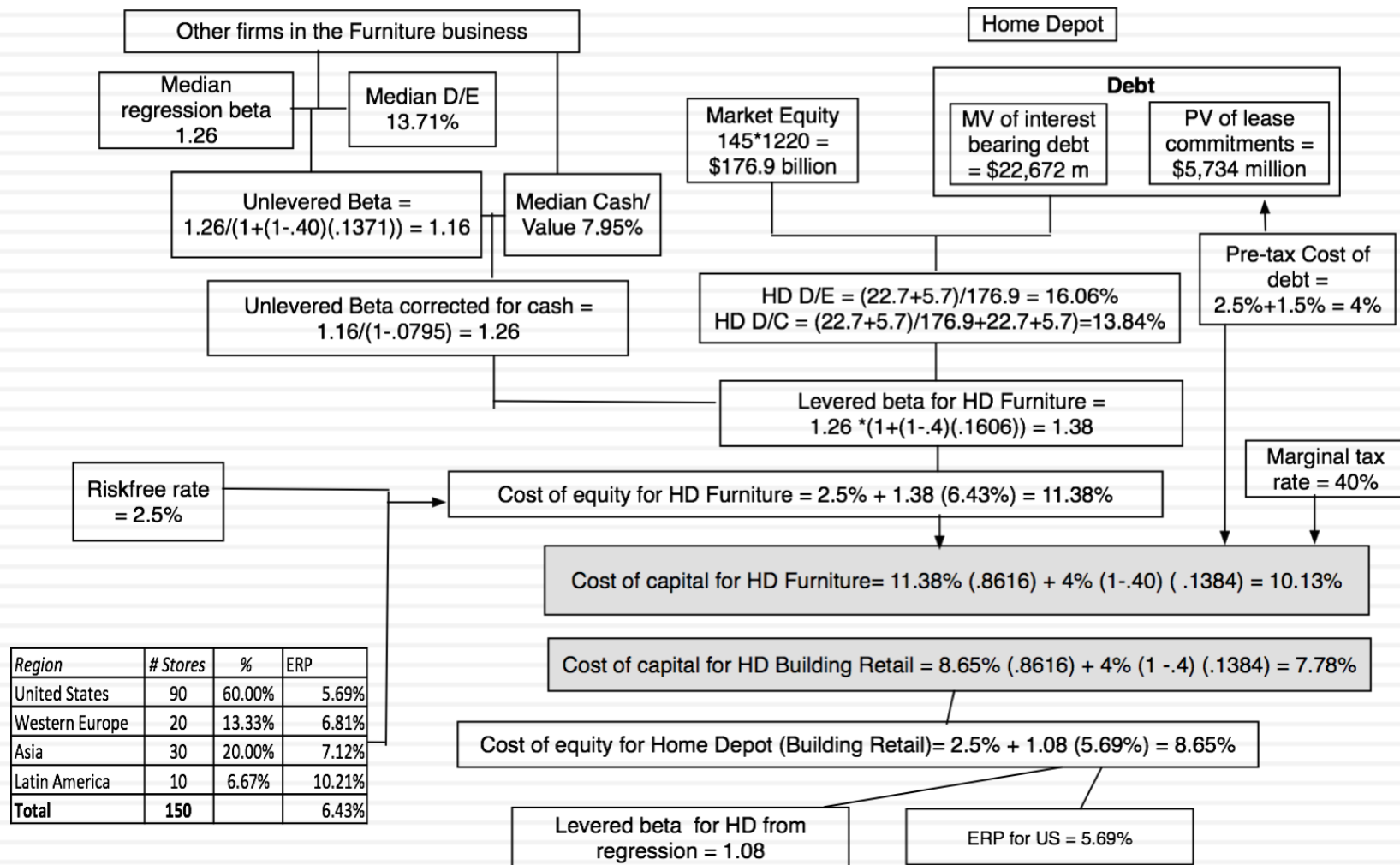
THE HOME DEPOT FURNITURE STORES INVESTMENT ANALYSIS

Aswath Damodaran

Summary of Conclusions

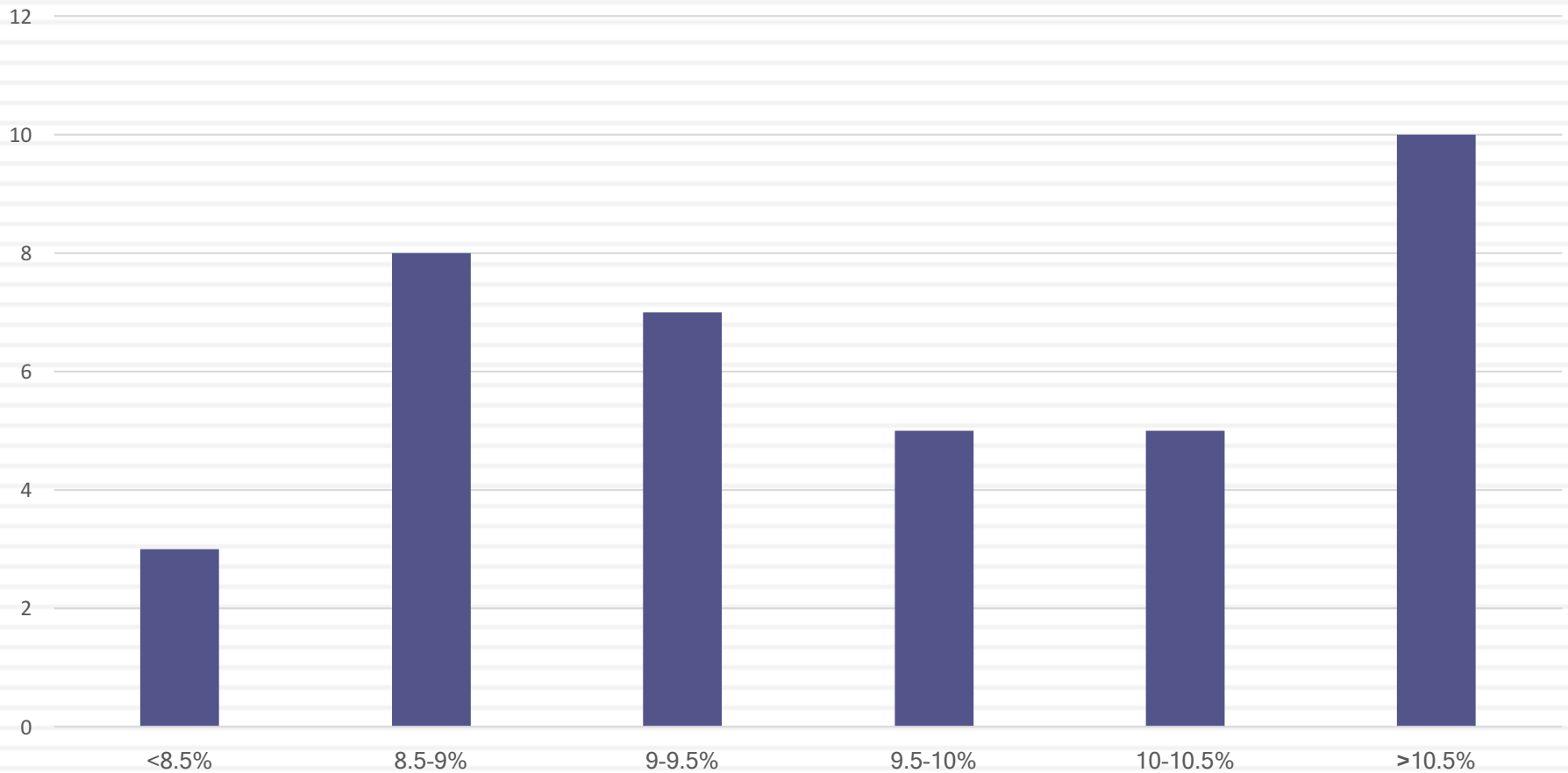
- Based upon the riskiness of this project and Home Depot's debt to equity ratio of 16%, the beta for this project is 1.39, the cost of equity is 11.38% and the cost of capital is 10.13%.
- From an accounting return standpoint, the return on capital computed using the average operating income and capital invested over the period is 14-18%, depending on what you include in book value.
- The net present value of just the cash flows on the project, discounted at 10.13%
 - *is \$109 million, for a finite life of 15 years and without counting synergy.*
 - *is \$123 million, under the assumption of an infinite life, with higher capital expenditures during the project life, without counting synergy.*
- There are two side effects to HD's US building supply stores, one negative (loss of sales at closed stores) and one positive (increased sales at other stores). The value of the cash flows, discounted at the HD's cost of capital of 7.78% is \$-\$274 million in the finite life case and -\$213 million in the longer life case, making NPV negative in both cases.
- I would recommend rejecting the project, because the net present value is negative. The one redeeming feature of the project is that the stores are open gradually, thus giving the Home Depot an option to consider whether to open the remaining stores, based upon existing store performance.

Cost of Capital Calculations



Cost of Capital: Your numbers

Cost of Capital for HD Furniture: Class Distribution

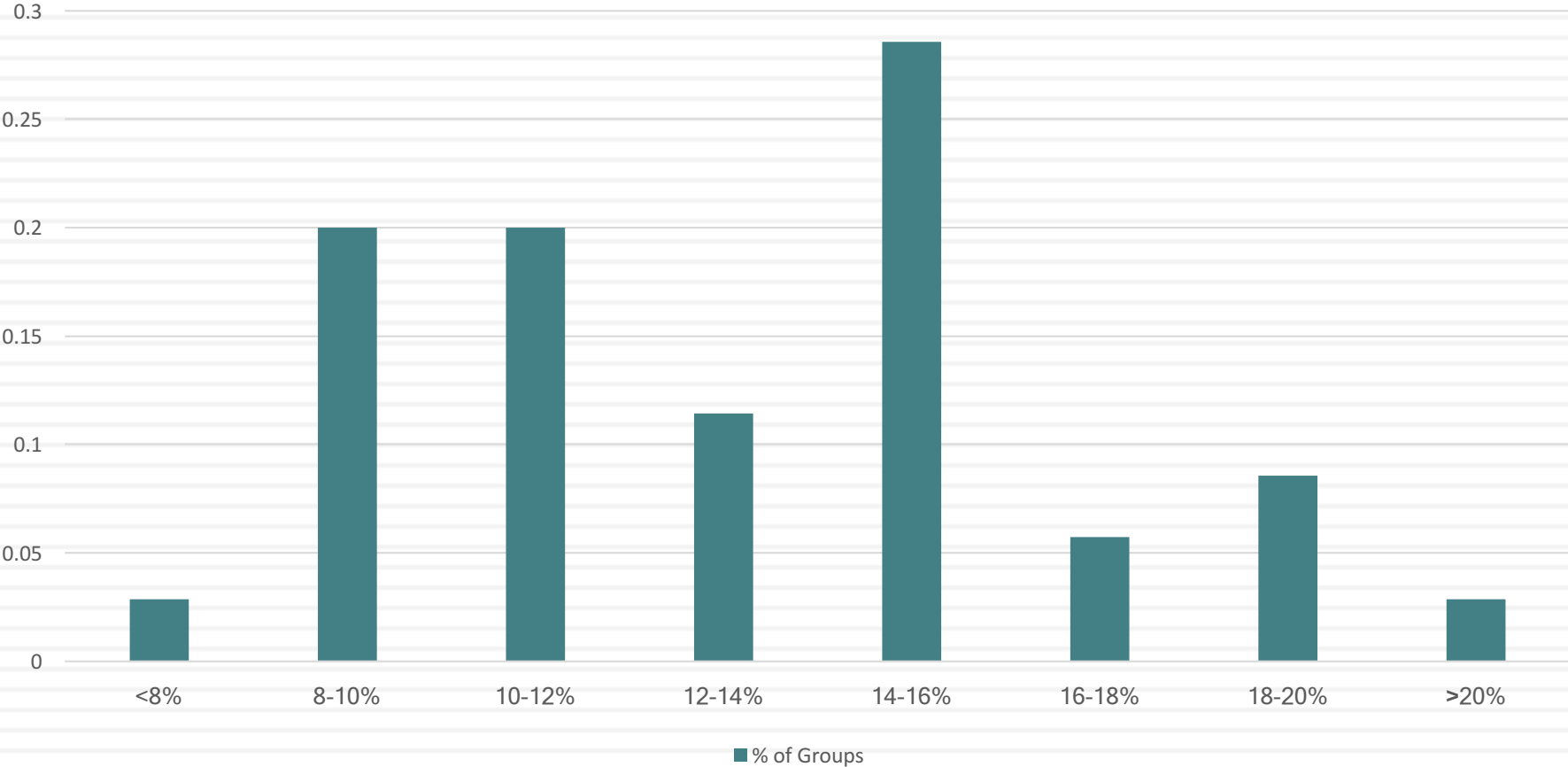


Return on Capital Computation

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Sum
Beginning BV	\$0	\$1,000	\$1,250	\$1,500	\$1,780	\$1,831	\$1,872	\$1,847	\$1,813	\$1,768	\$1,712	\$1,646	\$1,569	\$1,481	\$1,412	\$1,291	
+ Capital Exp	\$1,000	\$250	\$250	\$150	\$153	\$156	\$159	\$162	\$166	\$169	\$172	\$176	\$179	\$-	\$-	\$-	
- Depreciation	\$0	\$-	\$-	\$150	\$165	\$180	\$251	\$267	\$283	\$300	\$317	\$334	\$352	\$156	\$141	\$126	
+ Investment in WC	\$0	\$-	\$-	\$280.00	\$62.72	\$65.12	\$67.58	\$70.12	\$72.74	\$75.43	\$78.20	\$81.05	\$83.98	\$87.00	\$20.48	\$20.89	
Ending BV	\$1,000	\$1,250	\$1,500	\$1,780	\$1,831	\$1,872	\$1,847	\$1,813	\$1,768	\$1,712	\$1,646	\$1,569	\$1,481	\$1,412	\$1,291	\$1,186	\$21,207
Average BV	\$500	\$1,125	\$1,375	\$1,640	\$1,805	\$1,851	\$1,859	\$1,830	\$1,790	\$1,740	\$1,679	\$1,608	\$1,525	\$1,446	\$1,351	\$1,239	\$21,364
EBIT(1-t)		\$0	\$0	\$5	\$43	\$82	\$90	\$133	\$177	\$223	\$272	\$322	\$374	\$556	\$577	\$597	\$3,449
ROC w/o synergy				0.29%	2.35%	4.42%	4.83%	7.24%	9.89%	12.84%	16.18%	20.02%	24.53%	38.46%	42.66%	48.21%	16.15%
	With Synergy Benefits built in																
Synergy EBIT (1-t)	\$-	\$-	\$-	\$9	\$9	\$9	\$9	\$9	\$9	\$10	\$10	\$10	\$10	\$10	\$11	\$11	\$125
EBIT(1-t) w/ synergy	\$-	\$-	\$-	\$13	\$51	\$91	\$99	\$142	\$187	\$233	\$281	\$332	\$384	\$567	\$587	\$608	\$3,574
ROC w/synergy				0.81%	2.84%	4.90%	5.32%	7.75%	10.42%	13.39%	16.76%	20.64%	25.19%	39.18%	43.44%	49.08%	18.44%

Your findings: Return on Capital

Return on Capital for HD Furniture: Class Distribution



Finite Life case assumptions

□ Incremental Effects

- The depreciation on the existing stores of \$ 50 million a year for the next 5 years is ignored for purposes of cash flow computation, since it is non-incremental.
- When analyzing the cost of the distribution system, we consider the cost of the system in year 5 (\$ 552 million) but we show the savings in year 12 (\$ 634 million). Similarly, for depreciation, we show the depreciation on the existing system of \$ 55 million from year 6-12, but show the differential depreciation between the two systems (-\$8 million) in years 13-15.
- Since we are planning on wrapping up the business in 15 years, there is no need for significant capital maintenance expenditures.
- Both working capital investments and store investments are assumed to occur at the start of the year and are therefore shown at the end of the previous year.

Incremental Cash Flows - Finite Life

Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of Stores	-	-	-	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	150.00	150.00
Revenues per Store	\$-	\$-	\$-	\$40.00	\$40.80	\$41.62	\$42.45	\$43.30	\$44.16	\$45.05	\$45.95	\$46.87	\$47.80	\$48.76	\$49.73	\$50.73
Revenues		\$-	\$-	\$2,000	\$2,448	\$2,913	\$3,396	\$3,897	\$4,416	\$4,955	\$5,514	\$6,093	\$6,693	\$7,314	\$7,460	\$7,609
- Oper. Exp.		\$-	\$-	\$1,600	\$1,958	\$2,330	\$2,717	\$3,117	\$3,533	\$3,964	\$4,411	\$4,874	\$5,354	\$5,851	\$5,968	\$6,088
- Deprec'n		\$-	\$-	\$150	\$165	\$180	\$251	\$267	\$283	\$300	\$317	\$334	\$352	\$156	\$141	\$126
- Allocated & Incrm. G&A		\$-	\$-	\$83	\$91	\$100	\$109	\$119	\$129	\$140	\$150	\$162	\$173	\$186	\$192	\$199
- Advertising Exp.		\$-	\$-	\$159	\$162	\$166	\$169	\$172	\$176	\$179	\$183	\$187	\$190	\$194	\$198	\$202
EBIT		\$-	\$-	\$8	\$71	\$136	\$150	\$221	\$295	\$372	\$453	\$536	\$623	\$927	\$961	\$995
- Taxes		\$-	\$-	\$3	\$28	\$55	\$60	\$88	\$118	\$149	\$181	\$215	\$249	\$371	\$384	\$398
EBIT(1-t)		\$-	\$-	\$5	\$43	\$82	\$90	\$133	\$177	\$223	\$272	\$322	\$374	\$556	\$577	\$597
+ Deprec'n		\$-	\$-	\$150	\$165	\$180	\$251	\$267	\$283	\$300	\$317	\$334	\$352	\$156	\$141	\$126
+ Fixed Allocated Exp (1-t)		\$-	\$-	\$35	\$36	\$38	\$40	\$42	\$44	\$47	\$49	\$51	\$54	\$57	\$59	\$62
- Cap Ex	\$1,000	\$250	\$250	\$150	\$153	\$156	\$159	\$162	\$166	\$169	\$172	\$176	\$179	\$-	\$-	\$-
- Opp. Cost of Dist'n System		\$-	\$-	\$-	\$-	\$552	\$-	\$-	\$-	\$-	\$-	\$-	\$(634)	\$-	\$-	\$-
- Chg in WC		\$-	\$280	\$63	\$65	\$68	\$70	\$73	\$75	\$78	\$81	\$84	\$87	\$20	\$21	\$-
+ Salvage Value																\$1,548
Cashflows to the firm	\$(1,000)	\$(250)	\$(530)	\$(23)	\$26	\$(475)	\$152	\$207	\$264	\$323	\$384	\$447	\$1,147	\$748	\$756	\$2,333

The Side Effects on Home Depot US Stores

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Lost EBIT (1-t) on closed stores	\$0	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50	\$0	\$0	\$0	\$0	\$0
Synergy Revenues	\$0	\$0	\$0	\$100	\$102	\$104	\$106	\$108	\$110	\$113	\$115	\$117	\$120	\$122	\$124	\$127
Synergy Operating Income	\$0	\$0	\$0	\$14	\$14	\$15	\$15	\$15	\$16	\$16	\$16	\$17	\$17	\$17	\$18	\$18
Synergy Operating income after taxes	\$0	\$0	\$0	\$9	\$9	\$9	\$9	\$9	\$9	\$10	\$10	\$10	\$10	\$10	\$11	\$11
Operating Income net effect	\$0	-\$50	-\$50	-\$41	-\$41	-\$41	-\$41	-\$41	-\$41	-\$40	-\$40	\$10	\$10	\$10	\$11	\$11

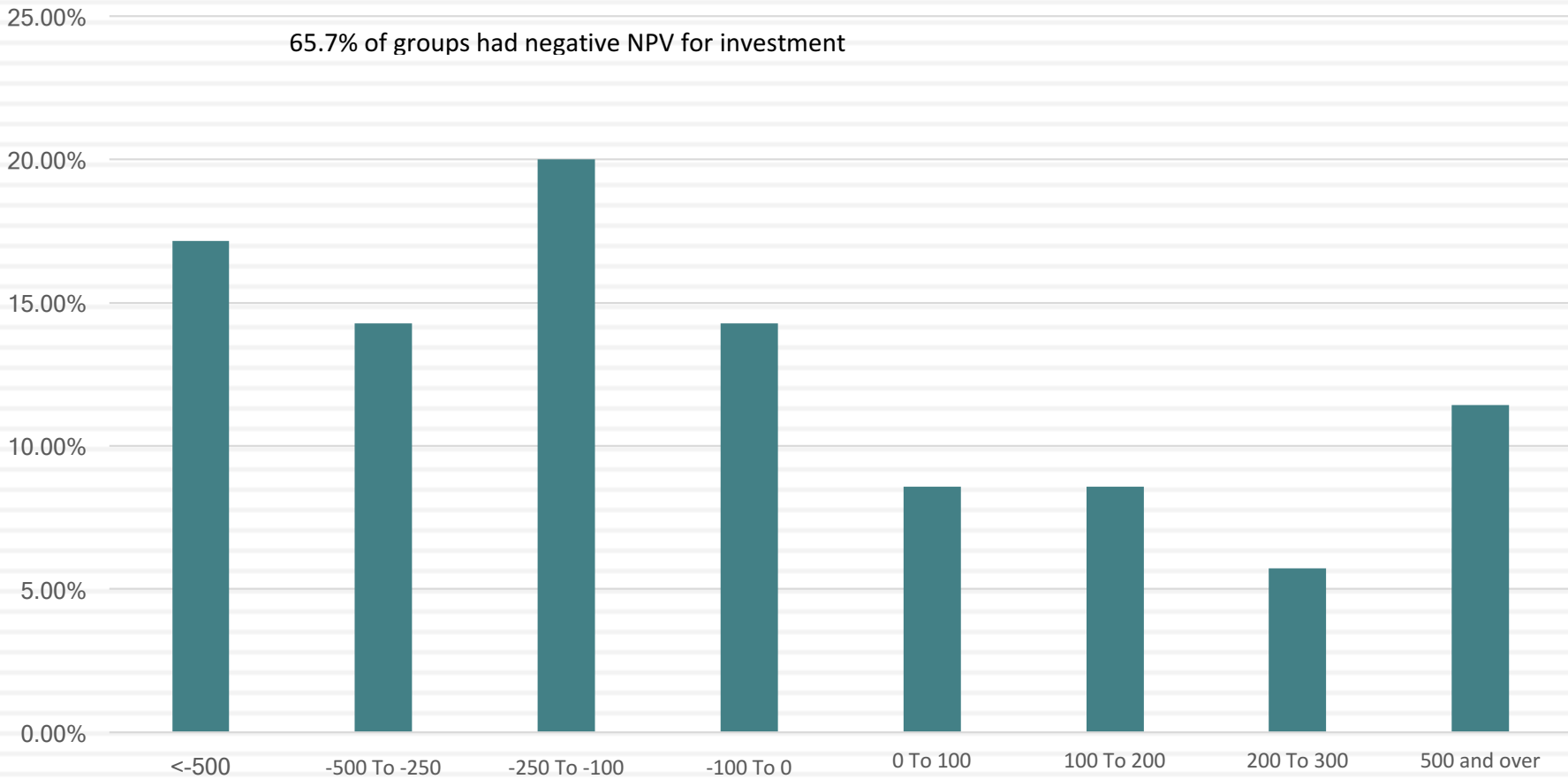
The Value Effect: NPV

Project Cash Flows																
Incremental Cash Flows	-\$1,000	-\$250	-\$530	-\$23	\$26	-\$475	\$152	\$207	\$264	\$323	\$384	\$447	\$1,147	\$748	\$756	\$2,333
PV @10.13%	-\$1,000	-\$227	-\$437	-\$17	\$18	-\$293	\$85	\$105	\$122	\$135	\$146	\$155	\$360	\$213	\$196	\$548
NPV	\$109															
Side Costs and Benefits																
Operating Income net effect	\$0	-\$50	-\$50	-\$41	-\$41	-\$41	-\$41	-\$41	-\$41	-\$40	-\$40	\$10	\$10	\$10	\$11	\$11
PV @7.78%	\$0	-\$46	-\$43	-\$33	-\$31	-\$28	-\$26	-\$24	-\$22	-\$21	-\$19	\$4	\$4	\$4	\$4	\$4
NPV	-\$274															
Overall NPV =	-\$165															

Your findings... Finite Life NPV



NPV for finite life: Class Distribution



Explanations for Infinite Life Case

- When extending the project life to infinity, I did make some changes to the assumptions about capital maintenance.
 - Made the capital expenditure exceed depreciation by 2% (the inflation rate) all through the 15 years. Essentially, I am assuming that whatever depletion occurs in book value because of depreciation is made up by new capital maintenance expenditures in that year, with the inflation adjustment.
 - Set capital expenditures 2% higher than depreciation in year 16, to allow for the fact that in perpetuity, I would have to keep stores looking pristine to have growth of 2% a year forever.
 - Advertising expenses continue beyond year 15.
- The synergy benefits now continue in perpetuity as well.

Incremental Cash Flows- Infinite Life

Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of Stores	-	-	-	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	150.00	150.00
Revenues per Store	\$-	\$-	\$-	\$40.00	\$40.80	\$41.62	\$42.45	\$43.30	\$44.16	\$45.05	\$45.95	\$46.87	\$47.80	\$48.76	\$49.73	\$50.73
Revenues		\$-	\$-	\$2,000	\$2,448	\$2,913	\$3,396	\$3,897	\$4,416	\$4,955	\$5,514	\$6,093	\$6,693	\$7,314	\$7,460	\$7,609
- Oper. Exp.		\$-	\$-	\$1,600	\$1,958	\$2,330	\$2,717	\$3,117	\$3,533	\$3,964	\$4,411	\$4,874	\$5,354	\$5,851	\$5,968	\$6,088
- Deprec'n on new investment		\$-	\$-	\$150	\$165	\$180	\$251	\$267	\$283	\$300	\$317	\$334	\$352	\$156	\$141	\$126
- Deprecn: Cap Mtnce				\$-	\$15	\$31	\$46	\$67	\$87	\$108	\$127	\$147	\$166	\$186	\$183	\$179
- Allocated & Incrm. G&A		\$-	\$-	\$83	\$91	\$100	\$109	\$119	\$129	\$140	\$150	\$162	\$173	\$186	\$192	\$199
- Advertising Exp.		\$-	\$-	\$159	\$162	\$166	\$169	\$172	\$176	\$179	\$183	\$187	\$190	\$194	\$198	\$202
EBIT		\$-	\$-	\$8	\$56	\$106	\$104	\$154	\$208	\$265	\$325	\$389	\$457	\$741	\$778	\$816
Taxes		\$-	\$-	\$3	\$22	\$42	\$42	\$62	\$83	\$106	\$130	\$156	\$183	\$297	\$311	\$326
EBIT(1-t)		\$-	\$-	\$5	\$33	\$64	\$62	\$92	\$125	\$159	\$195	\$234	\$274	\$445	\$467	\$490
+ Deprec'n		\$-	\$-	\$150	\$180	\$211	\$297	\$334	\$371	\$407	\$444	\$481	\$518	\$342	\$324	\$305
+ Fixed Allocated Exp (1-t)		\$-	\$-	\$35	\$36	\$38	\$40	\$42	\$44	\$47	\$49	\$51	\$54	\$57	\$59	\$62
- Cap Ex	\$1,000	\$250	\$250	\$150	\$153	\$156	\$159	\$162	\$166	\$169	\$172	\$176	\$179	\$-	\$-	\$-
- Capital Maintenance		\$-	\$-	\$153	\$168	\$184	\$256	\$272	\$289	\$306	\$323	\$341	\$359	\$159	\$144	\$128
- Opp. Cost of Dist'n System		\$-	\$-	\$-	\$-	\$552	\$-	\$-	\$-	\$-	\$-	\$-	\$-(634)	\$-	\$-	\$-
- Chg in WC		\$-	\$280	\$63	\$65	\$68	\$70	\$73	\$75	\$78	\$81	\$84	\$87	\$20	\$21	\$21
+ Terminal Value																\$6,584
Cashflows to the firm	\$(1,000)	\$(250)	\$(530)	\$(176)	\$(136)	\$(647)	\$(86)	\$(39)	\$10	\$60	\$112	\$166	\$855	\$663	\$685	\$708

The terminal value calculation

- Cash flow to the firm in year 16
 - = EBIT (1-t) + Depreciation – Cap Ex – Change in WC
 - = \$ 498 + \$ 311 – \$ 317 - \$ 21 = \$536 million
- Terminal Value
 - = CF in year 16/ (Cost of capital –g)
 - = 536/ (.1013-.02) = \$6,584 million

Finite versus Infinite: The Cash Flow Trade off

Year	Finite life	Infinite life	Difference
0	-\$1,000	-\$1,000	\$0
1	-\$250	-\$250	\$0
2	-\$530	-\$530	\$0
3	-\$23	-\$176	-\$153
4	\$26	-\$136	-\$162
5	-\$475	-\$647	-\$172
6	\$152	-\$86	-\$238
7	\$207	-\$39	-\$246
8	\$264	\$10	-\$254
9	\$323	\$60	-\$263
10	\$384	\$112	-\$272
11	\$447	\$166	-\$282
12	\$1,147	\$855	-\$292
13	\$748	\$663	-\$85
14	\$756	\$685	-\$71
15	\$785	\$708	-\$78
Ending value	\$1,548	\$6,584	\$5,036

Value Added: NPV of Infinite Life Case

Project Cash Flows																
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Incremental Cash Flows	-\$1,000	-\$250	-\$530	-\$176	-\$136	-\$647	-\$86	-\$39	\$10	\$60	\$112	\$166	\$855	\$663	\$685	\$7,292
PV @10.13%	-\$1,000	-\$227	-\$437	-\$132	-\$93	-\$399	-\$48	-\$20	\$4	\$25	\$43	\$57	\$269	\$189	\$177	\$1,714
Net Present Value	\$123															
Side Costs and Benefits																
Operating Income net effect	\$0	-\$50	-\$50	-\$41	-\$41	-\$41	-\$41	-\$41	-\$41	-\$40	-\$40	\$10	\$10	\$10	\$11	\$11
PV @ 7.78%	\$0	-\$46	-\$43	-\$33	-\$31	-\$28	-\$26	-\$24	-\$22	-\$21	-\$19	\$4	\$4	\$4	\$4	\$64
Value of Synergy =	-\$213															
Overall Project NPV =	\$(90)															

Consistency in growth and investment assumptions

After year 12

Project ends

Infinite life; $g=0\%$

Infinite life; $g = \text{inflation}$

Infinite life; $g > \text{inflation}$

Capital Expenditure Assumption

No (or very low) capital maintenance

Let assets run down towards end of life

Capital maintenance = Depreciation

Maintain invested capital at base level

Capital maintenance $>$ Depreciation

Capital invested has to grow at inflation rate

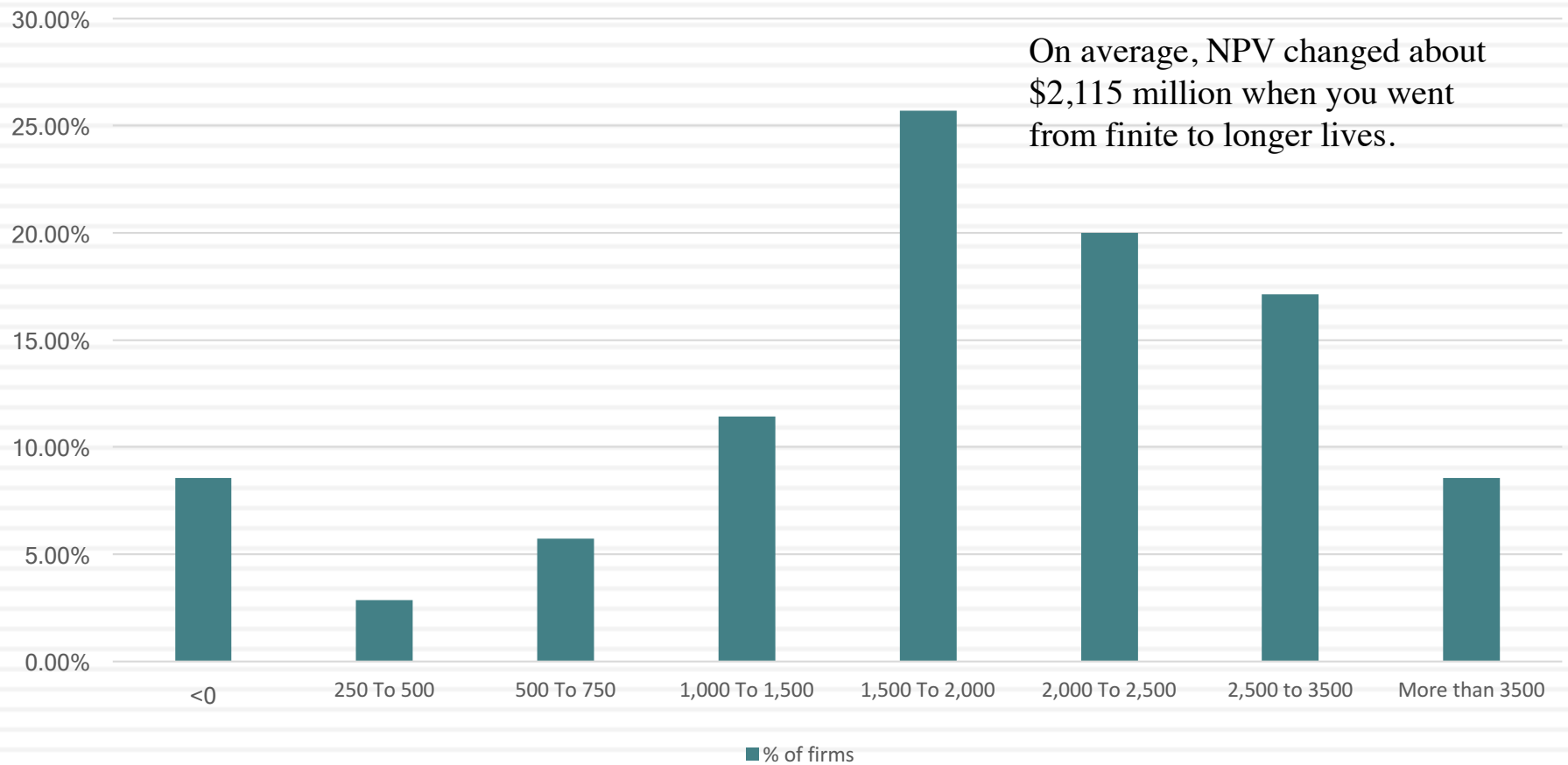
Capital investment to increase capacity

Capital maintenance $>$ Depreciation

Capital invested has to grow to reflect real growth

Your findings: Infinite Life

NPV for Longer Life: Class Distribution



Final Conclusions

- Of the 50 groups that turned in numbers on this project, 15 decided that it should be rejected.
- 30 groups suggested that the investment be made...
- 5 groups made conditional recommendations.