

“Fundamental Analysis for Investors, Managers and Entrepreneurs”

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Course Description and Objectives

Most of the decisions of analysts, consultants, entrepreneurs, investors and managers require us to look ahead and assess an uncertain future. In this class, you will learn a differentiated approach to decision making that will help you consider the fundamentals of enterprises and how to link these fundamentals to underlying measures, which in turn will help you make better investment or management decisions. Students who have taken this course often comment on how it has transformed their thinking and understanding of companies. It also serves as a useful “capstone” to the MBA program as we draw on what was taught in most core courses.

In developing this line of reasoning and performing the analysis, we consider how to think about a new business as well as a publicly traded company. Having considered the basic building blocks, we next examine how the business resources and activities are translated into financial statements (whether for an early stage or public company) and consider what we learn from financial statements. We consider the extensive information increasingly available from outside sources, including various websites as well as Bloomberg and CapIQ. We also consider how certain accounting measures and practices impact the measures of the key elements of the business.

IMPORTANT: While you will be able to use the approach to analyze a public company for your assignments and final project, you can (and students in the past have) also use private companies ranging from startups to family businesses, or use internal data of public companies or their subsidiaries if you have access to this information.

Focusing on the future, we take **a different approach** to many topics/concepts that are covered in various ways in other financial statement analysis, earnings quality, and security analysis and valuation classes. Many students take this course as well as other seemingly similar courses, and we have *never* received any feedback that the coverage in this course is redundant, irrespective of the other courses taken by students.

We will focus on understanding how entities create or destroy value for various stakeholders and what it would take to change this, how to consider uncertainty more explicitly in plans, and whether this fundamental value is reflected in the price or not (for entities that it applies to).

We will also take some time each week to address any topics that are in the financial press that bear on the subjects and the approach.

Graded Learning

The only way you will internalize the information in the course is by actually preparing a forecast (plan) of the business that allows you to see the impact of different potential outcomes.

In the **assignments**, you will be asked to analyze some of the key aspects (e.g., revenue, labor, etc.) of the public company, Chipotle (following the framework provided in the class) on a group basis. You will work in groups of 2 to 3 (LARGER SIZES WILL NOT BE ACCEPTED). For each topic area of the assignments, you will also prepare a base forecast for a minimum of two years into the future. However, feel free to talk with each other or with others to help you maximize your learning.

For the **final project**, you can pick a company of your choosing. However, for the final project, you will **individually** make sure all the elements of your semester's work are linked appropriately in your model, and add the extra topics not covered in the assignments (e.g., taxes) plus your own individual perspective on the original forecasts (as explained in text).

Ideally the entity you choose to analyze will be one that you are interested in understanding deeply, e.g. the company (or a company in the industry) you work for/cover (or a customer, client or competitor), your family business, or perhaps a startup that you are developing.

The grades will be based on your engagement in the class, the assignments, and the final deliverable but we will have **no exams**.

What you will get out of this

Every student **who puts in effort** should walk away with an approach and concepts that you can use in almost any business or position in which you find yourself. It is usually a fun and stimulating journey for students.

Is financial expertise critical?

The course presumes that you have a solid understanding of the subject matter covered in B6000 and other core courses. We have had many students who have no additional financial accounting or finance backgrounds, and by investing in their learning, they end up with H or even H+ grades. So, while financial analysis expertise may be helpful it is not necessary at all.

Required Text and Readings

1. Weekly handouts/posts on Canvas substitute for a course packet
2. There is no required text. Business Planning, Financial Statement Analysis and Valuation texts can be helpful but in certain topics each of them will argue for approaches that are at odds with what I am teaching.
3. There will also be additional references provided for those students who want to get more background and a deeper understanding of some of the technical accounting aspects of any topic, but this is **not required**.

Grading

There will be approximately 6 written assignments, which will relate to the materials discussed and their application to an actual company (see p 7). These assignments will be done by your group using the Type A assignment scheme (see below) and cover 60% of the grade. 5% of your grade will be based on your attendance at class and your preparation and understanding of the company analysis for your discussions with me, and 35% will be based on the final project, which will also follow Type B in the assignment scheme. *A passing grade on the final project is necessary to pass the class.*

I do not intend to grade on a curve for this course. I believe in merit-based grades so would be delighted to give everyone an H, but I also give low or failing grades to anyone who does not put in the effort and does not demonstrate an understanding of what we cover.

TA

The TA is Nan Li, his email is NLi18@gsb.columbia.edu. You can communicate with Nan via email to discuss the course and assignments. **You should also copy me on all correspondence.**

Office Hours: By appointment

Relation to the Core:

This course incorporates elements of every core class.

This course adheres to Columbia Core Culture. Students are expected to be:

Present:

- On time and present for every session
- Attendance tracked

Prepared:

- Complete pre-work needed, expect cold calling
- Bring nameplates and clickers

Participating:

- Constructive participation expected and part of grade
- No electronic devices unless explicitly called for by the instructor (look under “tablets/computers” below)

Code of Conduct: aka our Contract

The value of the course will depend on how much effort you are willing to put in, and on attendance and participation in the lectures and assignments.

You are expected to treat the class as you would your job, i.e., as a business professional, demonstrating mutual respect for each other, and performing as if it is an important

business assignment. This means you need to be prepared, be on time, and be attentive during the class.

Tablets/Computers: I am open to letting you use these for access to the class materials or to take notes. BUT if this is abused for personal activities and distracts other students I will change the policy.

Cellphones: All classes in this course have a 'no cellphone' policy. In respect to your fellow classmates and myself, please have your phone's volume and vibration turned off during class and keep your phone in your bag/pocket. We will have one break (10 to 15 minutes) when you can catch up on calls, emails, etc.

If you need to be reachable immediately during class (e.g. your wife is going into labor any minute), please let me know ahead of time.

My commitment to you:

I will give you as much personal attention as feasible to maximize the benefit from your work. As people come in with different expertise, we can (partially) tailor the output to your strengths and expertise. I appreciate constructive feedback during the course to help optimize your learning, but I have to consider the class as a whole, so individual needs are best dealt with by me or Nan one-on-one.

Type	Designation	Discussion of Concepts	Preparation of Submission	Grade
A	Group/Group	Permitted with designated group*	By the group	Same grade for each member of group
B	Group/Individual	Permitted with designated group*	Individually (No sharing of any portion of the submission.)	Individual

*The designated group is a self-selected study group to be used for the duration of the course.

B 7010: Preliminary Course Outline

Class #	Subject matter	Specific Topics
1	Overview - Approach to Fundamental Analysis of any Business	<ul style="list-style-type: none"> • A general framework for understanding and then forecasting a business and its potential value in an uncertain environment • The “Cycle of Life” of a business • Relating this to financial statements, other information and intrinsic value • A critical review of what we see in practice by companies (early stage and established) and analysts
2 and 3	Understanding Revenue	<ul style="list-style-type: none"> • Understanding the product or service • To whom, how and where is it being sold • Pricing • What are the market size and the competitive situation? • How is the revenue recognized? • How and when are customers paying?
4 and 5	Understanding Productive Capacity, R&D and Intangibles.	<ul style="list-style-type: none"> • What property and equipment (including technology) do they need to sustain the revenue and/or grow (match to the revenue expectations)? • How much does this cost and how will it be financed? • Where and How are(/should) the physical and financing needs (be) reflected in the financial statements? • Considering IP and patents, what R&D or other intangibles are needed, how are they “acquired” and paid for, and how are/should they be reported? • How do these all compare to competitors?
6 and 7	Understanding Human Resources and Labor Costs	<ul style="list-style-type: none"> • What type of talent do you need to sustain and/or grow the business, how many and where are they located? • What are(/should) they (be) paid? • How are(/should) they (be) compensated Cash vs Benefits (pensions and health/opeb) vs share-based compensation (shares vs employee stock options)?

		<ul style="list-style-type: none"> • Where and how is the cost reflected in financial statements?
8	Understanding Material and other costs	<ul style="list-style-type: none"> • What are primary materials/components needed? • How are they sourced (supply chain) and what do they cost? • What are key sales and marketing approaches and costs? • Where and how are these reflected in financial statements?
8-9	Funding, Capital Structure	<ul style="list-style-type: none"> • Funding choices (equity vs debt) for different types of entity (early stage, high growth and steady state; small vs large) • How much and when is funding needed? • How are these reflected in financial statements and performance measures?
9	Funding: Financial Investments, Strategic and M&A and Intangibles from Acquisition	<ul style="list-style-type: none"> • Considering liquidity and financial investments and how they are reflected in financial statements • Impacts of strategic investments, mergers and acquisitions, and minority stakes. • How do we interpret the related growth and acquisition related assets?
10	The Impact and Understanding of Taxation	<ul style="list-style-type: none"> • Tax considerations: what is taxed, where is it taxed, when is it taxed and at what rate? • How is tax reflected in the financial statements and what can we learn from this?
11	Understanding the Basics of Currency Impacts	<ul style="list-style-type: none"> • Transactions vs translation and impact on margins, cash flow, ratios and capital
12	Catch up, valuation and putting it all together	<ul style="list-style-type: none"> • Bringing all the pieces together and relating them to forecasts and valuation analysis • Considering the trade-offs of various valuation approaches for managers and different investors.

Assignment #	Topic	Due Date
1	<i>Drawing-describing the “Operating and Funding Cycles of a Business” (small, but investing time in this step will pay off)</i>	
2	<i>Revenue analysis (large)</i>	
3	<i>Capacity analysis (large)</i>	
4	<i>Labor analysis (large)</i>	
5	<i>Materials and Other Costs (small)</i>	
6	<i>Capital structure analysis (small)</i>	
7	<i>Taxation analysis (voluntary)</i>	
Final project	<i>Additional Scenario of 2 Year Forecast, Write-up and Valuation (Individual)</i>	

Note: Assignment 1-7 for Chipotle, final project for a company you choose.

Fundamental Analysis for Investment Management and Entrepreneurship: Revenue - Part 1

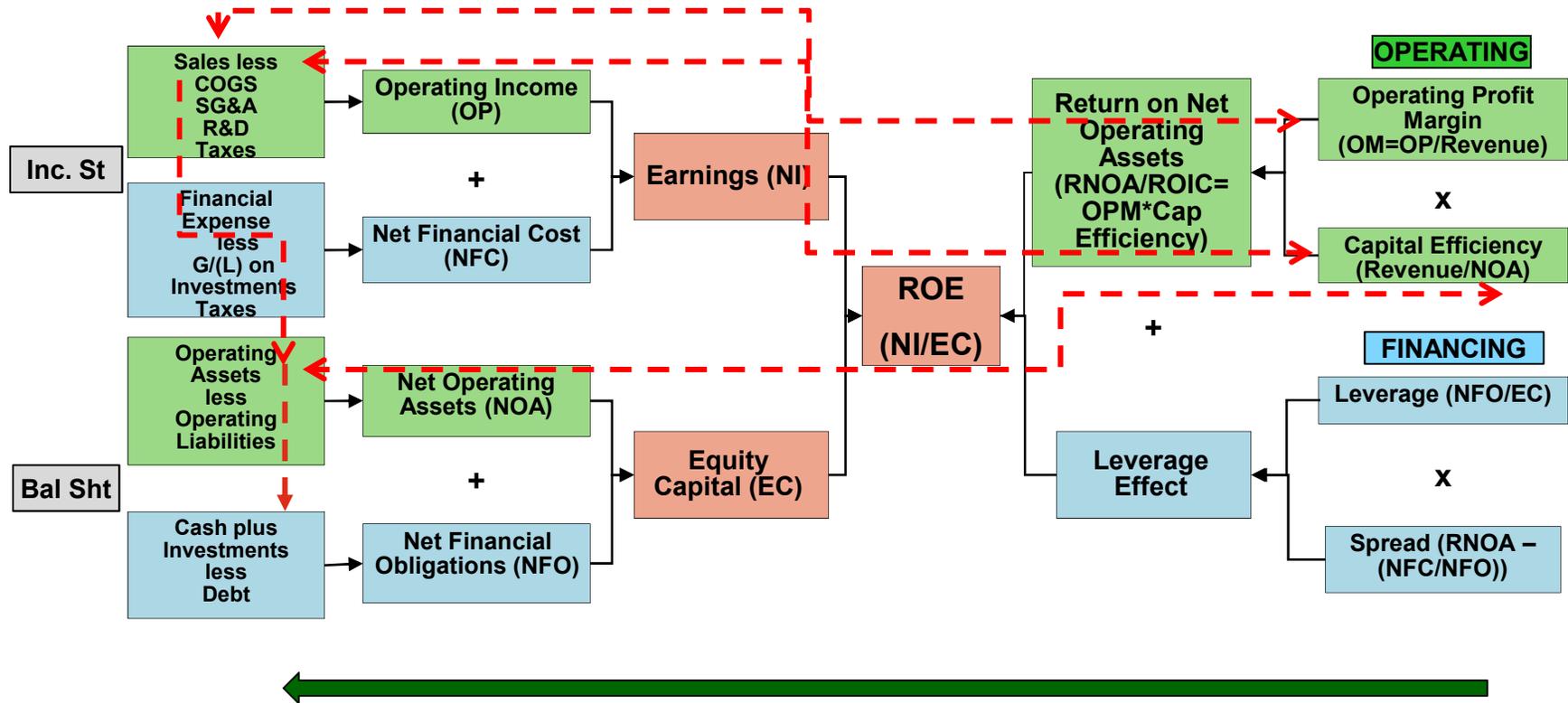
Prof. Shiva Rajgopal

2016

Outline

- Complete introductory session
- An introduction to forecasting revenue
- Questions to address when analyzing revenue
- Examples of breaking down the revenue (digging deeper) to facilitate analysis and forecasting
- What can we learn from financials about the current and future revenue

The Basic Connection Between Performance Metrics and Financial Statements: Revenue



Forecasting Revenue/Sales: How do (most) people usually begin?

- Public Companies with historical information
- Private companies with historical information
- Startups/Early stage companies with no history

What do we Need to Consider for Estimating Revenue in Our Restaurant?

Data from the Restaurant Association (includes Institutional Spending)

State Economic Indicators

Projected Percent Change, 2013-2014

		Total Employment	Real Disposable Personal Income	Total Population	RESTAURANT SALES (\$000)		
					2013	2014	% Change
	Alaska	1.3%	2.6%	1.0%	\$1,307,494	\$1,351,948	3.4%
	California	1.8%	3.0%	0.9%	67,127,319	69,711,721	3.9%
	Hawaii	1.6%	2.7%	0.9%	3,703,128	3,831,256	3.5%
	Oregon	1.9%	3.2%	1.2%	6,467,862	6,711,054	3.8%
	Washington	1.8%	3.1%	1.0%	10,848,158	11,201,327	3.3%
	PACIFIC	1.8%	3.0%	1.0%	\$89,453,961	\$92,807,306	3.7%
	New Jersey	1.5%	3.0%	0.3%	\$14,140,058	\$14,585,470	3.2%
	New York	1.2%	3.1%	0.2%	33,447,765	34,635,161	3.6%
	Pennsylvania	1.2%	3.0%	0.1%	17,770,760	18,279,004	2.9%
	MIDDLE ATLANTIC	1.3%	3.1%	0.2%	\$65,358,583	\$67,499,635	3.3%

National Restaurant Association | Restaurant.org/Forecast

A Sample of Breaking this Down to Focus on an Obtainable Market

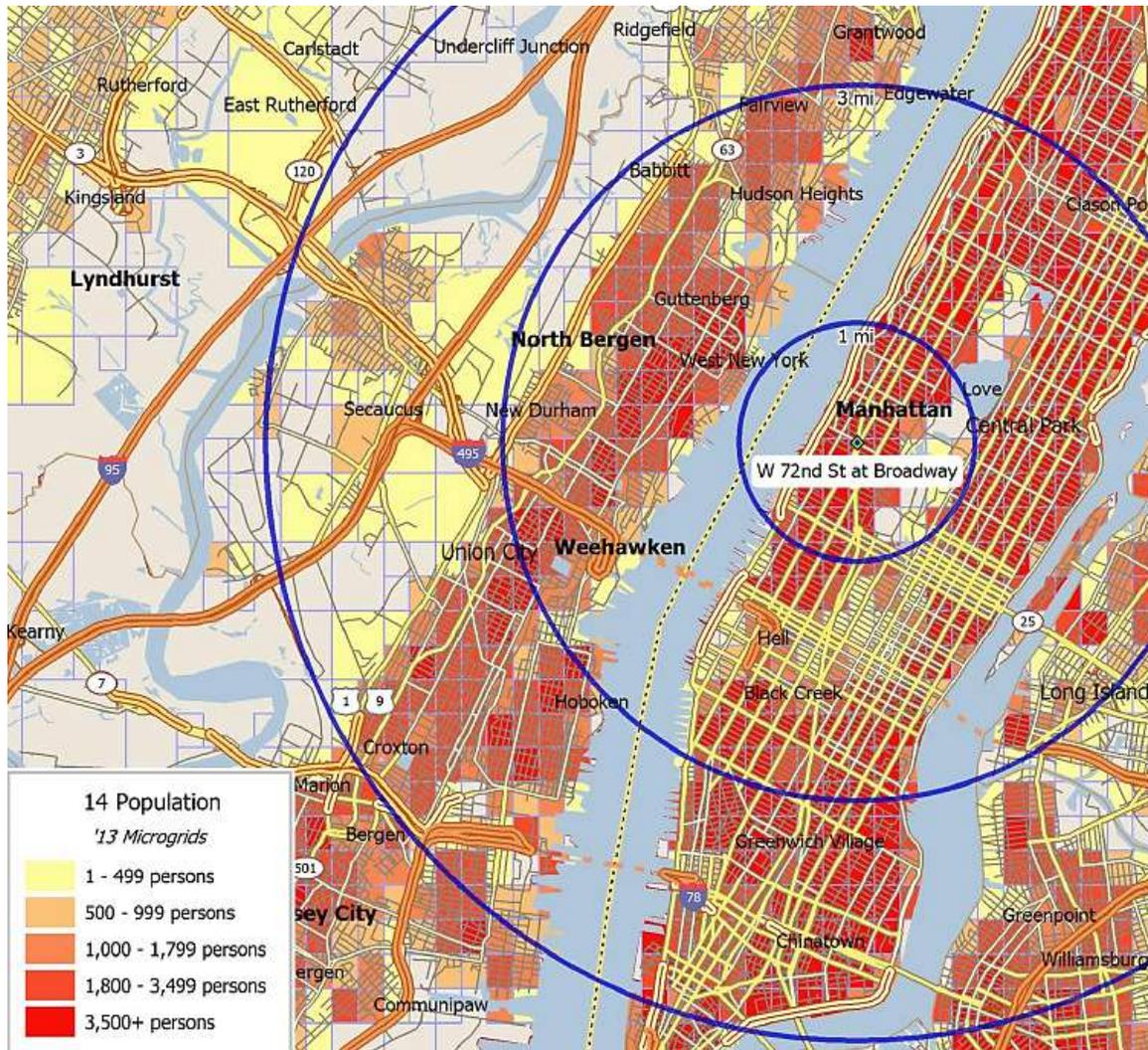
2014 Market Comparison

		California (State 06, CA)		New York (State 36, NY)	
Population	2014	38,439,243		19,114,163	
	2019	39,496,452		19,628,001	
	2010	37,253,956		19,378,102	
Household income	< \$25,000	2,324,016	18.0	1,548,960	20.7
	\$25,000 - \$49,999	3,029,359	23.5	1,758,752	23.4
	\$50,000 - \$74,999	2,226,982	17.3	1,273,594	17.0
	\$75,000 - \$99,999	1,454,172	11.3	805,623	10.7
	\$100,000+	3,862,173	29.9	2,113,151	28.2
	Median household income	62,078		58,265	
Average household income	84,560		83,937		
Consumer spending (total annual, \$000)		863,995,272		439,012,995	
	Housing	287,736,321	33.3	160,707,448	36.6
	Transportation	116,413,931	13.5	52,168,050	11.9
	Food at home	69,115,357	8.0	35,072,014	8.0
	Food away from home	46,952,064	5.4	23,954,877	5.5
	Life insurance & pensions	96,636,223	11.2	47,430,499	10.8
	Entertainment	45,579,352	5.3	22,854,948	5.2
	Healthcare	67,049,626	7.8	33,037,146	7.5
	Apparel & related services	30,266,289	3.5	14,935,461	3.4
	Other	105,512,202	12.2	52,073,770	11.9

Scan/US

Professional Market Mapping

 Columbia Business School



More Detail Available To Assess Market More Directly

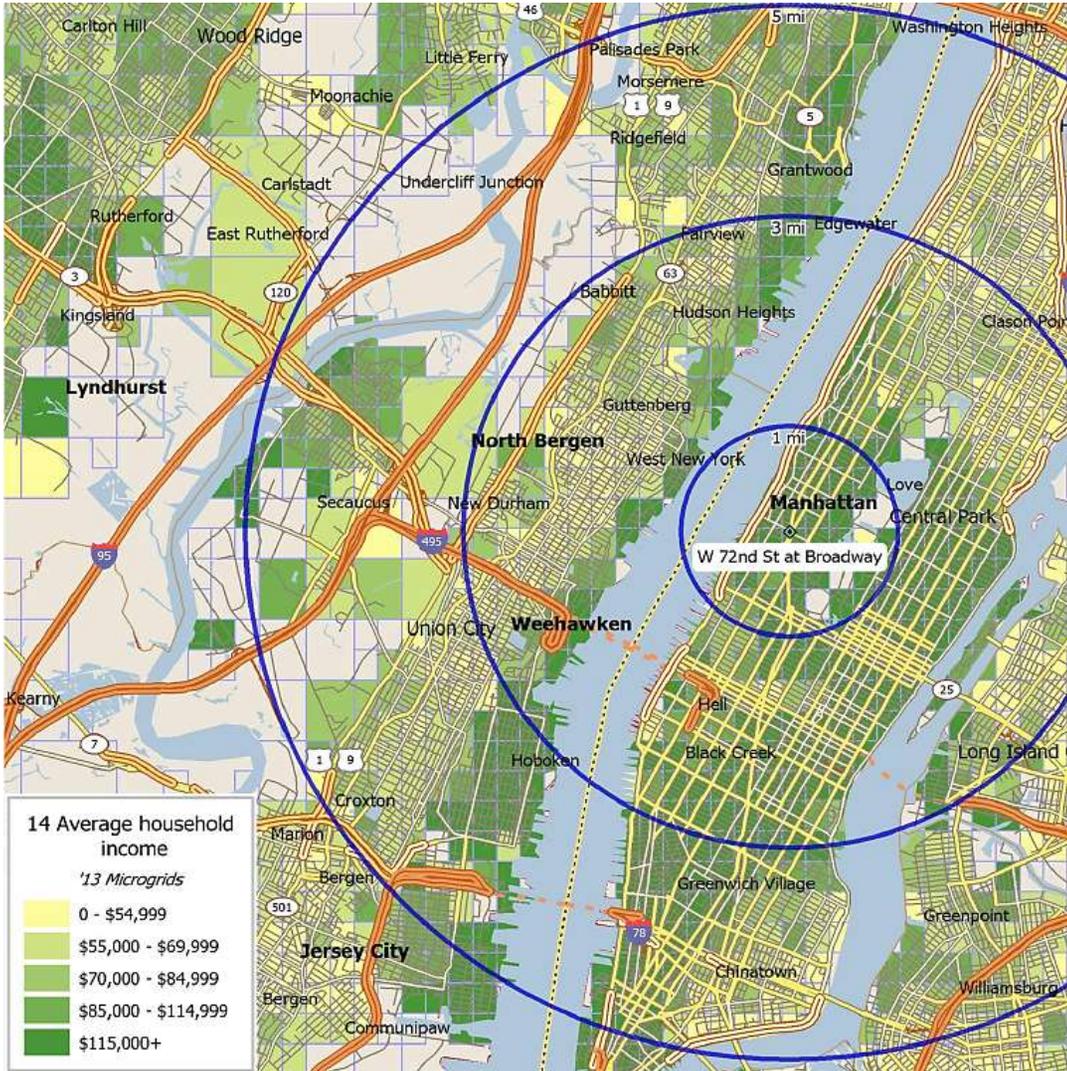
Population

Scan/US software is used for the production of demographic reports and maps for specific sites, trade areas and markets.



DemographicReports
Reporting and Mapping Service

Scan/US Professional Market Mapping



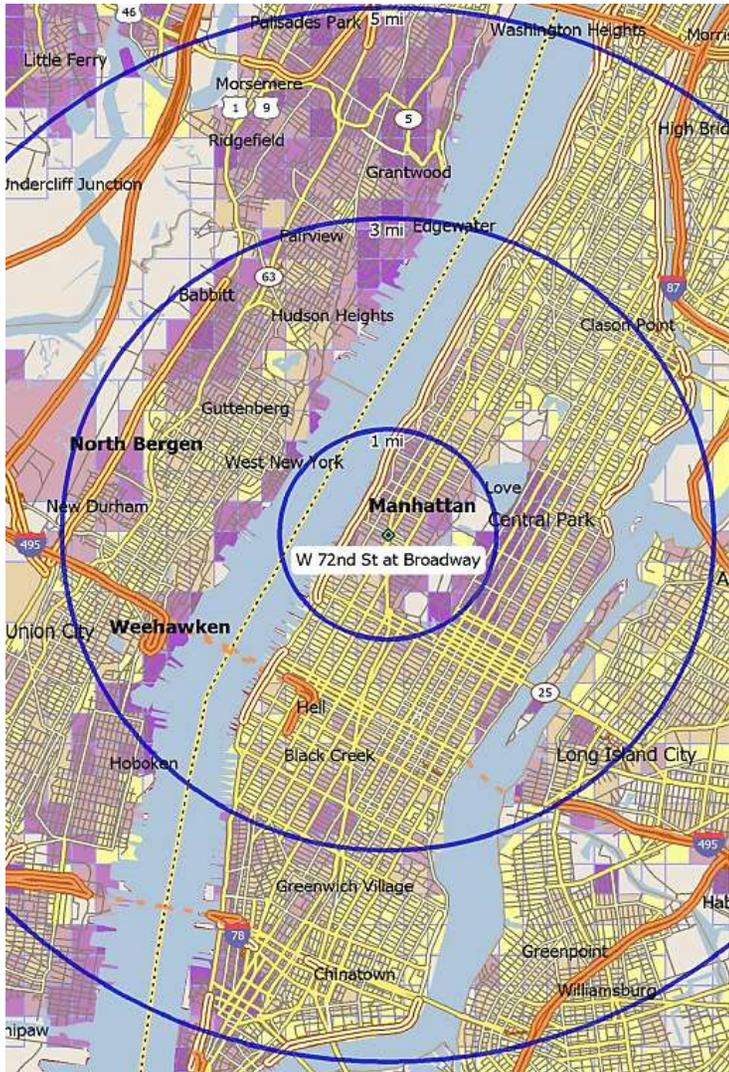
More Detail Available To Assess Market More Directly

Household Income



DemographicReports
 Reporting and Mapping Service

Scan/US Professional Market Mapping



More detail on Actual Spending

Consumer Spending Comparison Report

W 72ND ST AT BROADWAY: NEW YORK, NY 10023:
SITE LOCATED AT 40.77871, 73.98197

	1 MI RING		3 MI RING	
Households	87,365		586,488	
Owner households	28,543		159,579	
Renter households	58,822		426,909	
Average Household income	\$190,235		\$136,772	
Average Annual Household Spending	\$57,747		\$51,575	
Average Annual Spending by Category				
Food	\$5,855	10.1%	\$5,867	11.4%
Food at home	\$3,267	55.8%	\$3,398	57.9%
Cereals/bakery products	\$469	14.4%	\$491	14.4%
Meats/poultry/fish/eggs	\$707	21.6%	\$744	21.9%
Dairy products	\$365	11.2%	\$375	11.0%
Fruits/vegetables	\$660	20.2%	\$676	19.9%
Other food at home	\$1,057	32.3%	\$1,103	32.5%
Food away from home	\$2,587	44.2%	\$2,469	42.1%
Alcoholic beverages	\$493	0.9%	\$462	0.9%

14 Average annual spending
'13 Microgrids

- 0 - \$47,999
- \$48,000 - \$54,999
- \$55,000 - \$61,999
- \$62,000 - \$71,999
- \$72,000+



DemographicReports
Reporting and Mapping Service

Scan/US

Professional Market Mapping

How Much Competition is There?

Business Comparison Report

Page 1 of 2
01/08/2015

W 72ND ST AT BROADWAY: NEW YORK, NY 10023:
SITE LOCATED AT 40.77871, 73.98197

	1 MI RING		3 MI RING		5 MI RING	
Total Establishments	12,590		140,032		208,131	
Establishments by Type						
Industrial	498	4.0%	8,198	5.9%	14,611	7.0%
Mining	4	0.8%	71	0.9%	159	1.1%
Construction	28	5.6%	540	6.6%	938	6.4%
Construction, <10 employees	182	36.5%	2,958	36.1%	5,494	37.6%
High-tech/research	11	2.2%	205	2.5%	313	2.1%
Trans/comm/utilities	38	7.6%	932	11.4%	1,773	12.1%
Wholesale/industrial	99	19.9%	2,185	26.7%	3,661	25.1%
Warehousing	27	5.4%	378	4.6%	774	5.3%
General industrial	109	21.9%	929	11.3%	1,499	10.3%
Manufacturing	234	1.9%	4,959	3.5%	6,917	3.3%
Heavy manufacturing	2	0.9%	63	1.3%	117	1.7%
General manufacturing	8	3.4%	181	3.6%	362	5.2%
Light manufacturing	38	16.2%	1,027	20.7%	1,367	19.8%
Manufacturing, <10 employees	186	79.5%	3,688	74.4%	5,071	73.3%
Commercial	3,569	28.3%	41,682	29.8%	67,096	32.2%
Retail trade	1,409	39.5%	18,709	44.9%	29,188	43.5%
Restaurants/bars	700	19.6%	7,103	17.0%	13,027	19.4%
Personal/rental/repair services	767	21.5%	7,656	18.4%	12,549	18.7%
Automotive repair services	197	5.5%	1,509	3.6%	2,364	3.5%
Hotels/motels	104	2.9%	711	1.7%	930	1.4%
Theaters/retail amusements	42	1.2%	280	0.7%	420	0.6%



DemographicReports
Reporting and Mapping Service

Weekly Sales Projection

Estimated Square Feet	3400
Avg Lunch Price	8.79
Avg Dinner Price	13.74
Number of Seats	86



Example from a Business Plan

		# Customers	Covers	Food
Monday	Breakfast			
	Lunch	90	1.0	791
	Dinner	110	1.3	1,511
	Daily Totals	200		2,303
Tuesday	Breakfast			
	Lunch	95	1.1	835
	Dinner	110	1.3	1,511
	Daily Totals	205		2,346
Wednesday	Breakfast			
	Lunch	100	1.2	879
	Dinner	120	1.4	1,649
	Daily Totals	220		2,528
Thursday	Breakfast			
	Lunch	110	1.3	967
	Dinner	125	1.5	1,718
	Daily Totals	235		2,684
Friday	Breakfast			
	Lunch	130	1.5	1,143
	Dinner	180	2.1	2,473
	Daily Totals	310		3,616
Saturday	Breakfast			
	Lunch	130	1.5	1,143
	Dinner	180	2.1	2,473
	Daily Totals	310		3,616
Sunday	Breakfast			
	Lunch	110	1.3	967
	Dinner	125	1.5	1,718
	Daily Totals	235		2,684
Weekly Totals		1715	Totals in USD \$	19,777

RECAP: Key Sales Figures	
Annual Sales	1,028,422
Average Monthly Sales	85,702
Annual Sales Per Square Foot	302
Annual Sales Per Seat	11,958

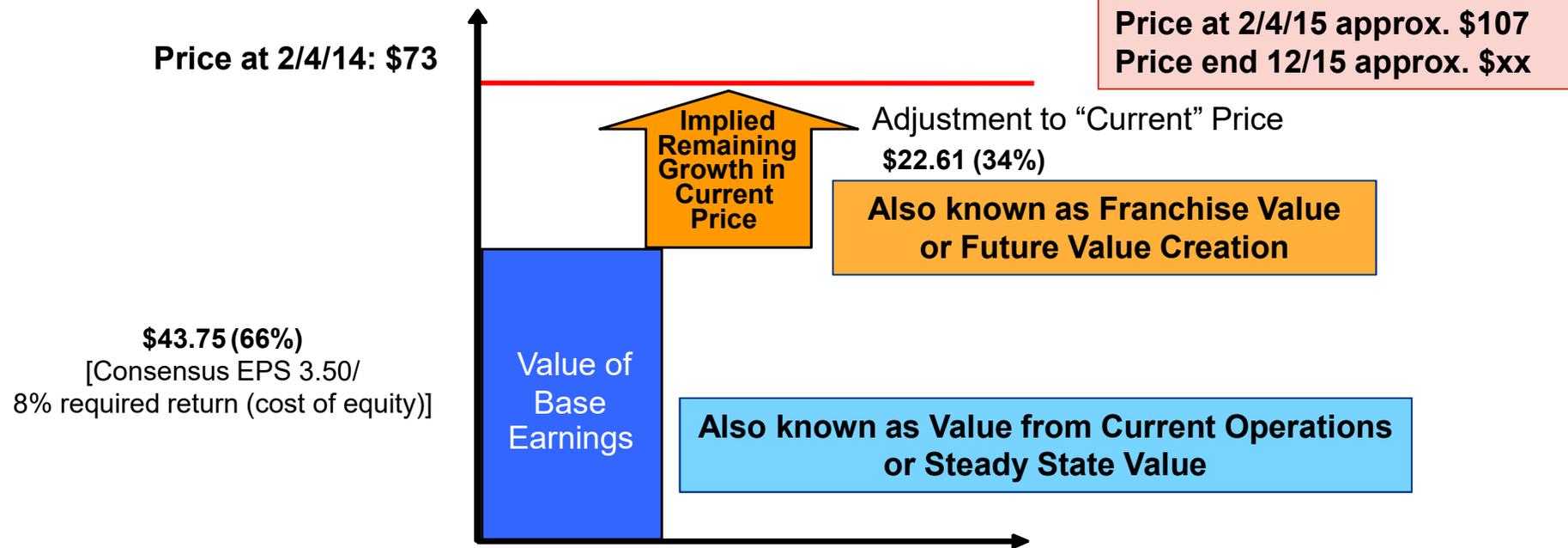
$$\$19,777 * 52 = \$1,028,404$$

What do we Need to Consider for Estimating Revenue in Our Restaurant?

TAKEAWAY: The fundamentals underlying revenue are integrated with resources not in \$ but in the underlying components leading to OpM and OpATO changes.

What happens when we move to a large public company?

Relating Price to Earnings and Future Growth – Home Depot Start of FYR 14

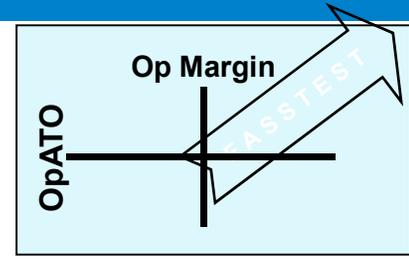
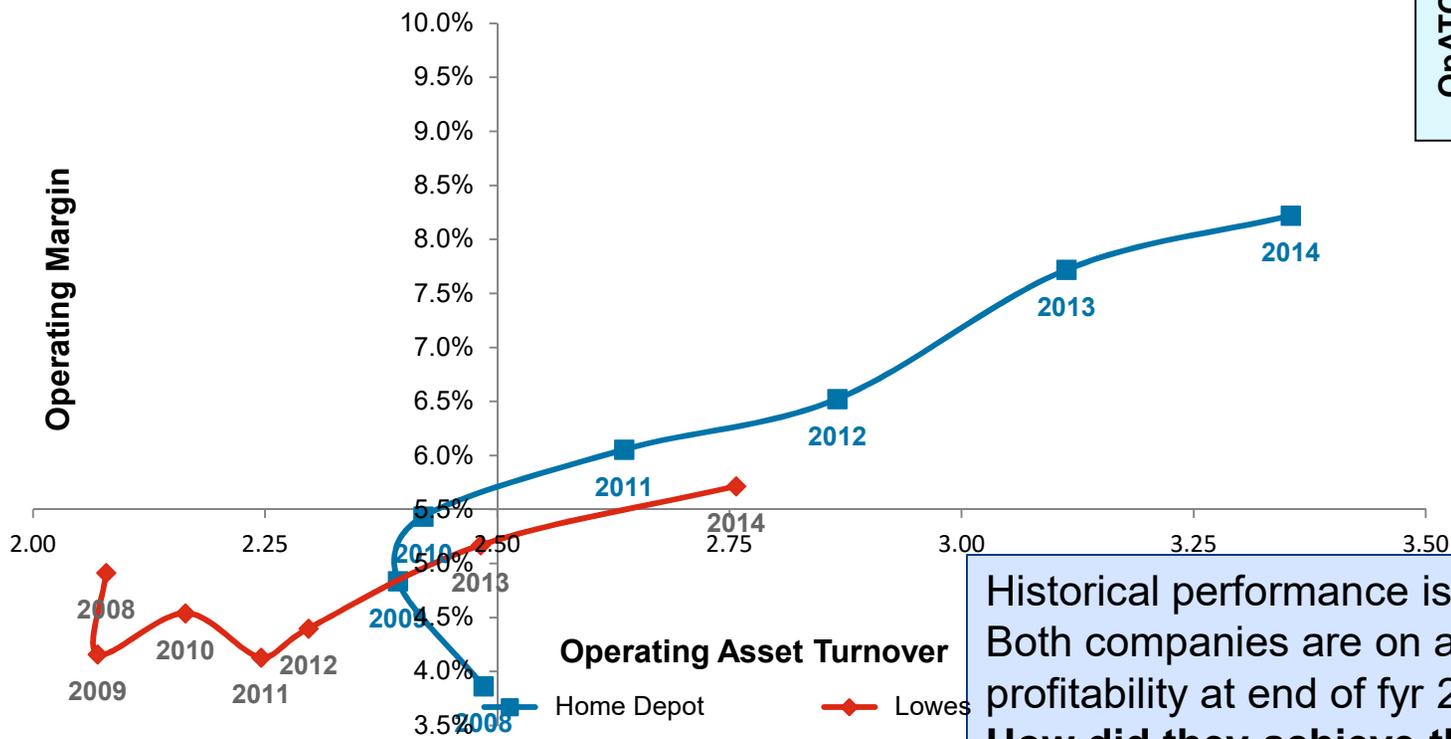


What kind of performance is necessary to justify this price?
Can (or how can) they sustain current profitability?
What is the source of the future value creation?

Source: S&P Capital IQ

Historical Profitability Map for Home Depot and Lowes

Profitability Map, 2008-2014



Historical performance is clearly in HDs favor. Both companies are on an upward trend profitability at end of fyr 2012. **How did they achieve this and what is the future path?**

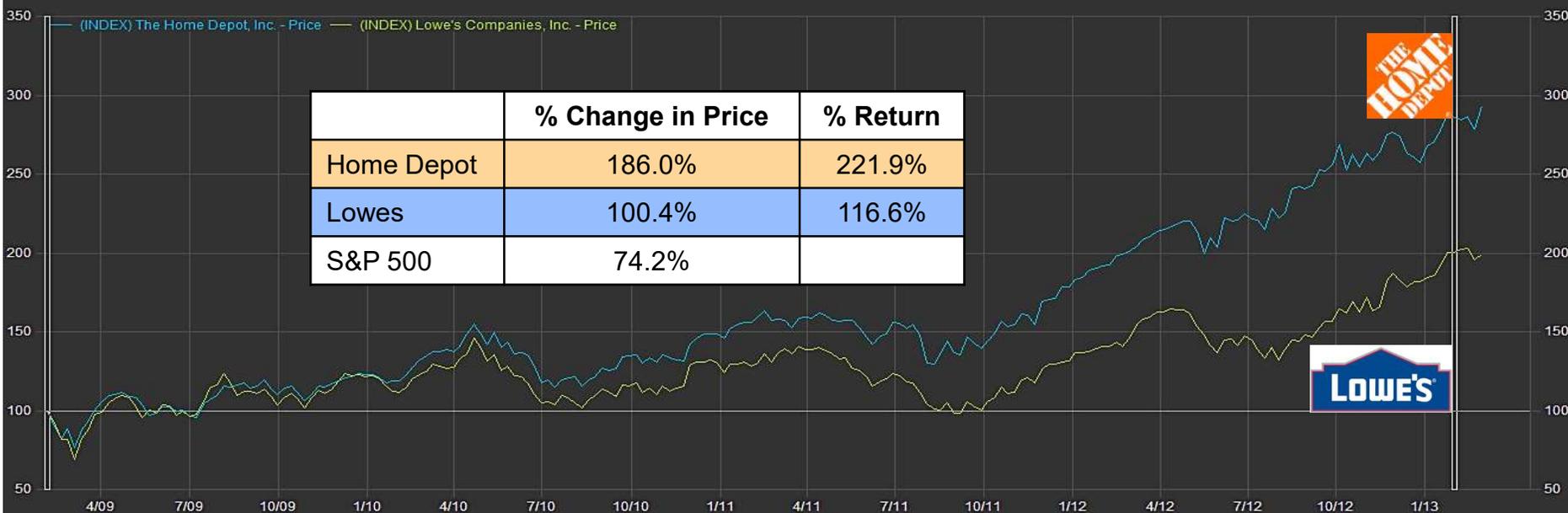
How did the stocks of the two companies perform?

The Home Depot, Inc. 100.00 286.02 186.02
 Lowe's Companies, Inc. 100.00 200.42 100.42

The Home Depot, Inc.

81.57 -0.36 -0.44% 4:00:19 PM VWAP:81.48

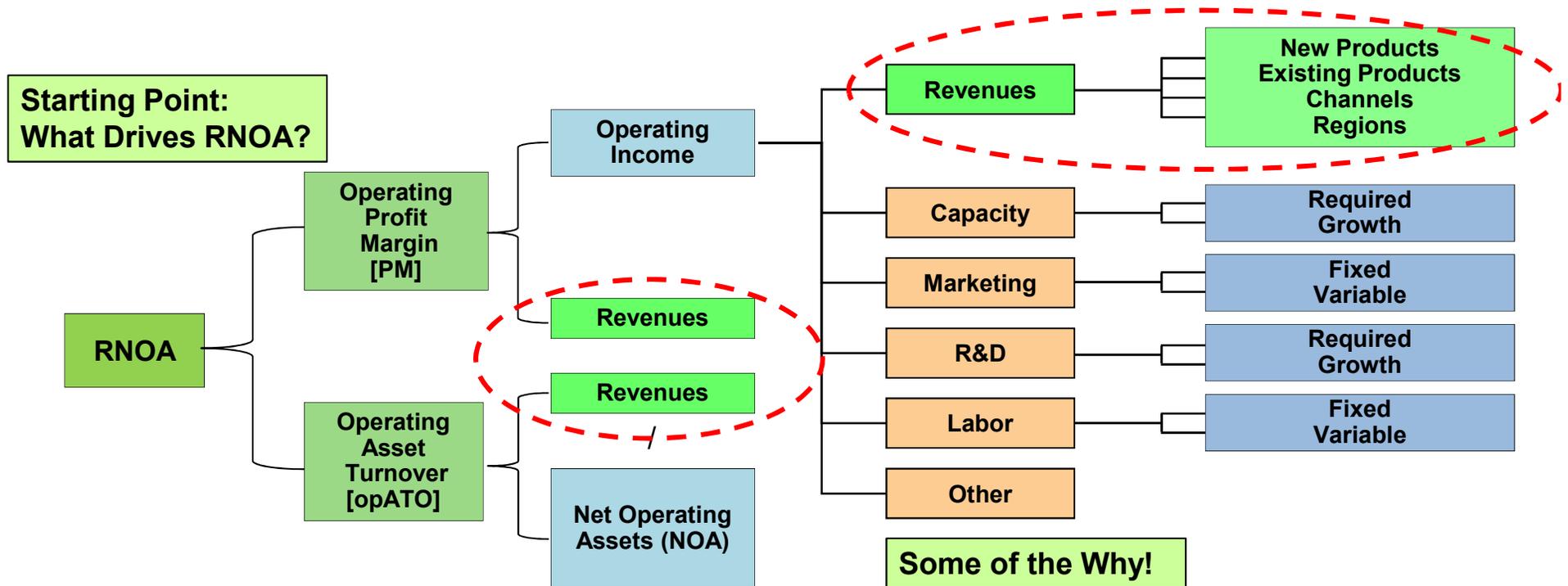
High: 69.19 Low: 17.49 Chg: 220.03%

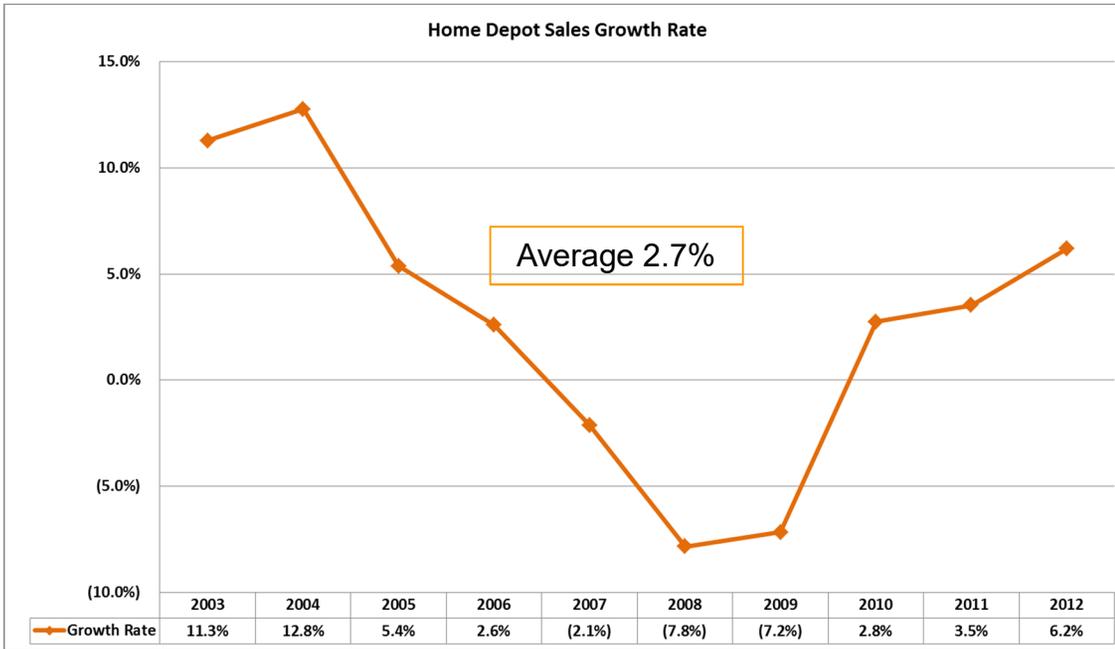


Source: FACTSET data

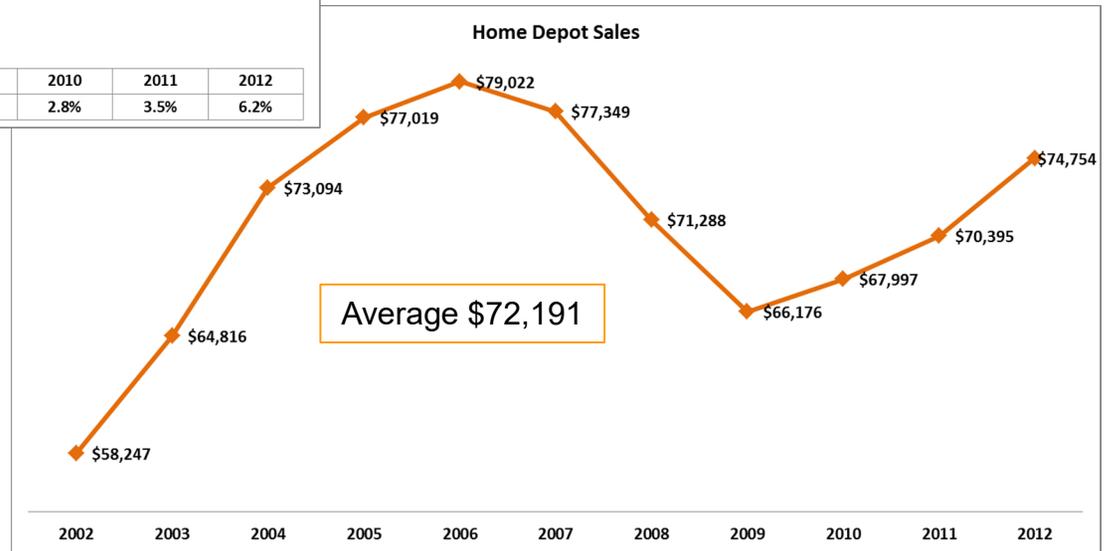
How do we decide where to start?

What we Need to Consider to Understand the Business and Forecast: Relating the Profitability Tree to More Detailed Analysis





How Useful are these for a Forecast?

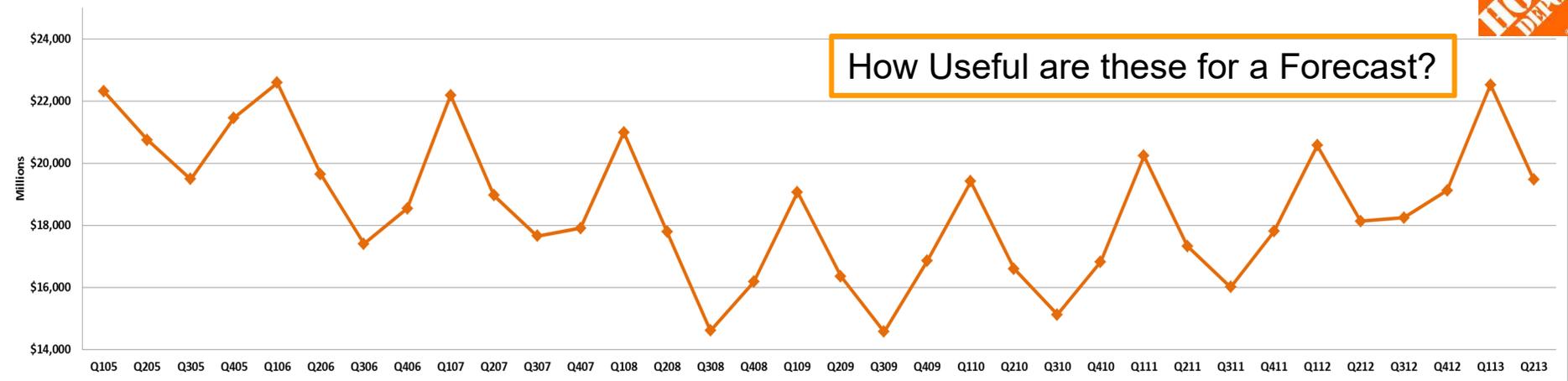


Source: Home Depot Financials, CapitalIQ

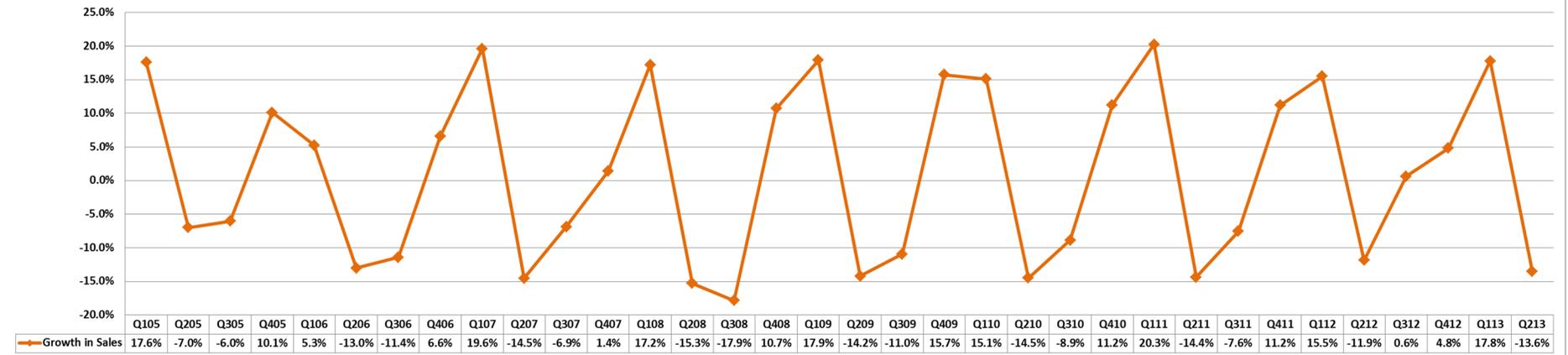


Home Depot Quarterly Sales

How Useful are these for a Forecast?



Home Depot Quarterly Sales Growth Rate



Source: Home Depot Financials, CapitalIQ

Why you need to be careful of time series from data bases



For the Fiscal Period Ending	Reclassified 12 months Feb-02-2003	Reclassified 12 months Feb-01-2004	Reclassified 12 months Jan-30-2005	Reclassified 12 months Jan-29-2006	Reclassified 12 months Jan-28-2007	Reclassified 12 months Feb-03-2008
Revenues						
Retail - Home Improvement	-	-	71,101.0	77,019.0	79,022.0	77,349.0
HD Supply	-	-	2,040.0	-	-	-
Corporate	-	-	(47.0)	-	-	-
Home Depot Stores	58,247.0	64,816.0	-	-	-	-
Total Revenues	58,247.0	64,816.0	73,094.0	77,019.0	79,022.0	77,349.0

From CapitalIQ

From 2007 10-K
Adj for Disc Ops

	2007 ⁽¹⁾	2006	2005	2004	2003	2002
<i>STATEMENT OF EARNINGS DATA⁽²⁾</i>						
Net sales	\$ 77,349	\$ 79,022	\$ 77,019	\$ 71,100	\$ 63,660	\$ 58,247
Net sales increase (%)	(2.1)	2.6	8.3	11.7	9.3	8.8

FactSet - COLUMBIA_STU - 370356C - Personal:Portfolio Management - [Income Statement]

HD-US

The Home Depot, Inc. (HD) \$82.02 Next Rpt Date: 25 Feb '14 Key Statistics FactSet Fundamentals

From FactSet

	Jan '03	Jan '04	Jan '05	Jan '06	Jan '07	Jan '08
	364 Days	371 Days				
Sales/Revenue	58,247	64,816	73,094	81,511	79,022	77,349

Understanding Underlying Growth Rates – Some Basics

	Reported Revenue	9 month Revenue Growth
1-May	\$15,000	
31-Dec	\$13,000	A -13%
31-Dec	\$14,300	B and C -5%
31-Dec	\$15,730	D 5%

What is your basic reaction to/ interpretation of these growth rates?

Understanding Revenue Basics

	Units	9 month Unit Growth	Price	9 month Price Growth	Exchange Rate	% Change in Exch Rate	Reported Revenue	
1-May	1000		10		1.5		\$15,000	
31-Dec	1000	0%	10	0%	1.3	-13%	\$13,000	A
31-Dec	1000	0%	11	10%	1.3	-13%	\$14,300	B
31-Dec	1100	10%	10	0%	1.3	-13%	\$14,300	C

How does this change your reaction to/interpretation of these growth rates?
Do the two -5% growth rate cases (B and C) have the same implications for sustainability?

1. Yes
2. No



Understanding Revenue Basics

	Units	9 month Unit Growth	Price	9 month Price Growth	Exchange Rate	% Change in Exch Rate	Reported Revenue	9 month Revenue Growth	
1-May	1000		10		1.5		\$15,000		
31-Dec	1000	0%	10	0%	1.3	-13%	\$13,000	-13%	A
31-Dec	1000	0%	11	10%	1.3	-13%	\$14,300	-5%	B
31-Dec	1100	10%	10	0%	1.3	-13%	\$14,300	-5%	C
31-Dec	1100	10%	11	10%	1.3	-13%	\$15,730	5%	D

How would you interpret the last case (D) +5% growth rate?

TAKEAWAY: Differentiating volume, unit price and exchange rates is critical to understanding the underlying implications of “growth” and its sustainability

The Basis of ALL Forecasting with Real Fundamental Analysis

Revenues are: Quantity X Price (X FX Rate)

Costs are: ["Fixed" Cost + (Quantity X Variable Cost)] (X FX Rate)

It may seem impossible to get the actual units BUT we **CAN AND MUST** always split any expected change into these components to get a reasonable model of a business even if this is done by splitting the growth rates.

<u>Basis for forecasting</u>					
Period 1 amount	Unit % change [A]	Price % change [B]	Exch Rate % change [C]	Total % change	Period 2 amount
\$15,000	10%	8%	(11%)	5.7%	\$15,860
	Why?	Why?	Why?	↓	
			$[(1+A)*(1+B)*(1+C)]-1$		

A Framework for Analyzing and then Forecasting Revenue

Issue	Previous	Current	What has changed and why?	What is likely to change and why?	Future Expectations
Understand the Product/Service - What is it? - How is it produced? - Where is it produced?					
Who is buying it (why are they buying it)?					
How is it sold?					
Where is it sold?					
What is pricing?					
How are customers going to pay for it?					
When are they paying for it?					
What is the feasible market size?					
How competitive is the market and how well is entity positioned?					
What macro drivers impact any of these?					
How is the revenue accounted for/reported?					

Understanding is Facilitated with Understanding the Operating Cycle

Understand the Product/Service

- What is it?
- How is it produced?
- Where is it produced?

Who is buying it (why are they buying it)?

How is it sold?

Where is it sold?

What is pricing?

How are customers going to pay for it?

When are they paying for it?

What is the feasible market size?

How competitive is the market and how well is entity positioned?

What macro drivers impact any of these?

How is the revenue accounted for/reported?



Your Business?

- Asset management
- Consulting (services)
- Education
- Media
- Pharma
- Real Estate
- Software

REMINDER: Key objective is to understand sustainability and growth

Summary of the Steps in Beginning to Build Revenue Forecasts

- Understand the product/service in the specific business
- Focus on the key drivers/factors of revenue and revenue change, IDENTIFY “UNITS” to focus on
- Utilize as much disaggregation as you can get that makes a material difference: reports and presentations to investors are often good indicators for this it is okay to iterate over time
- Consider macro- and addressable market issues and trends
- Try not to overcomplicate the model, allow it to be built top down and bottom up
- Don't forget the competition
- Always consider changes in volumes and price (and currencies) including any interdependency
- Don't assume precision, test out alternative scenarios
- Is your scenario feasible (capacity, inventory, cash available to fund growth)
- Consider the balance sheet and cash flow aspects too....

Understand the Product/Service – What: Product Descriptions May be Available

<ul style="list-style-type: none"> Company Summary <ul style="list-style-type: none"> Tearsheet Corporate Timeline Long Business Description Products Competitors Industry Classifications Offices Analyst Coverage Corporate Governance People <ul style="list-style-type: none"> Professionals Board Members Committees Compensation Financials/Valuation <ul style="list-style-type: none"> Key Stats Income Statement Balance Sheet Cash Flow Multiples Capitalization Capital Structure Summary Capital Structure Details Ratios Supplemental Industry Specific Pension/OPEB Segments Estimates <ul style="list-style-type: none"> CIQ Estimates Peer Analysis <ul style="list-style-type: none"> Quick Comps Credit Health Panel Charting <ul style="list-style-type: none"> Chart Builder Annotated Stock Chart Fixed Income <ul style="list-style-type: none"> Summary Credit Ratings Securities Summary Credit Default Swaps Short Interest Equity Listings Transactions <ul style="list-style-type: none"> M&A/Private Placements Public Offerings Takeover Defenses Transaction Advisors Business Relationships <ul style="list-style-type: none"> Customers Suppliers Strategic Alliances Auditors Investors <ul style="list-style-type: none"> Private Ownership Public Ownership Investor Activism News, Events & Filings <ul style="list-style-type: none"> News Events Calendar Transcripts SEC Filings Filings & Annual Reports Key Documents Key Developments Investments 	S&P CapitalIQ	
	Product Name ^A	Company
	<ul style="list-style-type: none"> ☐ Bowls ☐ Cabinet Doors ☐ Cabinets ☐ Commodes ☐ Credit Cards ☐ Distribution of Faucets ☐ Drawer Boxes ☐ Drawer Fronts ☐ Equipment Rental Services (Future) ☐ Garage and Closet Organization Systems ☐ Installation Services ☐ Installation Services ☐ Laminate Countertops ☐ Lazy Susans ☐ Matching Valances ☐ Molding Products ☐ Online Local Search Solutions ☐ Sales of Acrylic Tub Liners ☐ Sales of Aerators and Toilets ☐ Sales of Bath Fixtures ☐ Sales of Blinds ☐ Sales of Cabinetry Products ☐ Sales of Carpeting Products ☐ Sales of Decking Products ☐ Sales of Dehumidifiers ☐ Sales of Dishwashers ☐ Sales of Door Locks ☐ Sales of Fans ☐ Sales of Fasteners ☐ Sales of Faucets ☐ Sales of Flooring Products ☐ Sales of Furnace and Central Air Systems ☐ Sales of Garden Products ☐ Sales of Generators ☐ Sales of Hand Tools ☐ Sales of Hardware ☐ Sales of Infrared Grills ☐ Sales of Lawn Care Products ☐ Sales of Lighting Products 	<ul style="list-style-type: none"> US Home Systems Inc. US Home Systems Inc. US Home Systems Inc. US Home Systems Inc. The Home Depot, Inc. (NYSE:HD) US Home Systems Inc. US Home Systems Inc. US Home Systems Inc. The Home Depot, Inc. (NYSE:HD) US Home Systems Inc. The Home Depot, Inc. (NYSE:HD) US Home Systems Inc. US Home Systems Inc. US Home Systems Inc. Red Beacon, Inc. US Home Systems Inc. The Home Depot, Inc. (NYSE:HD) US Home Systems Inc. The Home Depot, Inc. (NYSE:HD) The Home Depot, Inc. (NYSE:HD) The Home Depot, Inc. (NYSE:HD)

Our Products. Our product portfolio strategy is aimed at delivering innovation, assortment and value. A typical The Home Depot **store** stocks approximately **30,000 to 40,000 products** during the year, including both national brand name and proprietary items. We also offer over **600,000 products** through our Home Depot and Home Decorators Collection **websites**.

Product Group	Percentage of Net Sales for Fiscal Year	
	February 3, 2013	January 29, 2012
Plumbing, electrical and kitchen	30.8%	30.5%
Hardware and seasonal	29.4	29.5
Building materials, lumber and millwork	20.6	21.1
Paint and flooring	19.2	18.9
Total	100.0%	100.0%

Is there any way to use these?

Source: Home Depot 10-K and CapitalIQ

Understand the Product – Where, What & How: Component Data from Financials



	Fiscal Year(1)				
	2012	2011	2010	2012 vs. 2011	2011 vs. 2010
Net sales	\$ 74,754	\$ 70,395	\$ 67,997		
Net sales increase (decrease) (%)	6.2	3.5	2.8		
STORE DATA					
Number of stores	2,256	2,252	2,248		
Square footage at fiscal year-end	235	235	235		
Increase (decrease) in square footage (%)	—	—	—		
Average square footage per store (in thousands)	104	104	105		
SELECTED SALES DATA					
Number of Customer Transactions (in millions) ⁽²⁾	1,364.0	1,317.5	1,305.7	3.5 %	0.9 %
Average Ticket ⁽²⁾	\$ 54.89	\$ 53.28	\$ 51.93	3.0 %	2.6 %
Weighted Average Weekly Sales per Operating Store (in thousands)	\$ 627	\$ 601	\$ 581	4.3 %	3.4 %
Weighted Average Sales per Square Foot ⁽²⁾	\$ 318.63	\$ 299.00	\$ 288.64	6.6 %	3.6 %
Comparable Store Sales Increase (%) ⁽³⁾	4.6 %	3.4 %	2.9 %	N/A	N/A

$$2,256 * \$627 * 53 = \$74,970$$

$$1,364 * \$54.89 = \$74,870$$

$$235 * \$318.63 = \$74,878$$

What components would you use in your forecasting?

Note: Certain percentages may not sum to totals due to rounding.

- (1) Fiscal years 2012, 2011 and 2010 refer to the fiscal years ended February 3, 2013, January 29, 2012 and January 30, 2011, respectively. Fiscal year 2012 includes 53 weeks; fiscal years 2011 and 2010 include 52 weeks.
- (2) The 53rd week of fiscal 2012 increased customer transactions by approximately 21 million, positively impacted average ticket by approximately \$0.06 and positively impacted weighted average sales per square foot by approximately \$5.51.
- (3) Includes Net Sales at locations open greater than 12 months, including relocated and remodeled stores and excluding closed stores. Retail stores become comparable on the Monday following their 365th day of operation. Comparable store sales is intended only as supplemental information and is not a substitute for Net Sales or Net Earnings presented in accordance with generally accepted accounting principles. Net Sales for the 53rd week of fiscal 2012 are not included in comparable store sales results for fiscal 2012.

Source: Home Depot 10-K

WHO? - The Financial Statements (MD&A) Gives a Guide on Customers

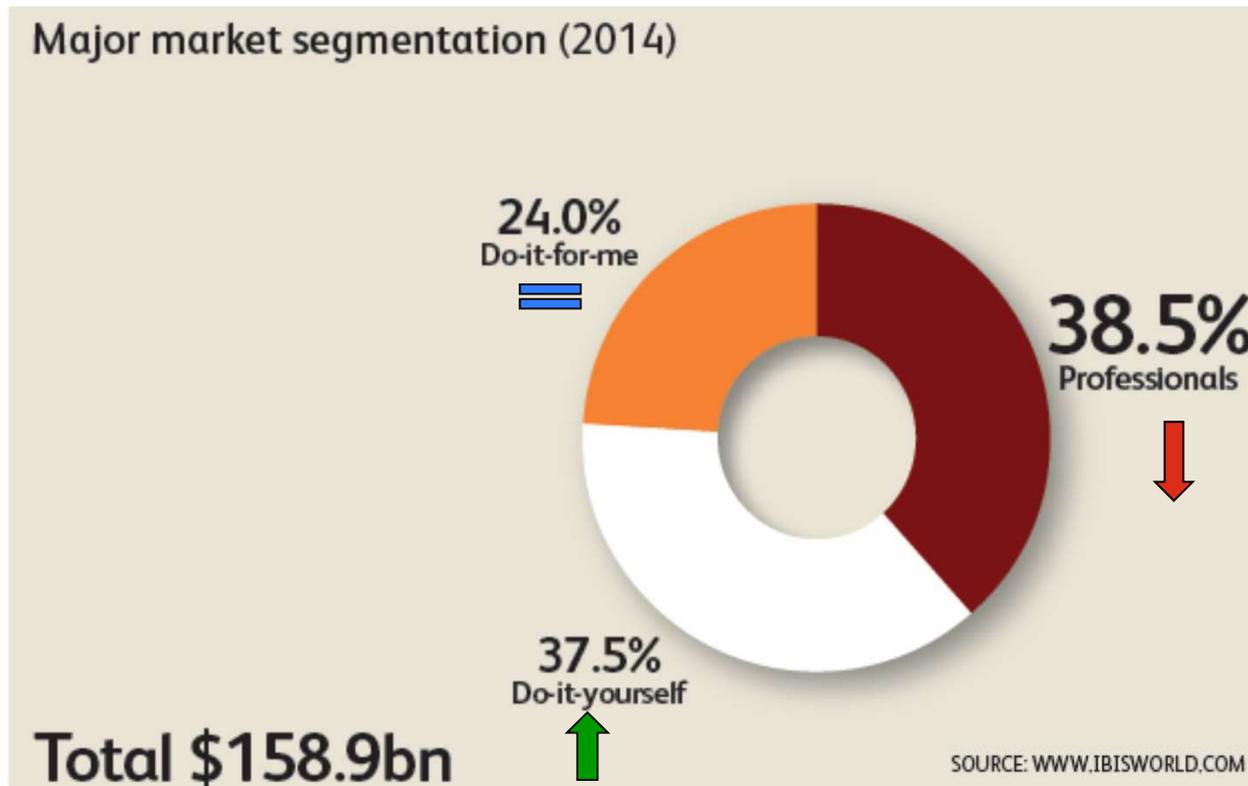
Customer Service

Our Customers. The Home Depot stores serve three primary customer groups, and we have different customer service approaches to meet their particular needs:

- **Do-It-Yourself ("D-I-Y") Customers.** These customers are typically home owners who purchase products and complete their own projects and installations. Our associates assist these customers with specific product and installation questions both in our stores and through online resources and other media designed to provide product and project knowledge. We also offer a variety of clinics and workshops both to impart this knowledge and to build an emotional connection with our D-I-Y customers.
- **Do-It-For-Me ("D-I-F-M") Customers.** These customers are typically home owners who purchase materials themselves and hire third parties to complete the project or installation. Our stores offer a variety of installation services targeted at D-I-F-M customers who select and purchase products and installation of those products from us in the store. Our installation programs include products such as carpeting, flooring, cabinets, countertops and water heaters. In addition, we provide professional installation of a number of products sold through our in-home sales programs, such as roofing, siding, windows, furnaces and central air systems.
- **Professional Customers.** These customers are primarily professional remodelers, general contractors, repairmen, small business owners and tradesmen. We offer a variety of special programs to these customers, including delivery and will-call services, dedicated staff, expanded credit programs, designated parking spaces close to store entrances and bulk pricing programs for both online and in-store purchases. We recognize the unique service needs of the professional customer and use our expertise to facilitate their buying experience.

Source: Home Depot 10-K

Where is there room for growth? Industry Percentages



Who is Buying and Why/What are they Buying?

HD Customers:

Professionals

± 3-4% Transactions
± 37% Revenue

Do it Yourself

Do it For Me

- **How Does this Impact What they Buy and the Price they Are Willing to Pay?**
- What will drive increase in customers and different types?
 - Macro factors
 - Firm-specific
 - Region Specific
 - Seasonal

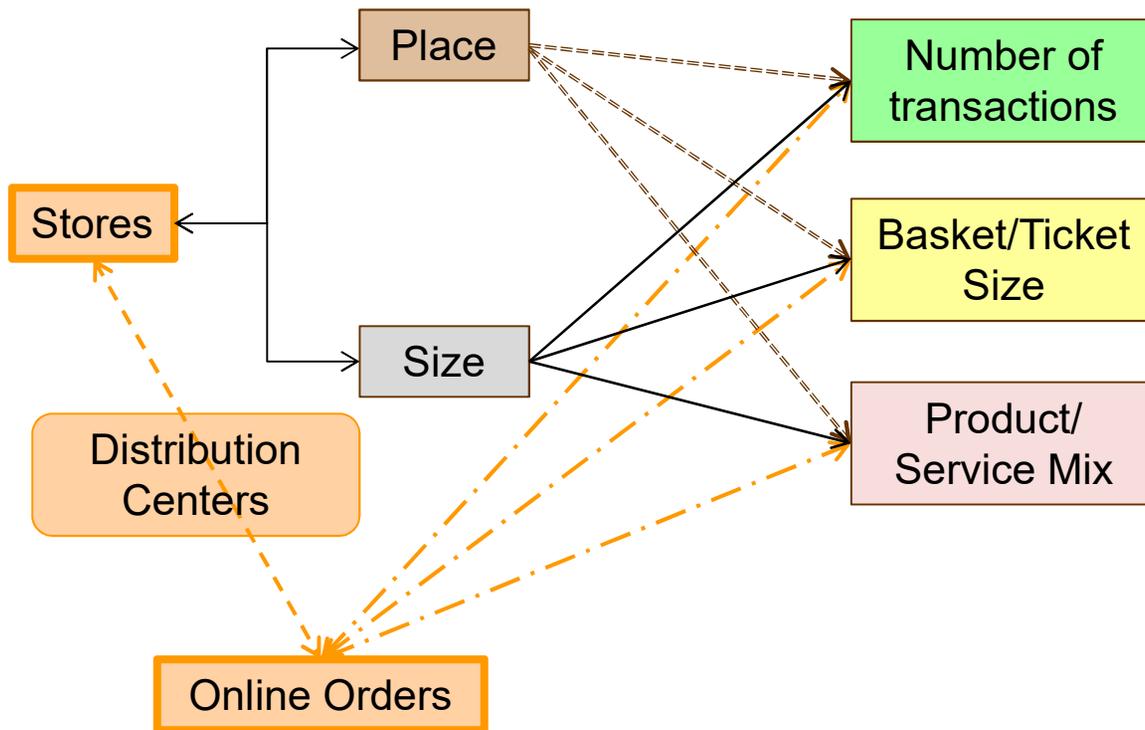
Some Drivers of Revenue for Home Depot (and many retail businesses)

Customers:

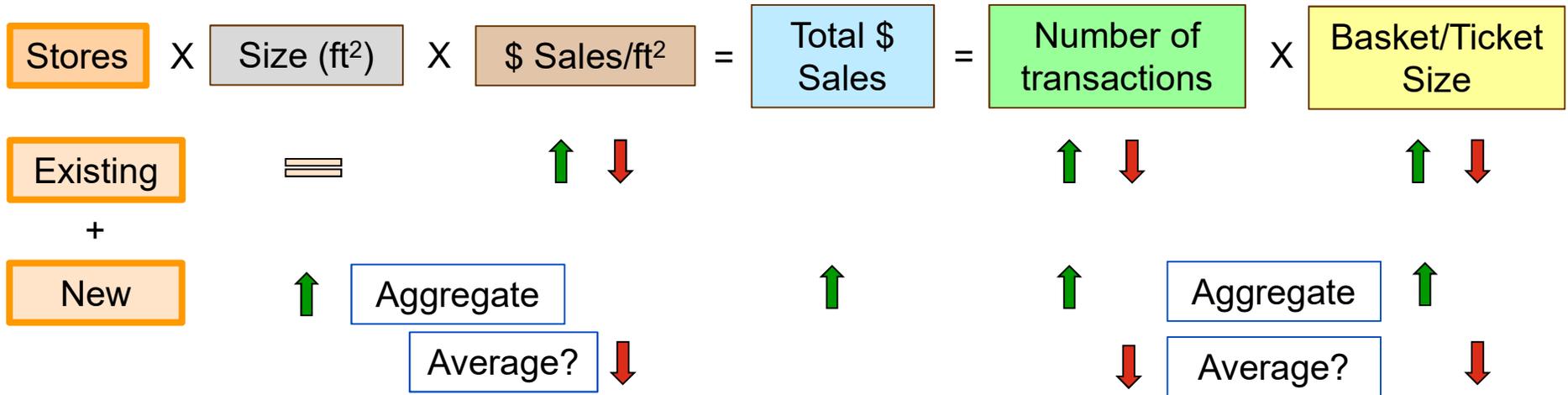
Professionals

Do it Yourself

Do it For Me



Setting up the Model (Framework)



- Influencers:**
- Macro factors
 - Customer Mix
 - Product mix
 -

Geography (where), Product Categories (what) and Customers (who) Drive the Business

Frank Blake - *The Home Depot, Inc.* - Chairman, CEO

Home Depot Q3 Transcript of Investor Call & 3Q10-Q

Thank you, Diane, and good morning, everyone. Sales for the third quarter were \$19.5 billion, up 7.4% from last year. Comp sales were positive 7.4% and our diluted earnings per share were \$0.95. Our U.S. stores had a positive comp of 8.2%.



From a geographic perspective, sales were strong across the U.S. All of our U.S. regions posted positive comps in the quarter, as did 39 of our top 40 markets. The only exception was New Orleans, which anniversaried the impact of Hurricane Isaac from last year. Our Mid-south, Southeast, and Pacific North regions had our strongest comp performance with double-digit gains.

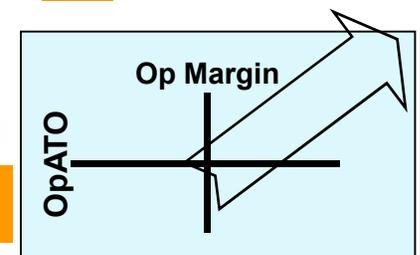


During the quarter, we saw strong growth in both transactions and ticket. We have now had ten consecutive quarters of transaction and ticket growth, which we view as an encouraging sign of the balance in the growth of our business. We were also able to achieve operational improvement across key elements of our business, with improvement in inventory turns, shrink performance and continued expense leverage.

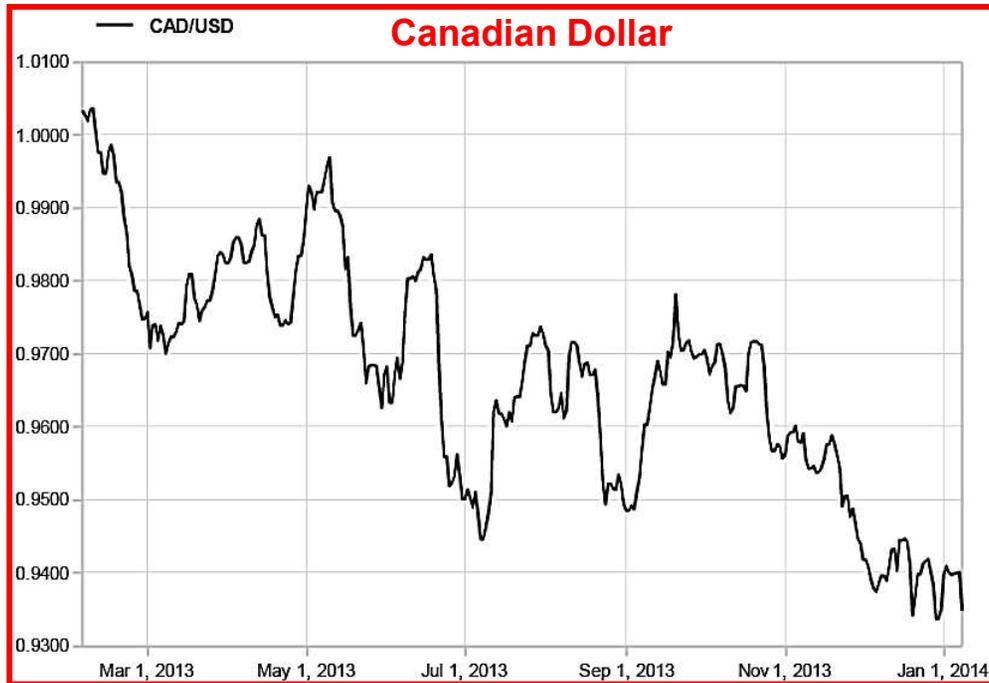


On merchandising, as Craig will detail, the core categories of the store were solid and we saw strength in larger-ticket categories, such as appliances and countertops. Project-based categories, such as tile and vanities, performed well, and our services business grew double digits.

The recovery of our Pro business continues. In the third quarter, our Pro business grew at a slightly faster pace than our Consumer business. In addition to sales from our Pro customers, we also tracked whether we are drawing an increased number of Pros. We household our customer data, looking at unique customers and account numbers, and we have seen a steady year-over-year increase in the Pro segment.



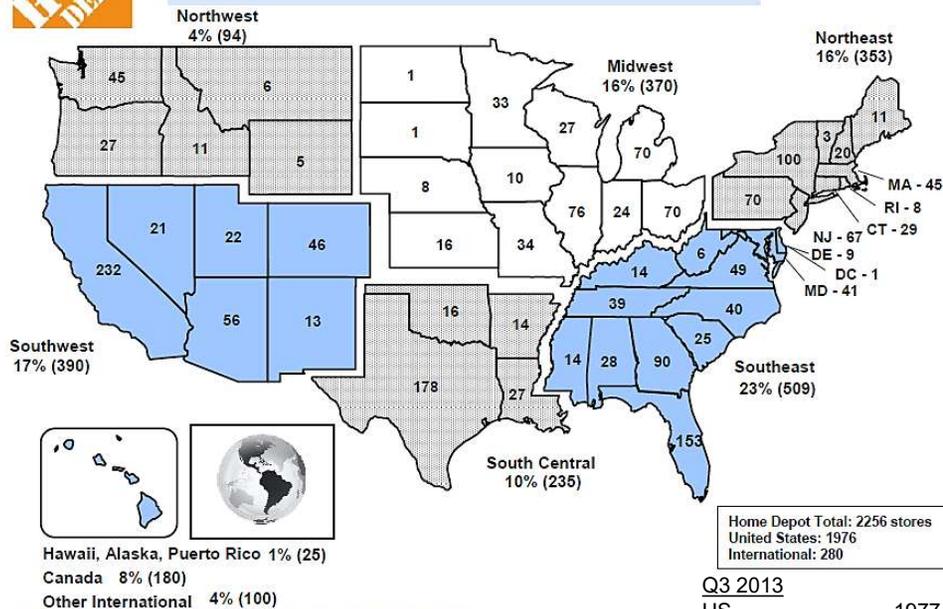
What Happened to the Exchange Rates in FYR 2013



WHERE: Distribution of the Stores – HD vs LOW



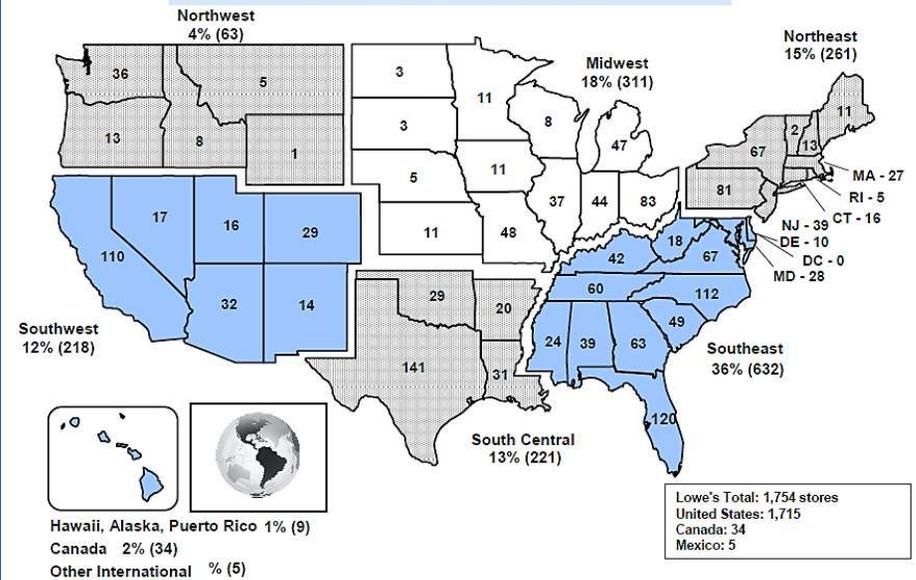
HD - The Home Depot, Inc. Total Store Locations



Source: Company's 10-K and Morgan Stanley Research. (Note: HI, AK, and PR include 2 Virgin Island and 1 Guam location.)



LOW - Lowe's Companies, Inc. Total Store Locations

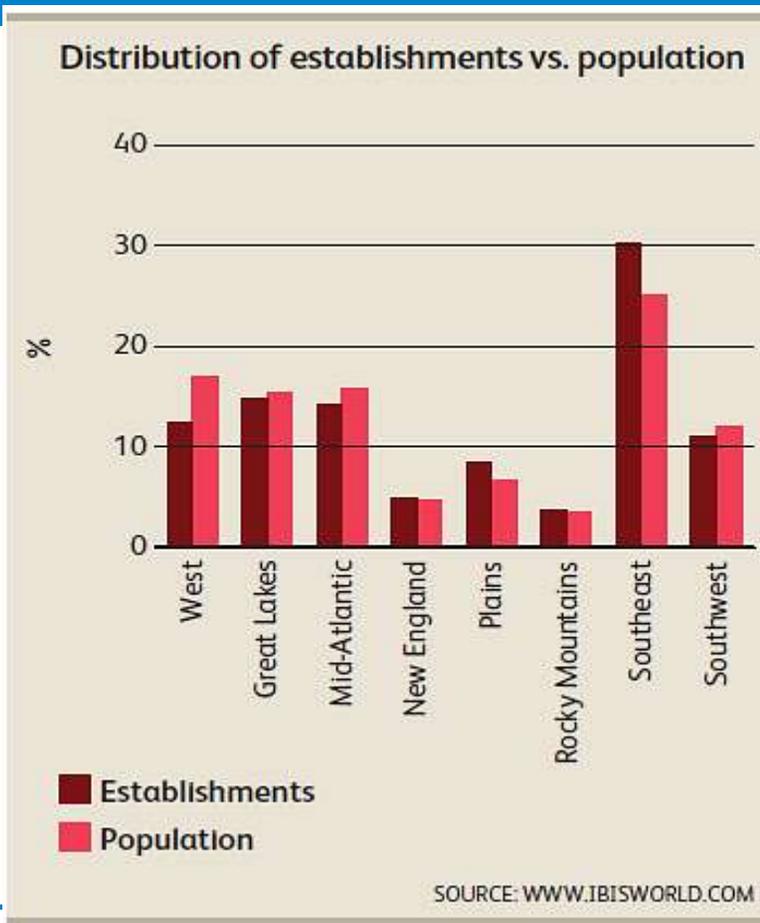


Source: AlphaVue and Morgan Stanley Research.

Source: Morgan Stanley Retail Atlas 4-24-13

What are some Implications of the Number and Distribution of the Stores?

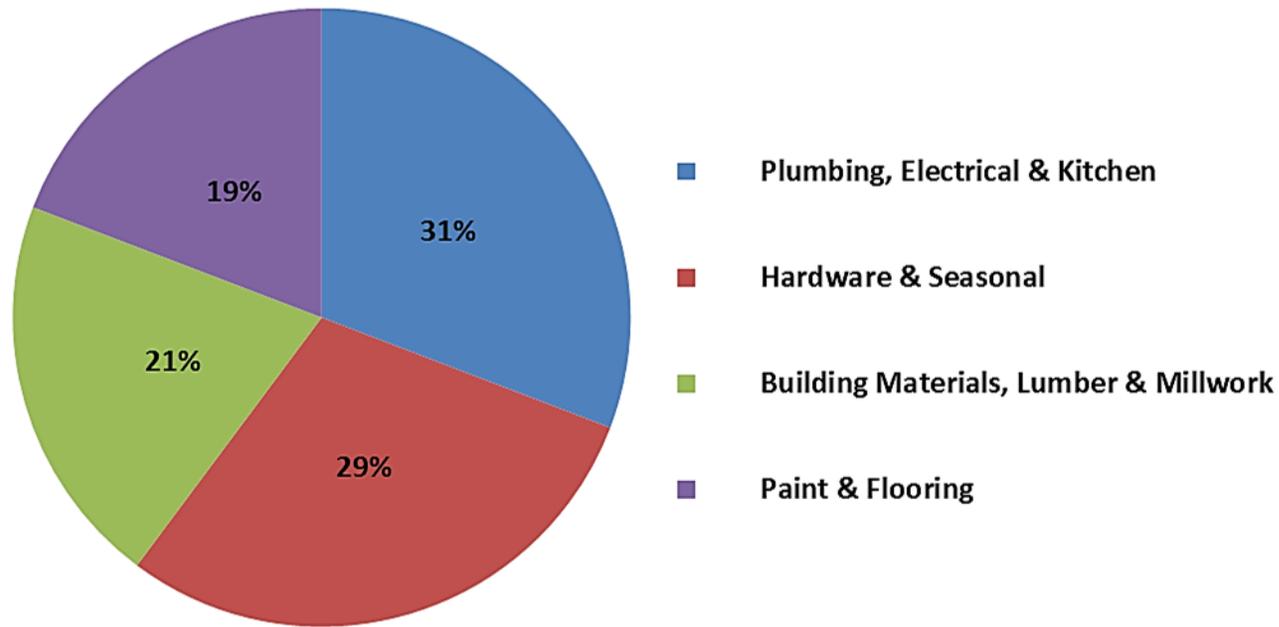
Locations should be linked to Population + Growth + Weather



• Where is the growth (\pm) potential and who is there?

What Large Product Mixes – Historical Patterns of HD's Mix

Revenue by Major Product Group - 2012



- Taking the detail to the published financials is tricky...
- What else would we want?
- How might we use them?

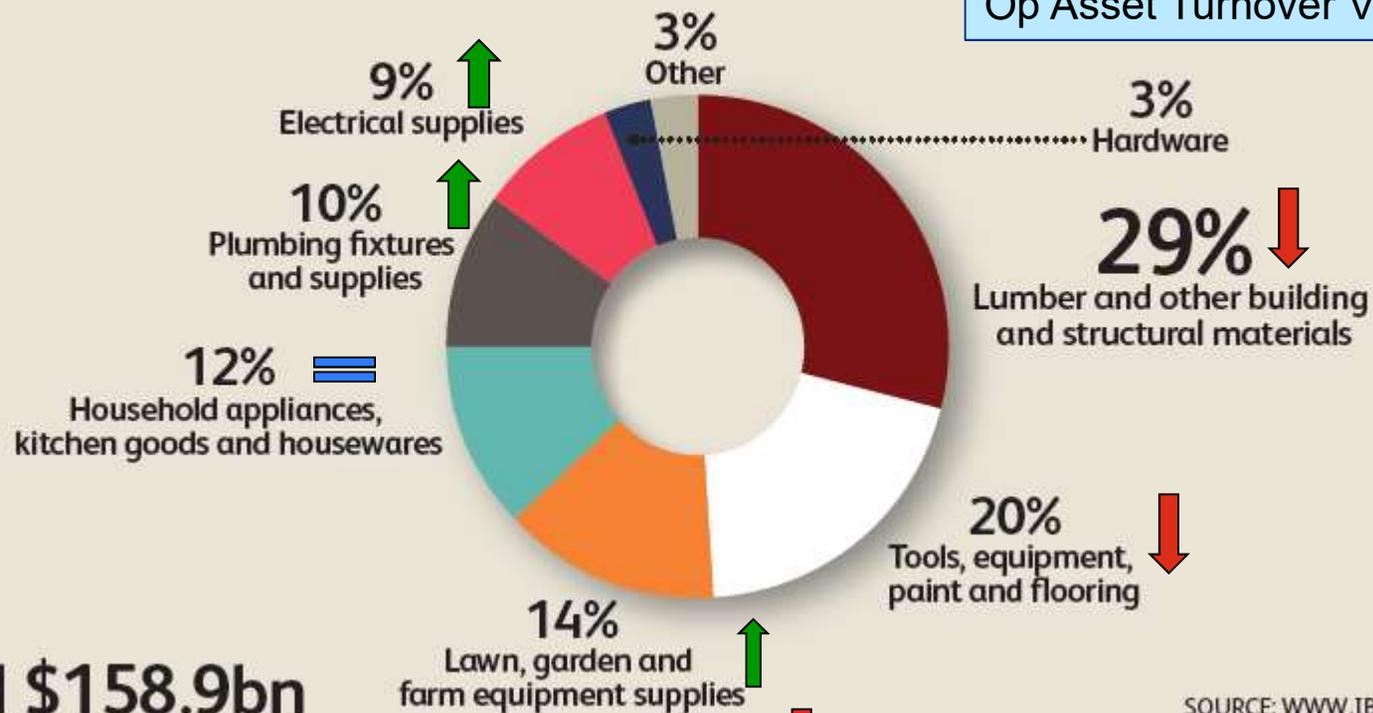
Description	2010	2011	2012	2010	2011	2012
Revenue by Major Product Group	67,997	70,395	74,754			
Plumbing, Electrical & Kitchen	20,399	21,470	23,024	30%	31%	31%
Hardware & Seasonal	19,991	20,767	21,978	29%	30%	29%
Building Materials, Lumber & Millwork	14,755	14,853	15,399	22%	21%	21%
Paint & Flooring	12,851	13,305	14,353	19%	19%	19%

Source: Bloomberg BI and Company reports

Where is there room for growth? Industry Product Mix

Products and services segmentation (2014)

How would Op. Margins or Op Asset Turnover Vary?



Total \$158.9bn

SOURCE: WWW.IBISWORLD.COM

Product Categories and Customers Drive the Business

Craig Menear - *The Home Depot, Inc. - EVP of Merchandising* Home Depot Q3 Transcript of Investor Call & 3Q10-Q

All merchandising departments posted positive comps. Kitchens, lighting, decor, lumber, electrical, indoor garden, paint and bath were above the company average. Millwork, flooring, plumbing, outdoor garden, building materials, hardware and tools performed positively, but were below the company average.

In the core of the store, maintenance and repair categories saw continued positive comp performance in products like ladders, light bulbs, air circulation, wiring devices, pipes and fittings, fasteners and builders' hardware. There was also strength in decor, with comps above the company average in categories such as lighting, countertops, floor and wall tile, window coverings, faucets, vanities, fixtures and special-order carpet. As Frank mentioned, Pro customer sales continue to gain strength, and while Pros shop across the store, we saw double-digit comp growth in categories such as gypsum, concrete, pressure-treated lumber and moldings.

Relevant information is provided about what you can choose to consider

Key is always to ask what it says about growth and sustainability

?

Mild weather throughout much of the quarter and across the country continued to drive sales in our exterior project categories. For example, sales in exterior stains and water sealers, pressure washers and exterior paint all posted comps above the company average.

?

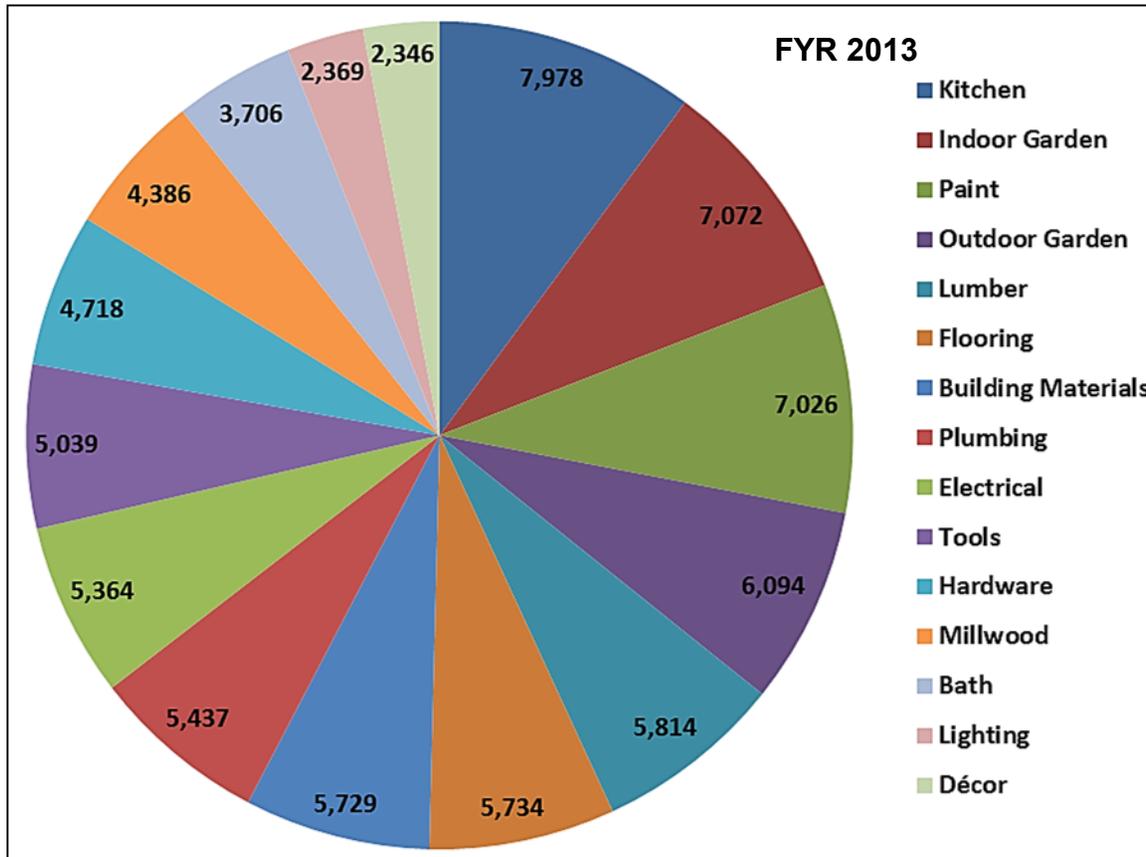
Total transactions grew by 4%, while average ticket increased 3.2% for the quarter. Our average ticket increase was positively impacted somewhat by commodity price inflation from products such as lumber and copper. The total impact to comp growth from commodity inflation was approximately 45 basis points.

?

Transactions for tickets under \$50, representing approximately 20% of our U.S. sales, were up 3.1% for the third quarter. Transactions for tickets over \$900, also represented in approximately 20% of our U.S. sales, were up 10.3% in the third quarter. The drivers behind the increase in big-ticket purchases were continued strength in our Pro business, appliances, HVAC, countertops and in-stock kitchens.

?

Net Sales of Products Now Provided as Part of Segment Disclosure

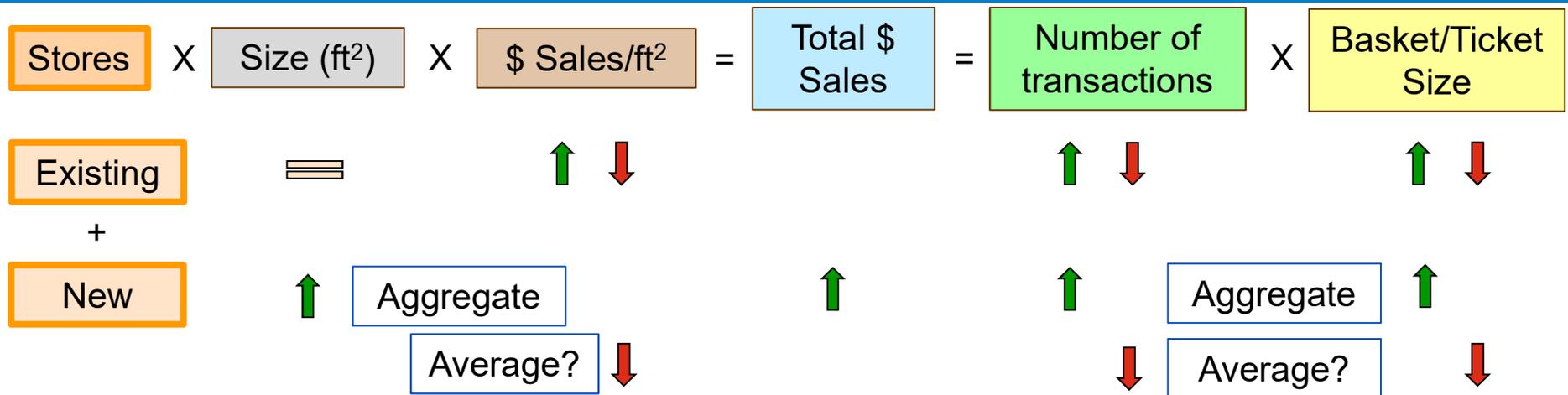


Always check for changes in disclosed information

What Can You Learn From the Historical Breakdown of Product Net Sales?

Product Category	Fiscal Year Ended					
	February 1, 2015		February 2, 2014		February 3, 2013	
	Net Sales	% of Net Sales	Net Sales	% of Net Sales	Net Sales	% of Net Sales
Kitchen	\$ 8,403	10.1%	\$ 7,978	10.1%	\$ 7,022	9.4%
Indoor Garden	7,550	9.1	7,176	9.1	6,907	9.2
Paint	7,300	8.8	7,026	8.9	6,764	9.0
Outdoor Garden	6,394	7.7	6,154	7.8	5,958	8.0
Building Materials	6,055	7.3	5,729	7.3	5,594	7.5
Lumber	6,050	7.3	5,814	7.4	5,454	7.3
Flooring	5,986	7.2	5,734	7.3	5,469	7.3
Plumbing	5,740	6.9	5,437	6.9	5,126	6.9
Electrical	5,648	6.8	5,360	6.8	5,036	6.7
Tools	5,384	6.5	4,876	6.2	4,533	6.1
Hardware	4,974	6.0	4,718	6.0	4,580	6.1
Millwork	4,694	5.6	4,386	5.6	4,281	5.7
Bath	3,923	4.7	3,706	4.7	3,552	4.8
Décor	2,576	3.1	2,346	3.0	2,225	3.0
Lighting	2,499	3.0	2,372	3.0	2,253	3.0
Total	\$83,176	100.0%	\$78,812	100.0%	\$74,754	100.0%

Relating the Information to the Model (Framework)



What should be impacted?

New Trends: Implications of Updated Data_What it is and How we Might Use it

- wsj.com/us-retail-sales/

NAICS ¹ code	Kind of Business	Not Adjusted						Adjusted ²					
		12 Month Total		2014			2013		2014			2013	
		2014	% Chg. 2013	Dec. ³ (a)	Nov. (p)	Oct. (r)	Dec.	Nov.	Dec. ³ (a)	Nov. (p)	Oct. (r)	Dec. (r)	Nov. (r)
	Retail & food services,												
	total	5,271,229	4.0	505,251	442,348	442,124	483,162	429,408	442,931	447,121	445,276	429,329	427,081
	Total (excl. motor vehicle & parts) ...	4,213,570	3.0	415,412	360,626	354,841	402,594	351,825	351,856	355,424	355,008	345,431	342,464
	Retail	4,700,478	3.8	455,441	395,135	392,522	437,087	384,546	393,319	397,890	396,214	383,483	380,688
444	Building material & garden eq. & supplies dealers	328,017	5.0	24,848	26,077	28,588	23,158	24,693	27,517	28,050	27,607	26,167	25,899
4441	Building mat. & sup. dealers	(*)	(*)	(*)	21,920	24,369	19,213	21,019	(*)	23,294	23,011	21,734	21,691
722	Food services & drinking places ...	570,751	5.8	49,810	47,213	49,602	46,075	44,862	49,612	49,231	49,062	45,846	46,393

(*) Advance estimates are not available for this kind of business.

(NA) Not available (a) Advance estimate (p) Preliminary estimate (r) Revised estimate

Why did the stock market react so negatively to this news?

Source: WSJ and Monthly Census Retail Sales Figures Jan 14 2015

Stores Confront New World of Reduced Shopper Traffic

E-Commerce Not Only Siphons Off Sales, but Changes Shopping Habits

By SHELLY BANJO and DREW FITZGERALD

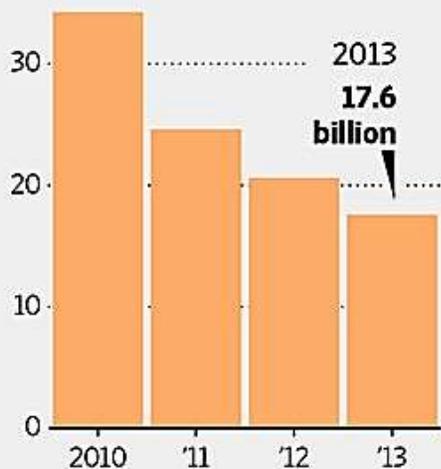
Updated Jan. 16, 2014 9:38 p.m. ET

New Trends

Permanent Slowdown?

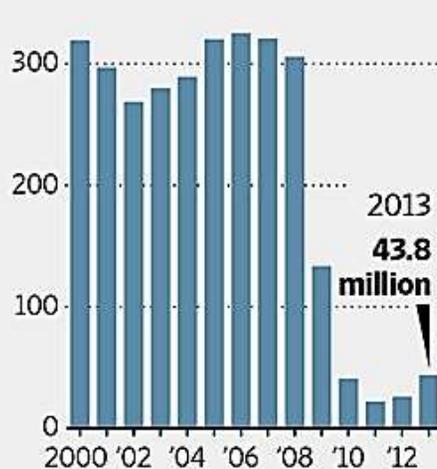
Total retail foot traffic for November and December

40 billion visits



Amount of new retail space opened annually

400 million square feet



Note: Traffic data is collected from 60,000 traffic-tracking devices installed at malls and large retailers. Retail space is reported for 54 of the largest U.S. markets.

Sources: ShopperTrak (visits); CoStar Group (square footage)

The Wall Street Journal

What is the implication of this, i.e. how could you use it in looking ahead as a manager or investor?

WHO: Greater Sales Originating Online can drive/distort Sales/ft²

Interconnected Retail – Where Online Increases Traffic and Conversion in Stores, and Stores Do the Same for Online



	2012 ¹⁾	2013F	% change
In-Store Sales (billions)	\$71.8	~\$76.3	~6%
Online Sales (billions) ²⁾	\$1.8	~\$2.7	~50%
Total	\$73.6	~\$79.0	~7%
Square Feet (millions)	235	236	~0.4%
Sales / Square Feet	\$313	~\$335	~7%

Differentiate New and Existing Stores

Driving Productivity Without Adding Square Footage

Why is this somewhat misleading?

1) Based on fiscal 2012 52-WK year; 2) Consists of Net Sales generated online through the Home Depot and Home Decorators Collection websites for products delivered to customer locations or picked up in stores through our Buy Online Pick up In Store (BOPIS) and Buy Online Ship to Store (BOSS) programs

What Really Changed in FYR 2013 and What Does it Mean for Future?

	Fiscal Year		
	2013	2012	2011
SELECTED SALES DATA			
Number of Customer Transactions (in millions) ⁽²⁾	1,390.6	1,364.0	1,317.5
Average Ticket ⁽²⁾	\$ 56.78	\$ 54.89	\$ 53.28
Sales per Square Foot ⁽²⁾	\$ 334.35	\$ 318.63	\$ 299.00
Comparable Store Sales Increase (%) ⁽³⁾	6.8%	4.6%	3.4%
Online Sales (% of Net Sales) ⁽⁴⁾	3.5%	2.4%	1.8%

Management Analyst and Investor Day was just before year end
New CEO and communication channels seemed to have changed

Source: Home Depot FYR 2013 10-K

Understanding is Facilitated with Understanding the Operating Cycle

Understand the Product/Service
- What is it?
- How is it produced?
- Where is it produced?
Who is buying it (why are they buying it)?
How is it sold?
Where is it sold?
What is pricing?
How are customers going to pay for it?
When are they paying for it?
What is the feasible market size?
How competitive is the market and how well is entity positioned?
What macro drivers impact any of these?
How is the revenue accounted for/reported?



How do we consider these in building a forecast or business plan?

Outline

- Vendor Financing i.e. Use of Credit and its Implications
- Example of how fundamental analysis has helped highlight issues before they were “priced in”?
- Some Revenue Recognition perspectives
- Some revenue related earnings quality ratios to consider

Financing Customers: An Overview of Types, Opportunities and Risks

Types of Financing of Revenue

Financing

- Discounting/Incentives
- Extended terms
- Taking on High Credit Risk
- Commitments
- Fair value changes

Bundling of Products/ Services/Financing

Where is the Opportunity/Risk?

- Good practice vs. “stuffing the channel”
- Taking market share or increasing risk
- Counterparties and collateral
- Creating and bringing forward revenue
- How useful are “prices” from markets vs. models

- When do you recognize and how much do you allocate to each part?
- Backlog/timing of long dated portions

Key Questions to Ask When Analyzing Revenue-Financing Customers

How are sales and/or customers financed? Are terms competitive?

Does the company provide any guarantees or commitments to its customers?

Is financing being used to sell marginal products or to marginal customer?

When is cash actually received?

Are Days Sales Outstanding (DSOs) consistent with past trends and present competitive setting?

Is the recognition of charge-offs and provisions consistent with pattern of expected risk and trends of the underlying receivables?

Does the company report deferred revenues? How are these earned out, and does the model reflect this? Are annual changes consistent with cash flows?

What the Financial Statements Tell Us About Customer Financing



amounts in millions, except share and per share data

	<u>February 1, 2015</u>	<u>February 2, 2014</u>
ASSETS		
Current Assets:		
Cash and Cash Equivalents	\$ 1,723	\$ 1,929
Receivables, net	1,484	1,398
Merchandise Inventories	11,079	11,057
Other Current Assets	1,016	895
Total Current Assets	<u>15,302</u>	<u>15,279</u>

Accounts Receivable

The Company has an agreement with a third-party service provider who directly extends credit to customers, manages the Company's private label credit card program and owns the related receivables. The Company evaluated the third-party entities holding the receivables under the program and concluded that they should not be consolidated by the Company. The agreement with the third-party service provider expires in 2018, with the Company having the option, but no obligation, to purchase the receivables at the end of the agreement. The deferred interest charges incurred by the Company for its deferred financing programs offered to its customers are included in Cost of Sales. The interchange fees charged to the Company for the customers' use of the cards and any profit sharing with the third-party service provider are included in Selling, General and Administrative expenses ("SG&A"). The sum of the three is referred to by the Company as "the cost of credit" of the private label credit card program.

In addition, certain subsidiaries of the Company extend credit directly to customers in the ordinary course of business. The receivables due from customers were \$68 million and \$57 million as of February 1, 2015 and February 2, 2014, respectively.

The Company's valuation reserve related to accounts receivable was not material to the Consolidated Financial Statements of the Company as of the end of fiscal 2014 or 2013.

We help our DIY, DIFM and professional customers finance their projects by offering private label credit products in our stores through third-party credit providers. In fiscal 2014, our customers opened approximately 2.9 million new The Home Depot private label credit accounts, and at fiscal year end the total number of The Home Depot active account holders was

How do we typically think about and forecast receivables? What are the implications for cash usage and needs?

- Restaurants?
- Airlines?
- Banks?
- Energy and Utilities?
- Food and Beverage Producers?
- Hospitals and Medical Practitioners?
- Pharmaceutical manufacturers?
- Real Estate Owners/Managers?
- Retailers?
- Software and SaaS sellers?

Analyzing and Forecasting Receivables DSO description

Exhibit 4

The Apples-to-Apples Earnings Monitor — What the Measures Mean

Basic Measure	What Can It Show?	When Is It Good News? 	When Is It a Concern? 	Some Questions to Ask
Days Sales Outstanding (DSO)	<p>Credit terms for customers.</p> <p>End-of-period acceleration of sales, or “channel stuffing.”</p> <p>Potential risks of bad debts.</p>	<p>Reduced or low DSO (without slowing revenue) indicate efficient working capital management and increase the likelihood of sustainable revenues from strong demand.</p> <p>A rise in DSO can be positive if it relates to a surge in demand or a large contract from introduction of new product.</p>	<p>A sudden rise in DSO can be a sign of “channel stuffing” that indicates unsustainable revenues.</p> <p>A broad rise in DSO can indicate extended credit terms that may result from increasing competition or lower-quality customers, increasing the risk of unsustainable revenue.</p>	<p>Have any receivables been discounted/factored or securitized? If so, consider DSO after adding these back.</p> <p>Are changes in DSO in-line with those of competitors?</p> <p>Is change in DSO affected by a change in product or geographic mix?</p> <p>Can period-end changes be explained by legitimate new business/contracts?</p> <p>How are DSO affected by acquisitions/dispositions of other businesses?</p> <p>Are DSO affected by a shift between current and long-term receivables?</p>

Analyzing and Forecasting Receivables

Exhibit 5

The Apples-to-Apples Earnings Monitor — The Measures and Where to Find Them

Basic Measure	Calculation	Potential Complications to Watch For	Where to Find the Information
Days Sales Outstanding (DSO)	$\left(\frac{\text{Trade Receivables}}{\text{Revenues}} \right) * \text{Number of Days in Period}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Make sure aligned with the receivables </div>	<p>Discounted/factored or securitized receivables should be added back.</p> <p>Split between long- and short-term receivables.</p> <p>Receivables relating to deferred revenue should be excluded (and often already are).</p> <p>Impact of currencies as receivables and revenues are measured at different rates.</p>	<p>Receivables are on the balance sheet (can be current or long term).</p> <p>Revenues are in the income statement.</p> <p>Securitized receivables are sometimes disclosed in the liquidity section of Management's Discussion and Analysis of operations (MD&A).</p>

Analyzing Receivables and Provisions: Loan Loss Reserve Ratio

Exhibit 4 (continued)

The Apples-to-Apples Earnings Monitor — What the Measures Mean

Basic Measure	What Can It Show?	When Is It Good News? 	When Is It a Concern? 	Some Questions to Ask
Loan Loss Reserves Ratio (LLRR)	<p>Proportion of receivables or loans that will not be realized with cash.</p> <p>Conservatism of management and their credit policies.</p>	<p>A low (decreasing) ratio can mean that there is a tight credit policy and revenues are likely to lead to cash receipts.</p> <p>A high (increasing) ratio can indicate that there is only a small chance of a future charge from non-payments.</p>	<p>A low (decreasing) ratio can mean that past earnings have been overstated as expenses are too low.</p> <p>A high (increasing) ratio may indicate poor credit analysis and sales are being created by too-lenient credit terms that cannot be sustained over time.</p>	<p>How does the LLRR compare to sector norms and risk/return relationships?</p> <p>Given the macro indicators, is the LLRR reasonable?</p> <p>Is the LLRR consistent with changes in the customer or product mix?</p> <p>Have there been any significant write-offs that explain a change in the LLRR?</p> <p>Has the company changed its credit policies and is this reflected in the change in LLRR?</p> <p>Are the DSO and LLRR sending consistent messages?</p> <p>How does the annual level of LLR compare to the actual bad debt expense each year? If it is consistently low (high), future earnings will be negatively (positively) affected.</p>

Avoiding Pitfalls: Well-Known Problems that Could Have Been “Avoided” in 1997-2002

Xerox - Residual values in sales financing, R&D, joint venture

Asia Pulp and Paper - Related Party Transactions, Capitalized Interest, FX

Enron - Profitability, related party transactions, mark-to-market, FX, SPE

Qwest - Revenues, pensions, capitalized expenses, business combinations

Ford - Related credit company, securitization, loan loss reserves

Flextronics - Acquisitions, share based payments, ROIC

Tyco - Acquisitions, restructuring charges, margins, securitization, ROIC

TAKEAWAY: There are many cases where relating the fundamentals to what is being reported is not reflected in market prices: including understanding revenue growth....

An Example of How DSOs can be Distorted

Extract from Tyco Cash Flow from Operations 10K F2001

	TYCO INDUSTRIAL		
	FOR THE YEAR ENDED SEPTEMBER 30,		
	2001	2000	1999
Net income	\$ 3,970.6	\$ 4,519.9	\$ 1,022.0
Provisions for losses on accounts receivable, inventory and credit losses	593.5	354.3	211.5
Other non-cash items	81.8	60.0	26.6
Changes in assets and liabilities, net of the effects of acquisitions and divestitures:			
Accounts receivable	(434.1)	(992.4)	(796.0)
Proceeds from accounts receivable sale	490.6	100.0	50.0
Inventories	(678.8)	(850.0)	(124.4)
Other assets	121.2	129.1	488.1
Accounts payable, accrued expenses and other liabilities	269.9	(551.1)	496.8
Income taxes	370.7	896.4	(10.2)
Other	(94.2)	128.4	(96.1)

Cash flow from Operations and Day Sales Outstanding potentially distorted by sales of receivables

Securitization of Receivables – Tyco FYR 9/2001

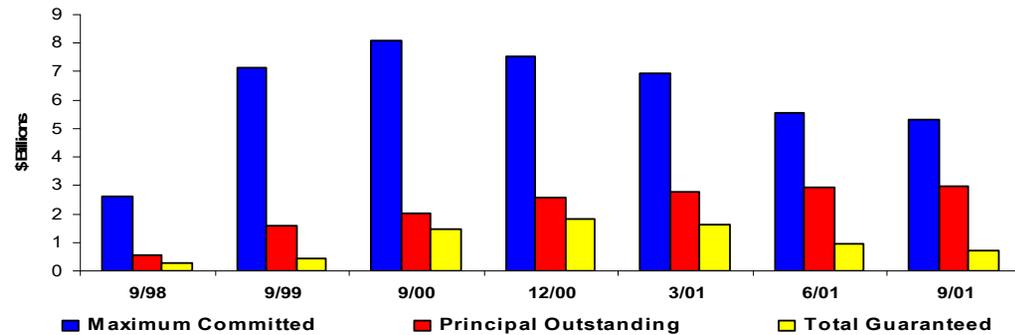
• **In September 2001**, TIG entered into a separate agreement to sell a defined pool of trade accounts receivable from time to time to a financial institution in Europe. The availability under this program is \$175.0 million. **TIG sold certain accounts receivable under this program for net proceeds of \$160.0 million**, which is net of a discount of \$1.4 million.

Also in September 2001, Tyco Industrial sold certain accounts receivable to Tyco Capital for net proceeds of approximately \$297.8 million, which is net of a discount of \$4.3 million. This sale is eliminated as an intercompany transaction in Tyco's Consolidated Financial Statements.

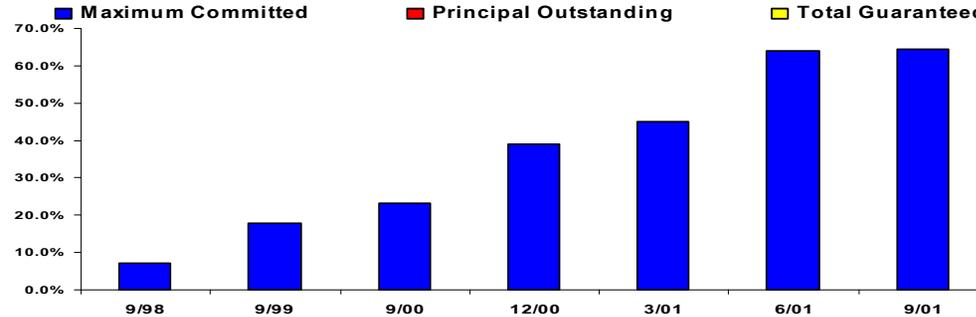
- **Why are these done in September?**
- **What is the economic benefit (business purpose) of securitization with a captive finance company?**

Vendor Financing - Lucent

Customer Financing



Principal Outstanding/
Accounts Receivable



- Questions to Ask:
- Commitments are used to facilitate revenues but can be at a future cost.
 - Commitments can create liquidity problems at the worst time.

Questions we Need to Consider - Macro aspects

Understand the Product/Service

- What is it?
- How is it produced?
- Where is it produced?

Who is buying it (why are they buying it)?

How is it sold?

Where is it sold?

What is pricing?

How are customers going to pay for it?

When are they paying for it?

What is the feasible market size?

How competitive is the market and how well is entity positioned?

What macro drivers impact any of these?

How is the revenue accounted for/reported?



REMINDER: Key objective is to understand sustainability and growth

Addressable Market for Home Improvement



A MEMBER-SUPPORTED RESEARCH GROUP SERVING THE HOME IMPROVEMENT INDUSTRY

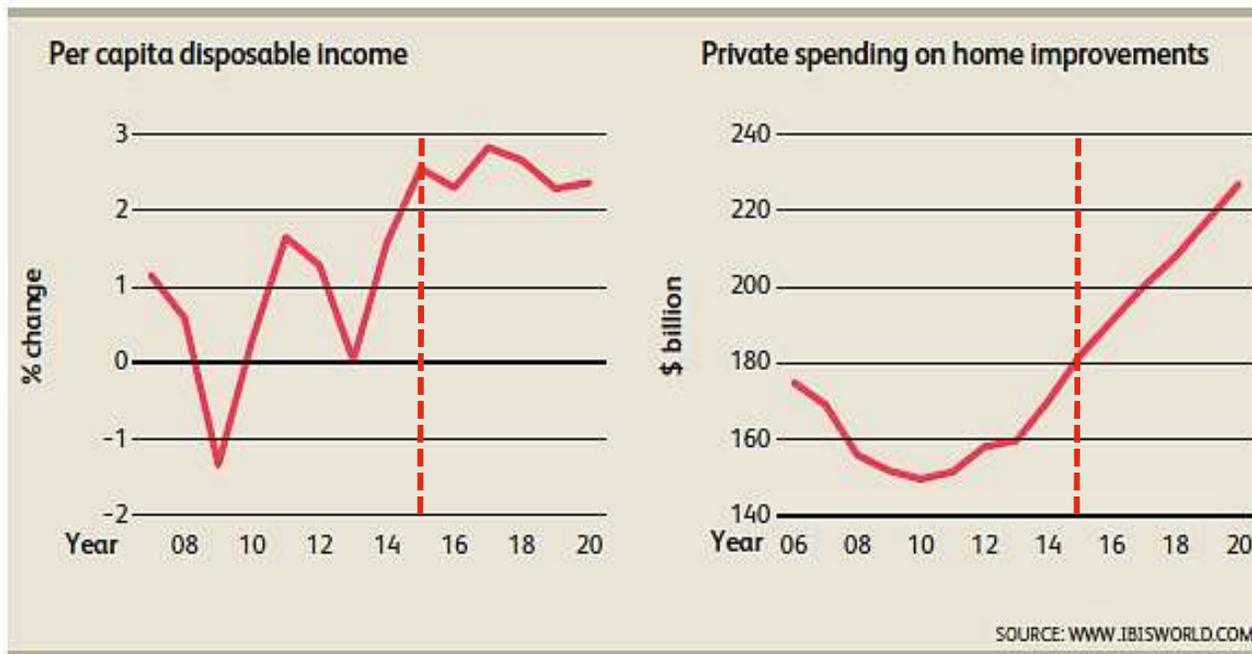
Outlook for the Home Improvement Products Market

- The major home center companies saw an acceleration of sales growth in the second quarter. Although other channels of distribution for home improvement products have not matched their near double-digit growth, we have revised our overall market size forecast for the year upward. We expect total home improvement product sales to increase 5.4% in 2013 to \$293 billion. Consumer Market sales are expected to increase by 5.2% and Professional Market sales by 5.7%.
- With housing market activity and real income growth now on a slightly higher trajectory in our macroeconomic forecast, we have also boosted projected growth rates for home improvement product sales over the next two years. We expect growth averaging 6.9% in 2014-2015, with a slight deceleration in the following three years as the housing market cycle runs its course.
- With recent revisions in the Census Bureau source data for our market size estimates, we now show stronger growth of home improvement product sales in 2011 and slightly slower growth in 2012 (increases of 4.5% and 5.0%, respectively, while previous estimates showed growth rates of 3.2% and 5.4%).

Growth rates of Total Home Improvement market size for the current year and 5-year forecast periods are as follows:

	2013	2014	2015	2016	2017	2018
HD = 24%						
Billion Dollars	293.0	312.9	334.9	351.8	367.7	383.7
% Change	5.4	6.8	7.0	5.0	4.5	4.3

A View of Total Addressable Market

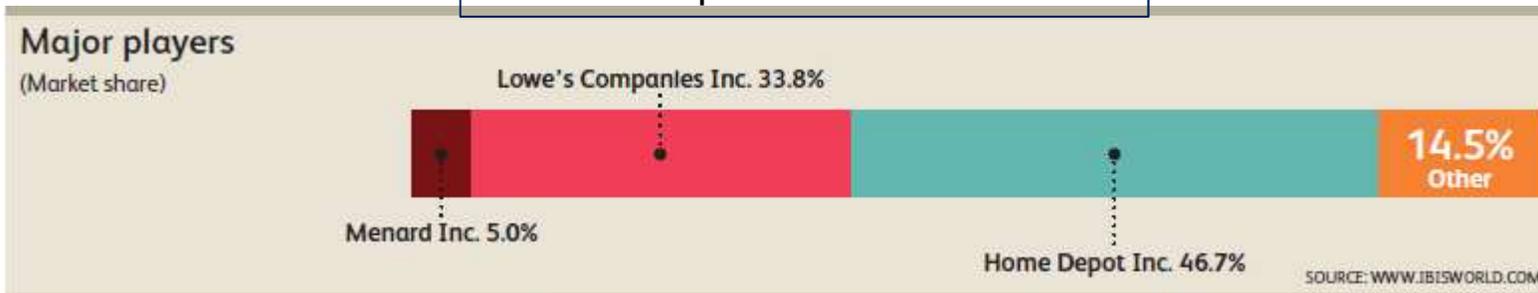


Industry Data			
	Revenue (\$m)	Industry Value Added (\$m)	Priv. spending on home improv. (\$b)
2005	148,407.4	27,067.3	209.0
2006	163,316.2	32,062.6	201.8
2007	151,726.3	30,417.9	190.0
2008	144,391.3	26,797.0	171.8
2009	135,241.0	26,775.9	166.0
2010	138,418.0	27,806.0	161.6
2011	143,186.9	28,957.5	160.5
2012	148,968.4	31,521.2	164.6
2013	155,707.2	35,489.7	163.8
2014	158,852.3	36,059.5	170.0
2015	168,534.5	37,941.8	181.9
2016	174,811.3	39,888.7	191.0
2017	181,546.9	41,515.6	200.1
2018	188,169.4	43,745.8	207.9
2019	193,868.5	44,858.1	217.4

What will impact the serviceable addressable and obtainable market?

What is the Current (and Future?) Market Share?

Home Improvement STORES



Barriers to Entry checklist	Level
Competition	Medium
Concentration	High
Life Cycle Stage	Mature
Capital Intensity	Low
Technology Change	Low
Regulation & Policy	Light
Industry Assistance	None

SOURCE: WWW.IBISWORLD.COM

What influences market share and competitive landscape?

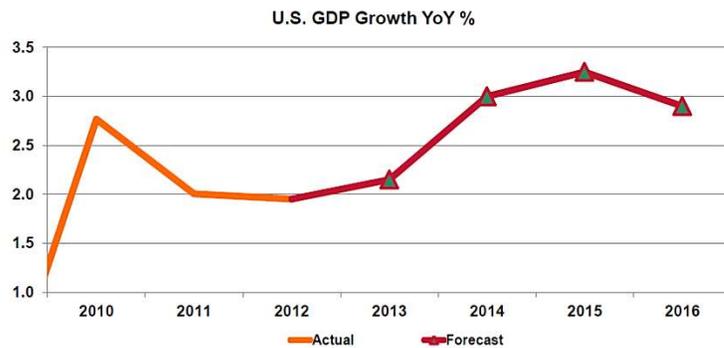




**To Develop Our Understanding of the Addressable
Market and Market Share to Build Forecasts We Need to
Look to the Factors That Drive These *Including Macro***

Macro Factors _ Aggregate Data GDP and PFRI

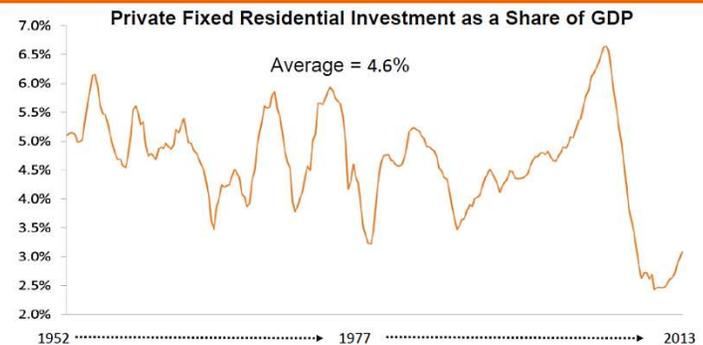
U.S. GDP Expected to Grow in the 3% Area



Source: Bureau of Economic Analysis, Federal Open Market Committee

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Planning Assumptions



GDP Growth with Modest Housing Tailwind

Source: Bureau of Economic Analysis (BEA)

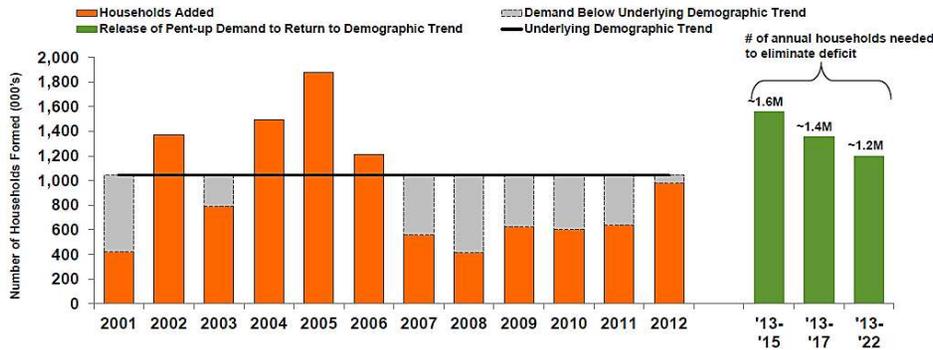
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How will GDP and PFRI changes have an impact on a forecast?

Note

- Some companies tell us what they are thinking
- The sources for US (and some other countries) are public documents
- Other sources do exist and are increasingly easily found on the internet.

New U.S. Household Formation Bodes Well for Recovery



Source: JCHS - Joint Center for Housing Studies

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Macro: New Demand and Housing Prices

- Which customers/products are impacted by new housing?
- Why do home prices and rates matter?
- How will you use these?

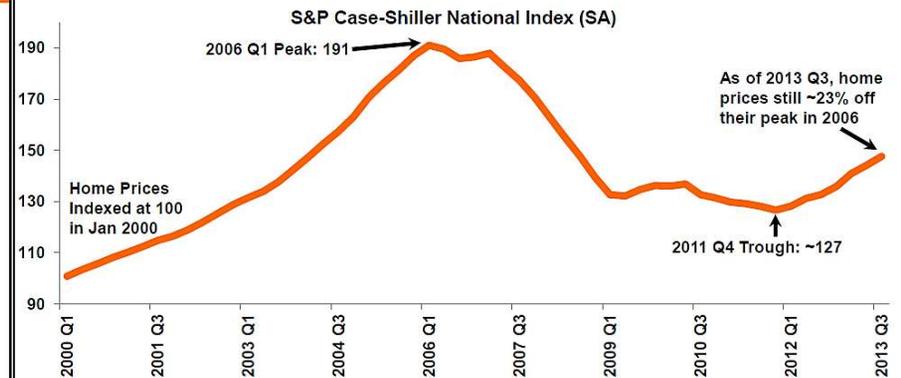
U.S. Housing Affordability Will Remain High Even if Mortgage Rates Increase



Source: NAR - National Association of Realtors

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U.S. Home Prices Still Below Their Peak



Source: S&P Case-Shiller, SA - Seasonally Adjusted

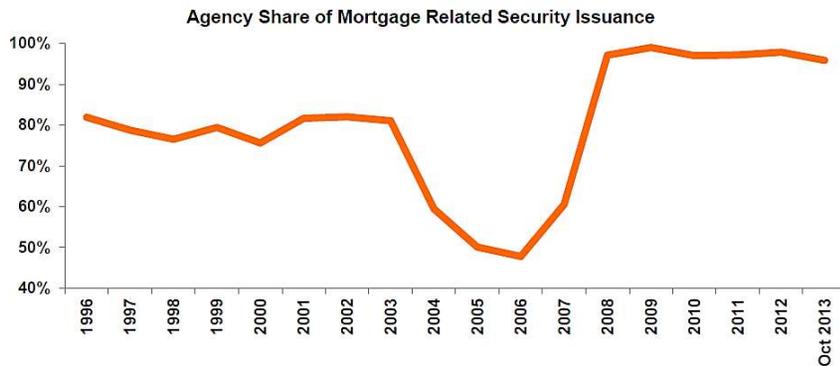
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Credit Matters Especially for Bigger Ticket Spending i.e., second order macro

Good News



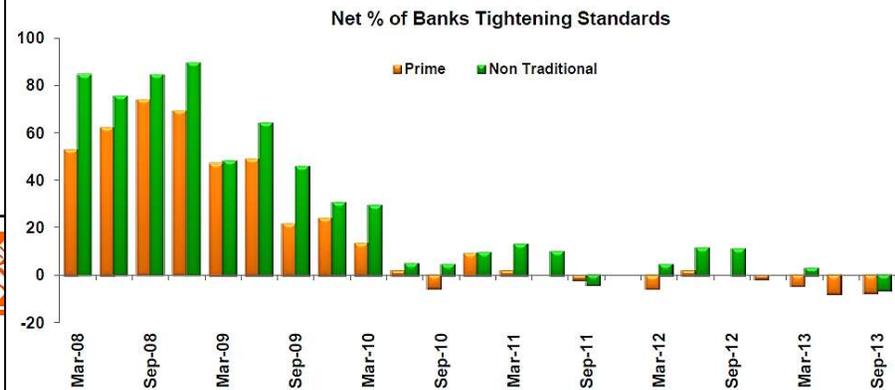
GSEs Currently Provide Almost All Liquidity in the Mortgage Market



Source: Securities Industry and Financial Markets Association (SIFMA)

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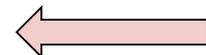
U.S. Lending Standards Still Tight



Source: Federal Reserve Board Senior Loan Officer Survey

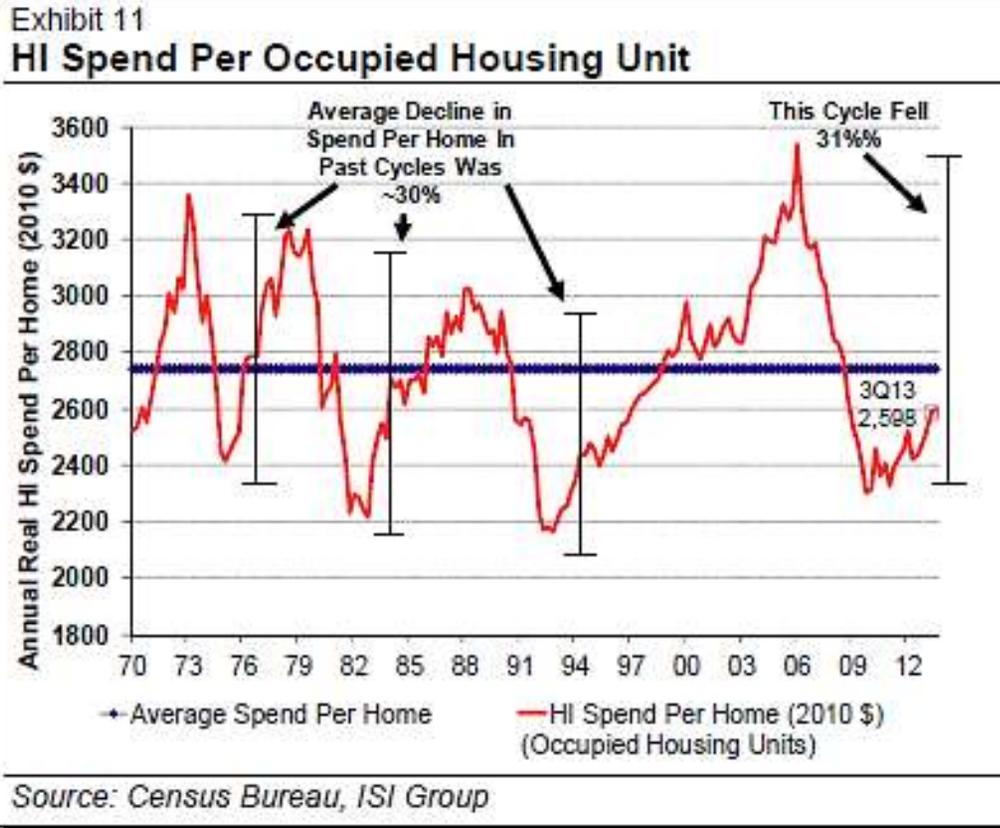
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Risk to future



Note: Will also impact the borrowing by customers more directly

Evaluating the Addressable Market: Macro Patterns of Home Improvement



From high level housing we move to Home Improvement itself.....

- How will you use this?
- Would you expect this pattern to change? Why?

Demographics Impact Consumer Expenditure

Exhibit 13: Spending Power per \$100 of Consumer Expenditures

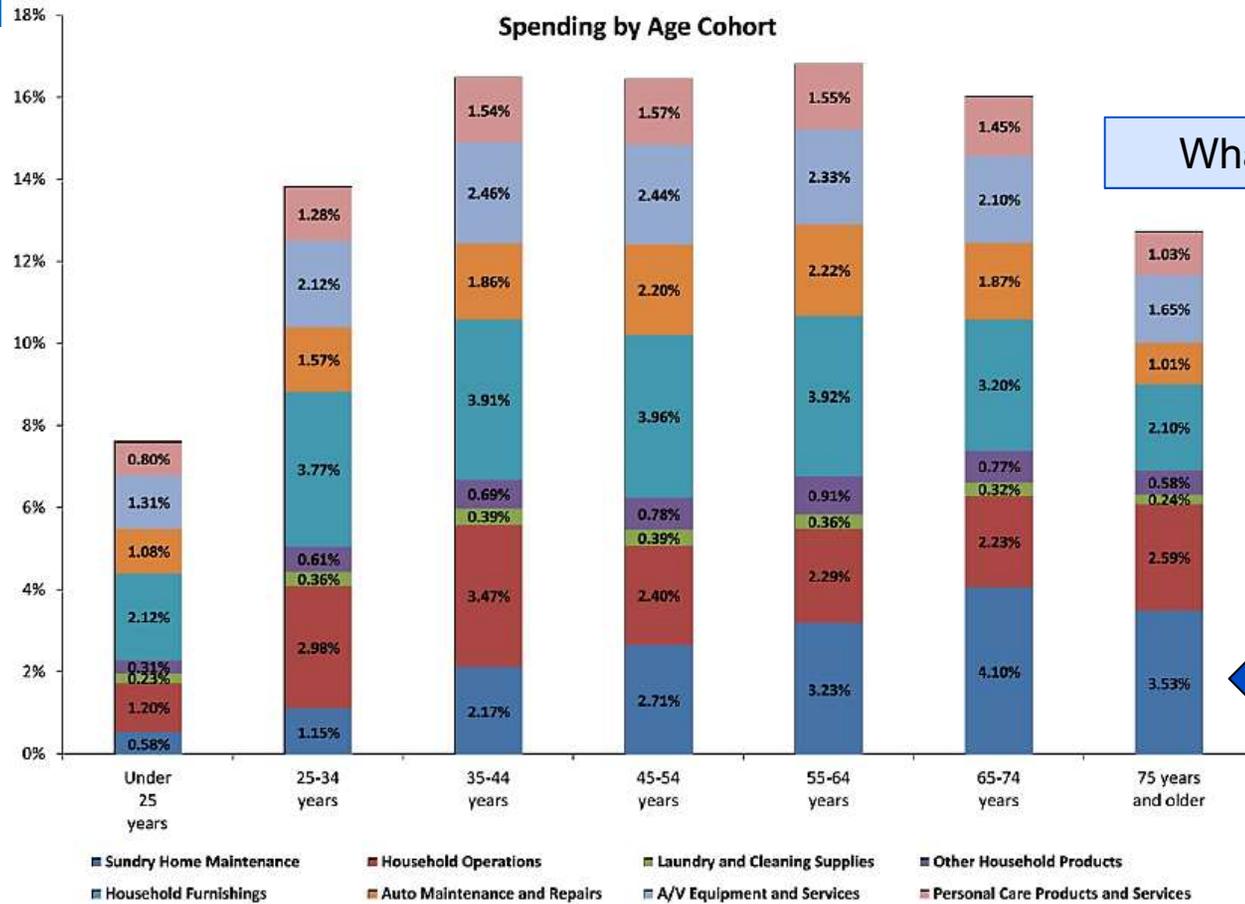
What do you expect in the future?
How does this impact Home Improvement?

35-64 Year Olds Comprise 61% of Consumer Expenditures



Exhibit 14: PCE Spending by Age Cohort

Split differs too



What do you expect in the future?



Source: Haver Analytics, Morgan Stanley Research **Simeon Gutman, Hardline/Discount Retail** | June 23, 2014

Average Annual Expenditures By Age Category for 2013

Item	Aggregate	Under 25 years	25-34 years	35-44 years	45-54 years	55-64 years	65 years and older	65-74 years	75 years and older
Number of consumer units (in thousands)	125,670	8,275	20,707	21,257	24,501	22,887	28,042	16,024	12,018
Income after taxes	56,352	26,559	53,178	69,152	68,048	63,312	41,885	48,742	32,744
Average number in consumer unit:									
People	2.5	2.0	2.8	3.4	2.7	2.1	1.8	1.9	1.6
Vehicles	1.9	1.1	1.6	2.0	2.2	2.2	1.6	1.9	1.3
Annual aggregate expenditures	\$6,420,909	3.9	15.6	19.5	23.2	19.8	18.0	11.6	6.5
Food	829,220	4.6	15.7	20.6	23.6	18.1	17.4	11.3	6.2
Food at home	499,500	4.2	15.0	20.0	23.3	19.0	18.5	11.6	7.0
<i>Food away from home</i>	<i>329,720</i>	<i>5.2</i>	<i>16.8</i>	<i>21.4</i>	<i>24.0</i>	<i>16.9</i>	<i>15.7</i>	<i>10.8</i>	<i>4.9</i>
Alcoholic beverages	55,838	5.5	18.3	17.1	24.1	18.7	16.3	11.1	5.1
Housing	2,154,893	4.0	16.5	20.4	21.6	19.0	18.5	11.6	6.9
Owned dwellings	767,621	1.1	12.3	22.1	23.5	21.7	19.3	12.7	6.6
Mortgage interest and charges	386,864	1.0	15.3	27.9	25.0	19.5	11.3	9.2	2.1
Property taxes	232,237	1.4	9.1	18.0	23.0	23.5	24.9	15.2	9.7
Maintenance, repairs, insurance, other expenses	148,521	.8	9.4	13.4	20.6	24.4	31.3	17.7	13.6
Rented dwellings	417,678	11.3	29.2	19.5	17.2	10.6	12.1	5.5	6.6
Household operations	143,783	2.5	20.2	23.8	17.4	16.5	19.6	11.0	8.7
Personal services	46,265	2.4	37.0	37.9	8.6	5.3	8.8	2.8	6.1
Other household expenses	97,517	2.5	12.3	17.2	21.6	21.7	24.7	14.8	9.9
Household furnishings and equipment	193,695	3.6	15.1	19.5	22.2	21.2	18.5	13.2	5.3
Household textiles	12,238	3.7	11.7	19.0	23.6	18.3	23.7	17.1	6.6
Furniture	48,061	4.4	18.1	19.9	20.3	22.0	15.2	10.9	4.3
Floor coverings	2,523	1.9	17.7	14.2	17.0	30.6	18.6	16.2	2.4
Major appliances	26,906	2.9	12.8	21.2	22.9	21.2	19.0	13.3	5.7
Small appliances, miscellaneous housewares	12,618	5.5	14.2	17.3	22.9	21.2	19.0	11.4	7.5
Miscellaneous household equipment	91,348	3.1	14.8	19.2	22.8	20.9	19.2	13.9	5.3

Average Annual Expenditures By Income Category for 2013

Item	Aggregate	Less than \$5,000	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$19,999	\$20,000 to \$29,999	\$30,000 to \$39,999	\$40,000 to \$49,999	\$50,000 to \$69,999	\$70,000 and more
Number of consumer units (in thousands)	125,670	5,675	5,686	8,751	8,261	14,750	13,031	11,179	17,887	40,451
Income after taxes	56,352	565	8,339	13,352	18,203	25,631	34,196	42,571	54,713	110,894
Age of reference person	50.1	46.2	47.5	54.5	56.2	53.2	50.7	48.5	48.5	48.6
Average number in consumer unit:										
People	2.5	1.7	1.7	1.7	1.8	2.2	2.3	2.5	2.7	3.0
Vehicles	1.9	.9	.8	1.0	1.1	1.4	1.6	1.9	2.1	2.6
Annual aggregate expenditures	\$6,420,909	1.9	1.7	2.9	3.4	7.6	7.5	7.3	14.1	53.7
Food	829,220	2.0	1.8	3.2	4.5	9.0	8.7	7.8	14.4	48.5
Food at home	499,500	2.2	2.1	3.6	5.4	10.2	9.3	8.3	14.3	44.6
<i>Food away from home</i>	<i>329,720</i>	<i>1.8</i>	<i>1.5</i>	<i>2.7</i>	<i>3.1</i>	<i>7.1</i>	<i>7.7</i>	<i>7.1</i>	<i>14.5</i>	<i>54.4</i>
Alcoholic beverages	55,838	1.7	1.1	2.0	3.2	7.8	7.6	7.3	13.8	55.6
Housing	2,154,893	2.5	2.1	3.5	3.9	8.1	7.9	7.7	14.1	50.2
Owned dwellings	767,621	1.6	.9	1.9	2.5	5.6	5.6	6.4	13.1	62.4
Mortgage interest and charges	386,864	1.2	.7	1.4	1.6	4.1	5.0	6.1	13.3	66.6
Property taxes	232,237	1.8	1.0	2.5	3.2	6.9	6.2	5.9	13.1	59.4
Maintenance, repairs, insurance, other exp.	148,521	2.2	1.1	2.5	3.5	7.6	6.4	8.1	12.6	56.2
Rented dwellings	417,678	5.0	4.9	7.5	6.8	13.1	12.2	10.8	15.5	24.2
Household furnishings and equipment	193,695	1.8	1.4	2.3	2.7	6.4	7.5	6.6	14.1	57.2
Household textiles	12,238	1.5	2.1	3.0	5.0	10.0	7.4	6.8	11.6	52.5
Furniture	48,061	1.9	1.3	2.3	1.8	6.2	6.6	6.3	13.0	60.6
Floor coverings	2,523	.8	.7	1.6	b/ 3.2	4.7	10.4	6.1	9.1	63.4
Major appliances	26,906	2.7	1.2	1.9	2.5	5.4	6.3	6.1	16.1	57.8
Small appliances, miscellaneous housewares	12,618	1.8	1.6	4.0	3.6	8.5	6.9	7.7	14.6	51.3
Miscellaneous household equipment	91,348	1.6	1.5	2.1	2.9	6.0	8.2	6.7	14.6	56.4

Takeaway: If you are considering the drivers of aggregate demand for products GDP is not enough, you need to consider the explicit links to your (the company's) demographics and spending patterns

Looking for more specific indicators: Aged Housing and Turnover can lead to more Home Improvement

U.S. Housing Turnover Moderating Towards the Historical Average



Source: Census Bureau, NAR

2013 INVESTOR AND ANALYST CONFERENCE

Aging Housing Stock Drives Repair and Remodeling



Percent of U.S. Housing Stock by Age, 2012



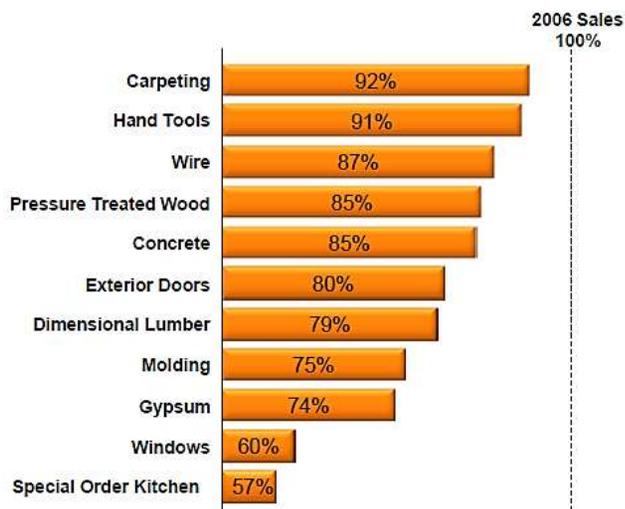
- Which customers/products are impacted by remodeled housing?
- Maintenance of all buildings is required
- How will you use these, what is biggest impact?
- What other Real Estate trends might matter?

Management are giving us some indication on the Impact of Replacement

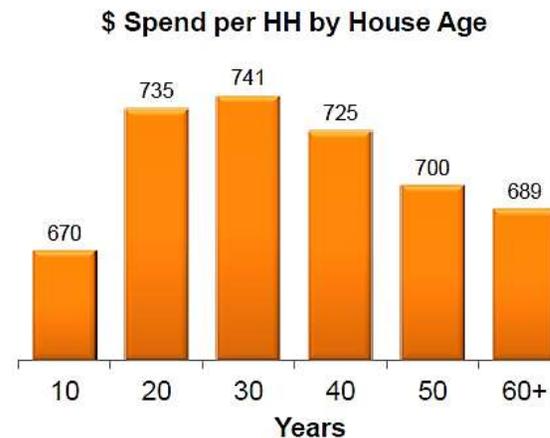
Consolidated Sales are Reaching 2006 Peak, but Opportunities are Abundant



Our U.S. Classes Haven't Fully Recovered¹⁾



Replacement Needs are Increasing



Takeaway:

Demand for Products will be impacted by where the spending occurs and when_ But still need to consider: Is there income to spend in this area?

Source: Internal company data; 1) Select classes, not intended to be a full representation

2013 INVESTOR AND ANALYST CONFERENCE

12

Company Shows How They Connect the Macro Factors

Our Framework Supports Stage 2 Housing Recovery



Company Inputs

TWO SCENARIOS

Sector	Inputs	As of June 2012 Investor Conference	Stage 1 - Workout 2012 - 2014	Stage 2 - Recovery		Stage 3 - Stability
				(Moderate) 2014 - 2015	(Sharp) 2014 - 2015	
Macro	MACRO INPUTS					
	HH Demand	<ul style="list-style-type: none"> Three years of pent-up demand 	<ul style="list-style-type: none"> Begins to absorb vacant homes at a faster rate – possibly through rentals 	<ul style="list-style-type: none"> Recovers to ~1.1 million per year 	<ul style="list-style-type: none"> Recovers to ~1.4 million per year 	<ul style="list-style-type: none"> Steady at ~1.1 million per year
	Affordability / Interest Rates	<ul style="list-style-type: none"> 40-yr high, 40-yr low 	<ul style="list-style-type: none"> Remains high / low Spurs HH demand (but activity constrained by credit) 	<ul style="list-style-type: none"> Spurs turnover as credit loosens gradually 	<ul style="list-style-type: none"> Slingshots turnover as credit loosens quickly 	<ul style="list-style-type: none"> At historical averages
	Rental Rates / Vacancies	<ul style="list-style-type: none"> Climbing / dropping fast 	<ul style="list-style-type: none"> Spurs investor demands for SF homes (for rental) Spurs HH demand (but activity constrained by credit) 	<ul style="list-style-type: none"> Steady 	<ul style="list-style-type: none"> Steady 	<ul style="list-style-type: none"> Steady
	Financing / Credit	<ul style="list-style-type: none"> Very tight 	<ul style="list-style-type: none"> Stays tight 	<ul style="list-style-type: none"> Loosens gradually 	<ul style="list-style-type: none"> Loosens quickly 	<ul style="list-style-type: none"> Steady; home equity withdrawals return
Housing	HOUSING OUTPUTS					
	Inventory	<ul style="list-style-type: none"> Improving, but still 2-4 years of shadow inventory 	<ul style="list-style-type: none"> Absorbed in 2 – 4 years to normal levels 	<ul style="list-style-type: none"> Back to normal levels (no excess) 	<ul style="list-style-type: none"> Shortage Spurs starts 	<ul style="list-style-type: none"> At historical average of ~6.0 months of supply
	Turnover	<ul style="list-style-type: none"> Bottomed; sign of recovery 	<ul style="list-style-type: none"> Moderating towards ~4 - 5% of units 	<ul style="list-style-type: none"> Achieves ~4 - 5% of units 	<ul style="list-style-type: none"> Surpasses 5% on way to 6% 	<ul style="list-style-type: none"> 4 - 5% of stock per year
	Prices	<ul style="list-style-type: none"> Flat to small decreases nationally Varies locally 	<ul style="list-style-type: none"> Pressured as excess worked through; possibly flat to slight positive 	<ul style="list-style-type: none"> Rise at long-term average growth levels (3%) or slightly better as affordability heads to equilibrium 	<ul style="list-style-type: none"> Rise at significantly greater than LT average for a short while as affordability heads to equilibrium 	<ul style="list-style-type: none"> 3% growth per year
	Starts	<ul style="list-style-type: none"> Bottomed; sign of recovery 	<ul style="list-style-type: none"> Grows moderately because all excess homes are “not in the right place” 	<ul style="list-style-type: none"> Rises to historical average of 1.5 million per year 	<ul style="list-style-type: none"> Spikes above 1.5 million per year as prices rise and builders drawn to market 	<ul style="list-style-type: none"> 1.5 million per year
	Remodeling / Repair	<ul style="list-style-type: none"> Recovering 	<ul style="list-style-type: none"> GDP-driven Pent-up demand driven “Locked-in” owners may begin more remodel / improvement as they accept their equity position 	<ul style="list-style-type: none"> Home price / turnover-driven Pent-up demand driven 	<ul style="list-style-type: none"> Home price / turnover-driven 	<ul style="list-style-type: none"> GDP-driven, supported by aging housing stock
			<ul style="list-style-type: none"> GDP +0 to 1% 	<ul style="list-style-type: none"> GDP +1 to 2% 	<ul style="list-style-type: none"> GDP +2 to 4% 	<ul style="list-style-type: none"> GDP +0 to 1%

Source: BEA, NAR, U.S. Census Bureau, S&P Case-Shiller, Moody's Analytics, NAHB, Freddie Mac, Federal Reserve, CoreLogic, JCHS

Connecting sales growth to drivers and Macro Factors

	1981 - 2006	2007 - 2009	2010 - 2013	2014 +
Sales Growth	Driven by new square footage growth	Slowed / stopped square footage growth and realized \$13 billion sales loss due to recession	Driven by housing recovery and market share gains.	Driven by continued housing recovery and interconnected retail strategic framework

Our Sales Growth Model is Imperfect but Directionally Correct



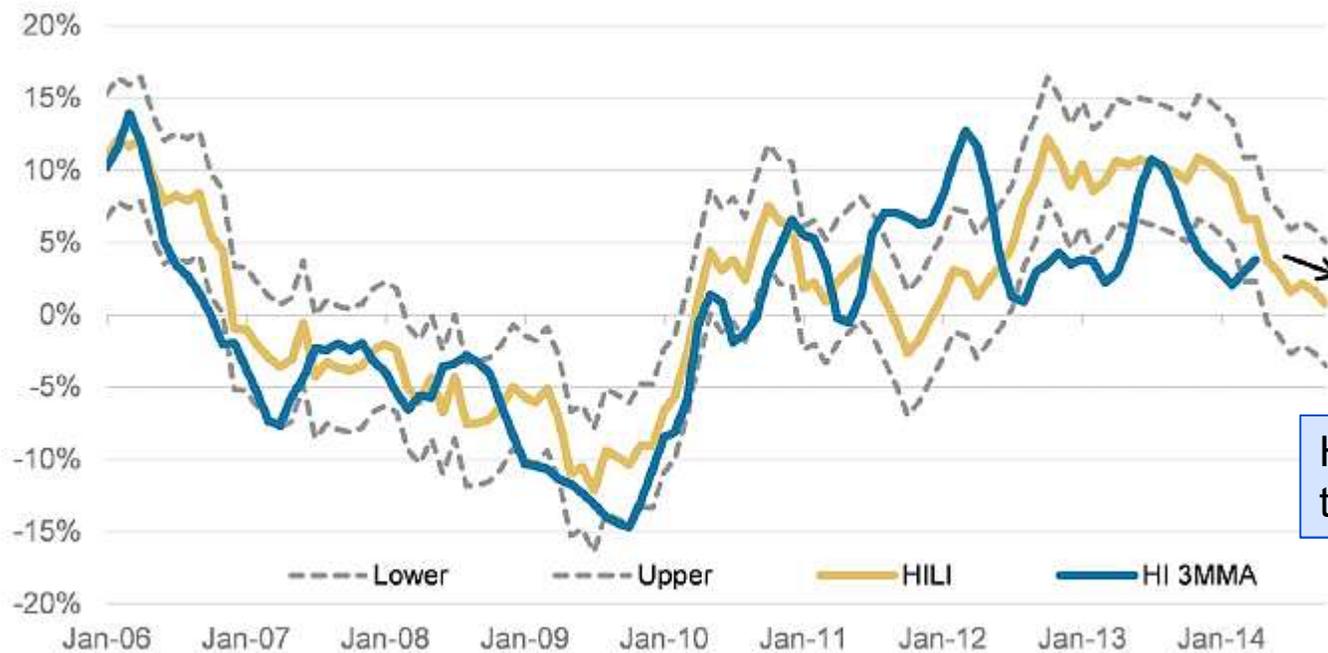
Comp Estimation	2011	2012	2013F
U.S. Real GDP Estimate	1.8%	2.8%	2.2%
+ Home Price's Impact to Comp	0.0%	1.0%	1.5%
+ Turnover Impact to Comp	0.1%	0.5%	0.7%
+ Contribution from New Household Formation	0.6%	0.3%	0.3%
+ Other	NA	NA	2.3% ¹⁾
Predicted U.S. Store Comp	~2.5%	~4.6%	~7.0%
U.S. Actual / Forecasted Comp	3.1%	4.9%	~7.0%

- Provides some variables to consider and monitor
- Gives you some indication on management's understanding of their own business.

1) Other includes contribution from appliances and commodity prices

Home Improvement Leading Indicator (HILI) from One Analyst 6-14

Exhibit 5: HILI Points to a Deceleration in HI Retail Sales, though Still Positive



- Based on Change in:
- Home Prices
 - Existing Home Sales
 - ISM Survey
 - 30-yr mortgage rate
 - HI Retail Sales

How would you use this type of indicator?

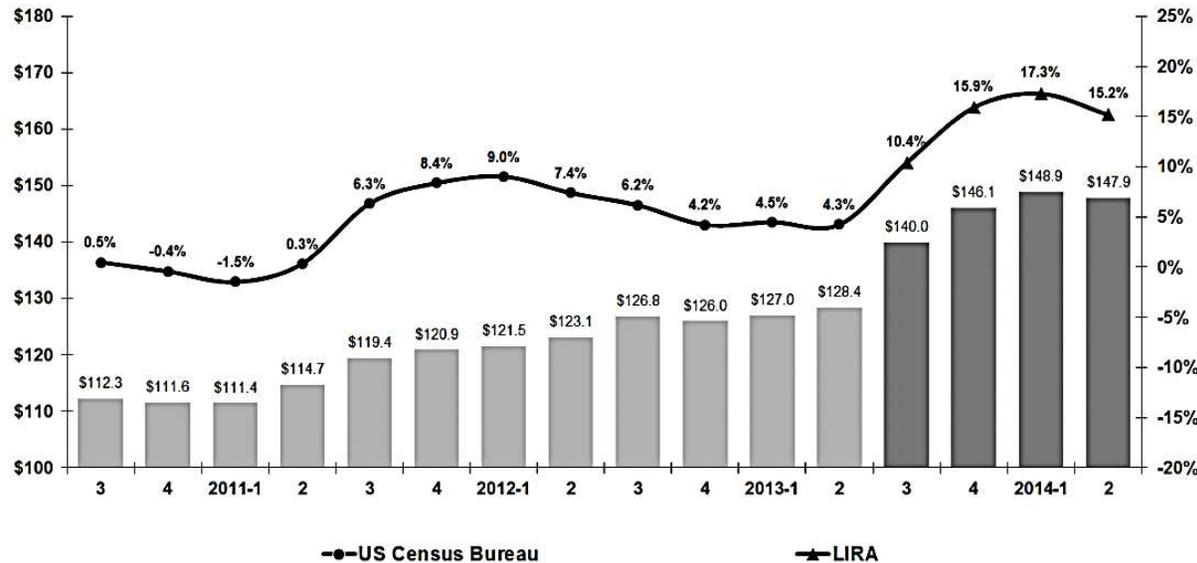
Source: US Census Bureau, National Association of Realtors, Institute of Supply Management, Federal Reserve Board, Morgan Stanley Research
Simeon Gutman, Home Depot Inc | June 23, 2014

Public Sources are Available to Assess Future Macro.....

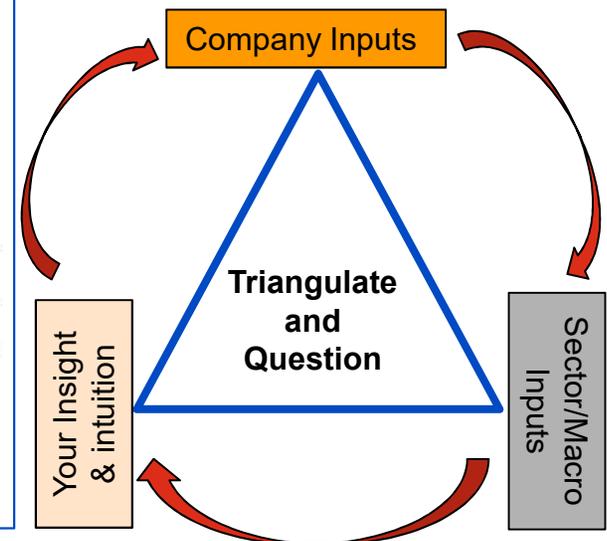
Leading Indicator of Remodeling Activity – Third Quarter 2013

Homeowner Improvements
Four-Quarter Moving Totals
Billions of \$

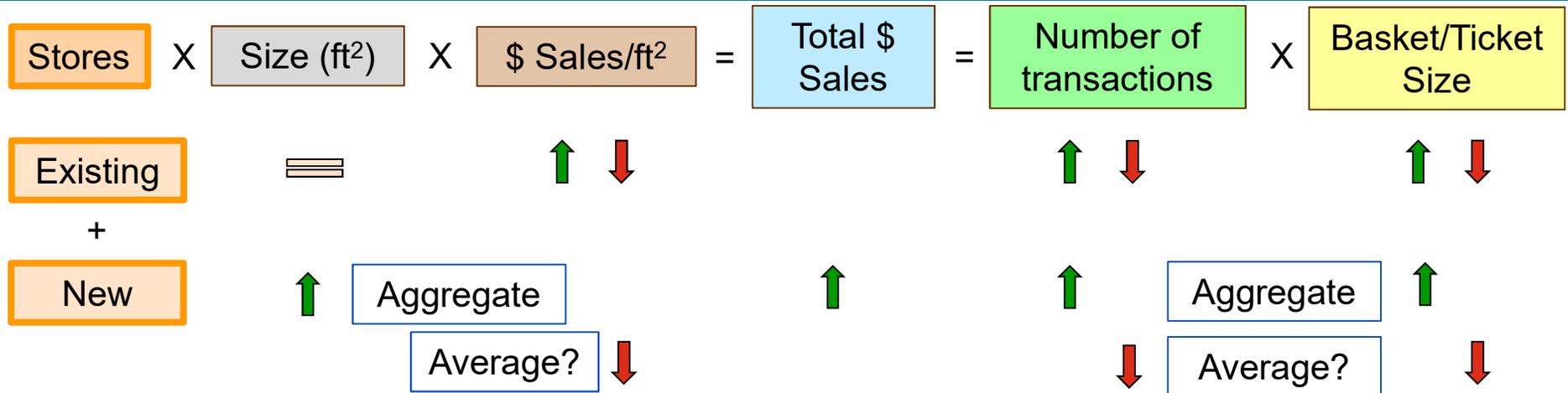
Four-Quarter Moving
Rate of Change



Note: The third quarter 2013 estimate is calculated using preliminary Census Bureau data and LIRA projections.
Source: Joint Center for Housing Studies of Harvard University.



How Would you Use the Macro and Addressable Market in the Model?



Some Key Takeaways

- As any business decision requires us to make some forecast (even if it is: can the current earned income be sustained?) we need to understand the business at a sufficient level to be able to bound some future outcomes or accept that we are just playing games.
- To do this the best starting point is to understand the operating cycle and then identify the key drivers of revenue (and costs).....using and triangulating among company (internal or external) information, sector/macro data and your own analysis/intuition.
- Always consider how and why volume, price and potentially exchange rates are changing....there is always some unit(s) that can be identified for you to work with.
- Designing the model should allow you to link to other key elements.
- *Deciding what level of data or breakdown to work with is an issue and **you should be guided by what data is available**, how easily you can integrate it into the analysis and most critically if it will inform you about, meaningful shifts or changes in the revenue (or costs) driving margins, operating asset efficiency etc. [This lets you get a level of comfort with the uncertainty]*

Detailed Data Available from BI – Broader Macro Data

Search BI | 91) Actions | Industry Director | Bloomberg Industries | North America

Home Improvement Stores Dashboard (BI HOMCN)

Data Library | 51) Macro | 52) Age of U.S. Housing Stock

View | 12 | Ann | Growth | None | Curr | USD | Zoom | 100%

	2014	2013	2012	2011	2010
U.S. Housing Market Indicators:					
PRFI % of GDP		3.2	2.6	2.3	2.3 2.5
Private Residential Fixed Investment			433.7	384.3	382.4 39
GDP			15,470.7	15,052.4	14,779.4 14,
Housing Turnover (%)					
Home Sales		5,364	5,296	4,711	4,596 4,7
Housing Units		132,845	132,573	132,223	131,892 13
Home Prices & Affordability					
CoreLogic HPI					
1 Month		0.2	0.2	-0.9	-1.0 -0.
3 Month		1.0	0.0	-3.0	-2.9 -1.
6 Month		6.6	1.6	-3.0	-4.8 0.6
12 Month		12.5	8.8	-2.9	-3.8 -3.
CoreLogic HPI (YoY)					
by Region / State / City					
Case-Shiller 20 City Composite					
Atlanta, GA		113.7	96.0	87.3	100.1 10
Boston, MA		168.4	153.8	148.5	152.5 15
Charlotte, NC		125.5	115.1	109.1	112.4 11
Chicago, IL		122.8	112.0	110.2	117.8 12

Detailed Data Available from BI – Industry Macro Data

Search BI | 91 Actions | 2 Industry Director | Bloomberg Industries

Home Improvement Stores Dashboard (BI HOMCN) | North America

Data Library | 51 Industry

View | 12 Ann | Growth | None | Curr | USD | Zoom | 100%

	2013	2012	2011	2010	2009
Home Improvement Expenditures	274,409	261,538	247,845	236,769	224,100
Household Maintenance	64,811	64,633	62,224	59,126	58,749
Lighting/Clocks	51,545	45,000	40,233	36,353	31,885
Appliances	49,684	45,106	45,809	44,393	41,976
Flowers/Potted Plants	26,386	28,587	26,041	26,857	25,566
Floor Coverings	25,831	23,978	21,014	19,108	18,760
House Tools	20,237	19,753	19,205	18,754	17,565
Hardware	16,288	15,958	15,556	15,307	14,378
Window Coverings	15,672	14,725	14,112	13,424	12,034
Outdoor Equipment	3,955	3,798	3,651	3,447	3,187
Source: Bureau of Economic Analysis					
Residential Construction Spending	345,528	298,167	248,601	229,258	245,465
Single Family	174,757	149,400	113,141	106,962	112,847
Improvements	135,534	120,795	118,476	108,618	114,002
Multi Family	35,237	27,972	16,984	13,678	18,616
Source: Census Bureau					
Retail Store PPI's					
Housing CPI					
Discover US Spending Monitor					



Detailed Data Available from BI – Industry Measures

Search BI | 9) Actions | 2) Industry Director | Bloomberg Industries | Home Improvement Stores Dashboard (BI HDMCN) | North America

Data Library | 5) Operating | 5) Company Specific | 5) Profitability | 5) Balance Sheet | 5) Categories

View | 12 Ann | Growth None | Select Companies | Curr USD | Zoom 100

5) Peer Group | BI North American Home Improvement Stores Val...

	2012	2011	2010	2009	2008
Employees	500,000.0	492,000.0	482,000.0	483,000.0	486,000.0
Unit Analysis (Qtr & Annual)					
Number of Locations (units)	5,474.0	5,345.0	5,221.0	5,070.0	4,928.0
Sales per Store (\$ mn)	24.3	16.7	16.3	16.1	17.3
Inventory per Store (\$ mn)	6.0	2.7	4.6	2.7	2.7
Transactions per Store (000's)	532.4	524.6	518.0	510.0	514.7
Square Footage (000's)	432,000.0	432,000.0	197,235.0	193,235.0	187,238.0
Avg Square Foot per Location	108,500.0	108,500.0	109,000.0	109,000.0	109,000.0
Inventory					
Inventory Growth	9.6	1.8	10.3	10.7	1.2
Inventory Turnover	3.7	3.7	3.4	3.6	3.9
Inventory to Assets	39.8	37.7	37.3	36.7	39.2
Inventory to Sales Spread	2.0	-4.7	4.7	9.5	-3.7
Inventory Days	102.4	103.0	111.3	101.9	94.5
Inventory per Sq Ft	44.6	43.2	22,627.5	21,698.0	22,444.2
Inventory per Store (\$ mn)	6.0	2.7	4.6	2.7	2.7
Total Inventories (\$ mn)	21,491.2	20,500.1	20,909.9	20,099.8	20,198.6

Detailed Data Available from BI – Company Measures: Stores

Search BI | 9) Actions | 2) Industry Director | Bloomberg Industries

Home Improvement Stores Dashboard (BI HOMCN) | North America

Data Library | 5) Operating | 52) Company Specific | 53) Profitability | 54) Balance Sheet | 55) Categories

View 12 Ann Growth None Select Companies Curr USD Zoom 100

5) Peer Group BI North American Home Improvement Stores Val...

	2012	2011	2010	2009	2008
Employees	500,000.0	492,000.0	482,000.0	483,000.0	486,000.0
Home Depot Inc/The	340,000.0	331,000.0	321,000.0	317,000.0	322,000.0
Lowe's Cos Inc	160,000.0	161,000.0	161,000.0	166,000.0	164,000.0
Unit Analysis (Qtr & Annual)					
Number of Locations (units)	5,474.0	5,345.0	5,221.0	5,070.0	4,928.0
Home Depot Inc	2,256.0	2,252.0	2,248.0	2,244.0	2,274.0
Lowe's Cos Inc	1,754.0	1,745.0	1,749.0	1,710.0	1,649.0
Tractor Supply	1,176.0	1,085.0	1,001.0	930.0	855.0
Lumber Liquidators	288.0	263.0	223.0	186.0	150.0
Sales per Store (\$ mn)	24.3	16.7	16.3	16.1	17.3
Home Depot Inc	33.2	31.3	30.3	29.3	31.6
Lowe's Cos Inc	28.9	28.7	28.2	28.1	30.3
Tractor Supply	4.1	4.1	3.8	3.6	3.7
Lumber Liquidators	3.0	2.8	3.0	3.2	3.6
Orchard Supply Hardware Stores	52.6				
Inventory per Store (\$ mn)	6.0	2.7	4.6	2.7	2.7
Home Depot Inc	4.7	4.6	4.7	4.5	4.7
Lowe's Cos Inc	4.9	4.8	4.8	4.8	5.0
Tractor Supply	0.8	0.8	0.7	0.7	0.7
Lumber Liquidators	0.7	0.6	0.7	0.7	0.6

Detailed Data Available from BI – Company Measures: More details

Search BI 91) Actions 2) Industry Director Bloomberg Industries

Home Improvement Stores Dashboard (BI HOMCN) North America

Data Library

- Industry Home
- Featured Data
- Market Share
- Macro
- Industry
- Company
- Monitor
- News/Research
- Events
- Comp Sheets
- Markets
- Ownership
- Coverage

51) Operating 52) Company Specific 53) Profitability 54) Balance Sheet 55) Categories

View 12 Ann Growth None Select Companies Curr USD Zoom 100%

5) Peer Group BI North American Home Improvement Stores Val...

	2012	2011	2010	2009	2008
▣ Transactions per Store (000's)					
Home Depot Inc	532.4	524.6	518.0	510.0	514.7
Lowe's Cos Inc	605.1	585.6	581.5	564.0	564.3
▣ Square Footage (000's)					
Home Depot Inc	459.6	463.7	454.5	456.1	465.0
Home Depot Inc	432,000.0	432,000.0	197,235.0	193,235.0	187,238.0
Lowe's Cos Inc	235,000.0	235,000.0	235.0	235.0	238.0
Lowe's Cos Inc	197,000.0	197,000.0	197,000.0	193,000.0	187,000.0
▣ Avg Square Foot per Location					
Home Depot Inc	108,500.0	108,500.0	109,000.0	109,000.0	109,000.0
Home Depot Inc	104,000.0	104,000.0	105,000.0	105,000.0	105,000.0
Lowe's Cos Inc	113,000.0	113,000.0	113,000.0	113,000.0	113,000.0
▣ Inventory					
▣ Inventory Growth					
Home Depot Inc	9.6	1.8	10.3	10.7	1.2
Lowe's Cos Inc	3.7	-2.8	4.3	-4.5	-9.0
RONA Inc	2.9	0.4	0.9	0.5	7.9
Tractor Supply	6.0	-7.2	24.7	-4.8	-10.9
Lumber Liquidators	9.3	12.8	8.9	12.1	-5.1
Orchard Supply Hardware Stores	25.9	5.8	16.3	50.3	23.2
▣ Inventory Turnover					
Home Depot Inc	3.7	3.7	3.4	3.6	3.9
Home Depot Inc	4.7	4.4	4.3	4.2	4.2
Lowe's Cos Inc	3.0	3.0	3.8	3.7	4.0



Nate Silver's Perspective one more time

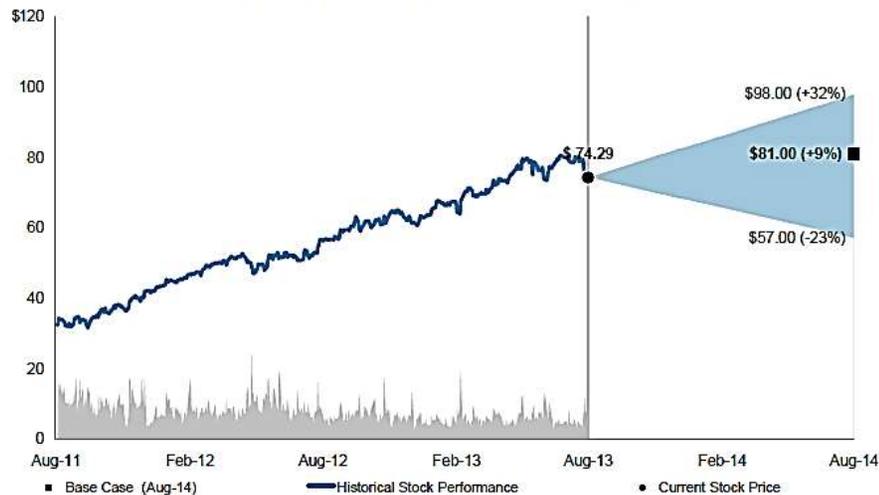
- The goal of any predictive model is to capture as much signal as possible and as little noise as possible. **Striking the right balance is not always so easy, and our ability to do so will be dictated by the strength of the theory and the quality and quantity of the data.**
- In economic forecasting, the data is very poor and the theory is weak, hence Armstrong's argument that "the more complex you make the model the worse the forecast gets."..... **I would urge caution against reducing the forecasting process to a series of bumper-sticker slogans. Heuristics like Occam's razor ("other things being equal, a simpler explanation is better than a more complex one") sound sexy, but they are hard to apply. We have seen cases, as in the SIR models used to forecast disease outbreaks, where the assumptions of a model are simple and elegant— but where they are much too naïve to provide for very skillful forecasts.....**
- An admonition like "The more complex you make the model the worse the forecast gets" is equivalent to saying "Never add too much salt to the recipe." How much complexity— how much salt— did you begin with? ***If you want to get good at forecasting, you'll need to immerse yourself in the craft and trust your own taste buds.*** (p. 388-9)
- Silver, Nate (2012-09-27). "The Signal and the Noise: Why So Many Predictions Fail-but Some Don't". Kindle Edition.

TAKEAWAY: Knowing how much is enough detail depends on the business and your experience/understanding...by using the "Model" of the profitability tree you can work back to more detail asking how likely it is to make a difference.

Reward Snapshot: Home Depot (HD.N, \$74.29, EW)

Risk Reward Chart for HD

Balanced risk-reward despite industry tailwinds



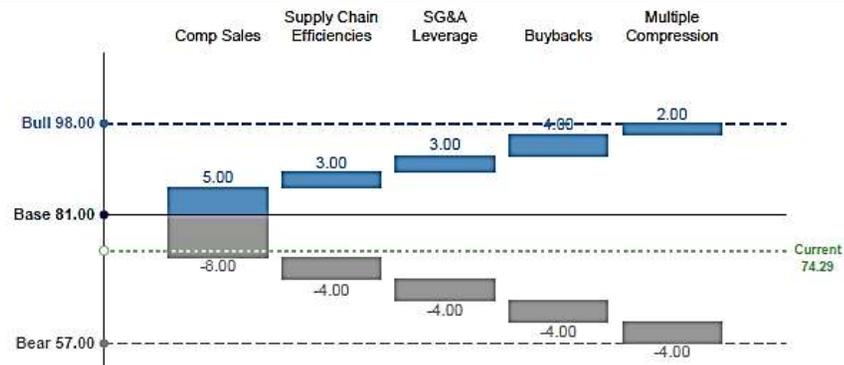
Key Risks

- Recent housing macro improvements were temporary and weather driven, and housing prices and turnover begin to slow again.
- Supply chain efficiencies become more muted.

Potential Catalysts

- While HD already maintains a small exposure to Canada, Mexico, and China—further expansion in international territories could provide a source of stronger than expected growth.

Bear to Bull: Execution on cost/efficiency initiatives is key



The Home Depot, Inc.

Despite Stellar Comps, No Partying Like its 1999

MORGAN STANLEY RESEARCH

August 21, 2013 D. Gober and team

A More Recent view From ISI

G. Melich 12-11-13

Home Depot: Strong Buy, Base \$90

'06-09 Pain Brings Long-Term Gain: EBIT Potential 13%+

ISI

INTERNATIONAL STRATEGY & INVESTMENT

Scenario Analysis: Margin Recovery on Ticket / Traffic Is The Key to Breakout



Bull Case - \$115	Base Case - \$90	Bear Case - \$70
20x Bull Case 2015e EPS of \$5.75	17x Base Case 2015e EPS of \$5.25	15x Bear Case 2015e EPS of \$4.65
Home Mindset Goes From Expense to Investment. GDP hits 4% and HI demand surges in '14-15. HD sales/ft pushes close to \$400/ft and the high velocity store based pushes margins to 14%. FCF surges north of \$10B in '15 as the multiple reflects the stability of operations and highly cash generative nature of the business.	Building It Back, One Brick At A Time. HD comps 5% in '14-15 and productivity hits \$365/ft. Consumers spend on maintenance, but ticket increasingly drives the comp. Ticket drives SG&A leverage, pushing EBIT margins past 13.0% in '15. The multiple runs at 17x as \$5.25 of 2015 EPS is realistic and FCF is greater than EPS.	Lack of Credit Keeps Ticket From Breakout Recovery. Without credit to fund remodel spend, ticket fails to fully inflect. Comps stabilize at 2%. EBIT steadies at 12.2%. The P/E multiple drops to 15x as EPS growth slows. Strong FCF yield of 7.5% and dividend of 2.5% provide support at in the low \$70s.

Data Sources to Consider

- Capital IQ from Standard and Poors (you have an account or can get one)
- Bloomberg especially BI (Bloomberg Industries) research
- Ibisworld.com in Library System
- Thomson One in Library system (includes analysts' reports) also Factset
- Company websites
- Industry specific sources that can often be found in references on analyst reports or via normal web search
- Industry Studies Abound