

Dupont Analysis

Adapted by P. V. Viswanath (with permission)

from <http://marriottschool.net/teacher/swinyard/Retailing/>

The Du Pont Identity

- $ROA = NI / TA$
 - $ROA = (NI / Sales) * (Sales / TA)$
 - $ROA = (\text{Net Profit Margin}) * (\text{Asset Turnover})$
- $ROE = NI / TE$
 - $ROE = (NI / Sales) * (Sales / TA) * (TA / TE)$
 - $= \text{Net Profit Margin} * \text{Asset Turnover} * \text{Equity Multiplier}$
- Net Profit margin is a measure of the firm's operating efficiency – how well it controls costs
- Total asset turnover is a measure of the firm's asset use efficiency – how well it manages its assets
- Equity multiplier is a measure of the firm's financial leverage.
- A firm could have a high volume/low margin strategy, which would be reflected in high asset turnover but low profit margins or the reverse.
- The firm's marketing (e.g. branding) and other strategies have to be commensurate.

Illustrations of the Dupont Identity

- The Dupont identity is fairly well known as an accounting identity.
- However, it can also be the basis for alternative marketing strategies.
- Let us see how this works, as reflected in the practices of some US corporations.
- We start out looking at Tiffany, a jewelry retail firm and compare them with Walmart, which is another jewelry retail firm – and, according to its website, the world’s largest – but quite different.

(<http://walmartstores.com/sustainability/9137.aspx>)

Income Statements: Wal-Mart vs Tiffany

(2000, in millions)

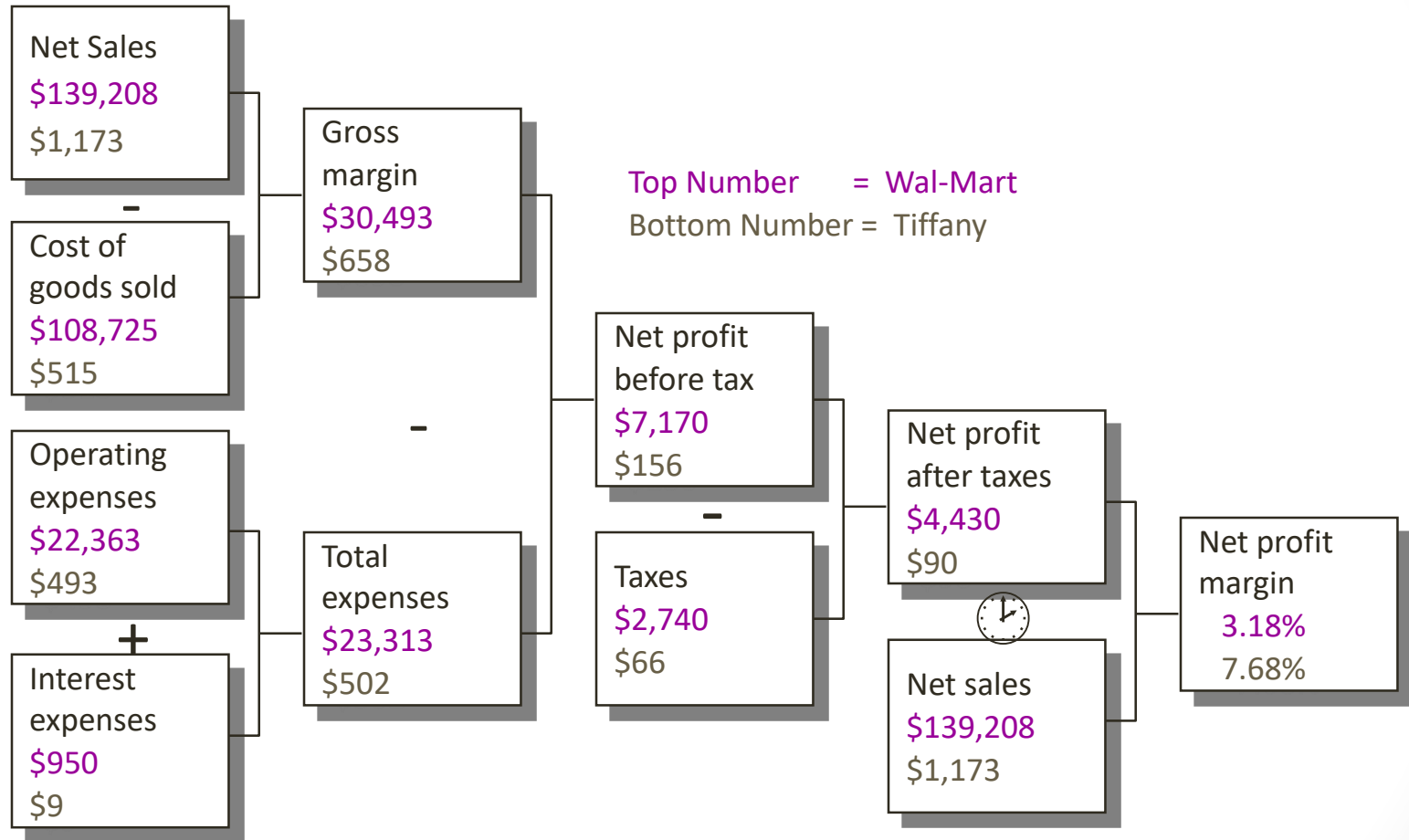
	Wal-Mart	Tiffany
Net sales	\$ 139,208	\$ 1,173
Less: Cost of goods sold	\$ 108,725	\$ 515
Gross margin	\$ 30,483	\$ 658
Less: Operating expense	\$ 22,363	\$ 493
Less: Interest expense	\$ 950	\$ 9
Total expense	\$ 23,313	\$ 502
Net profit, pretax	\$ 7,170	\$ 156
Less: Taxes*	\$ 2,740	\$ 66
Tax rate	38.21%	42.31%
Net profit after tax	\$ 4,430	\$ 90

* Effective tax rates often differ among corporations due to different tax breaks and advantages.

Which has the higher net margin?

Profit Margin Model: Wal-Mart vs Tiffany

(2000, in millions)



Profit Margins

- Clearly, Tiffany has the larger profit margin.
- The model in the previous slide also shows exactly where the profit margin comes from.
- The focus in this approach is on the numerator of the profit margin ratio, viz. on Net Profit After Taxes.
- It behooves the savvy manager to look at the components of NPAT as a fraction of sales.
- Is it possible to improve cost of goods sold and operating expenses as a fraction of sales – but without affecting sales?
- How are these being used to improve sales?

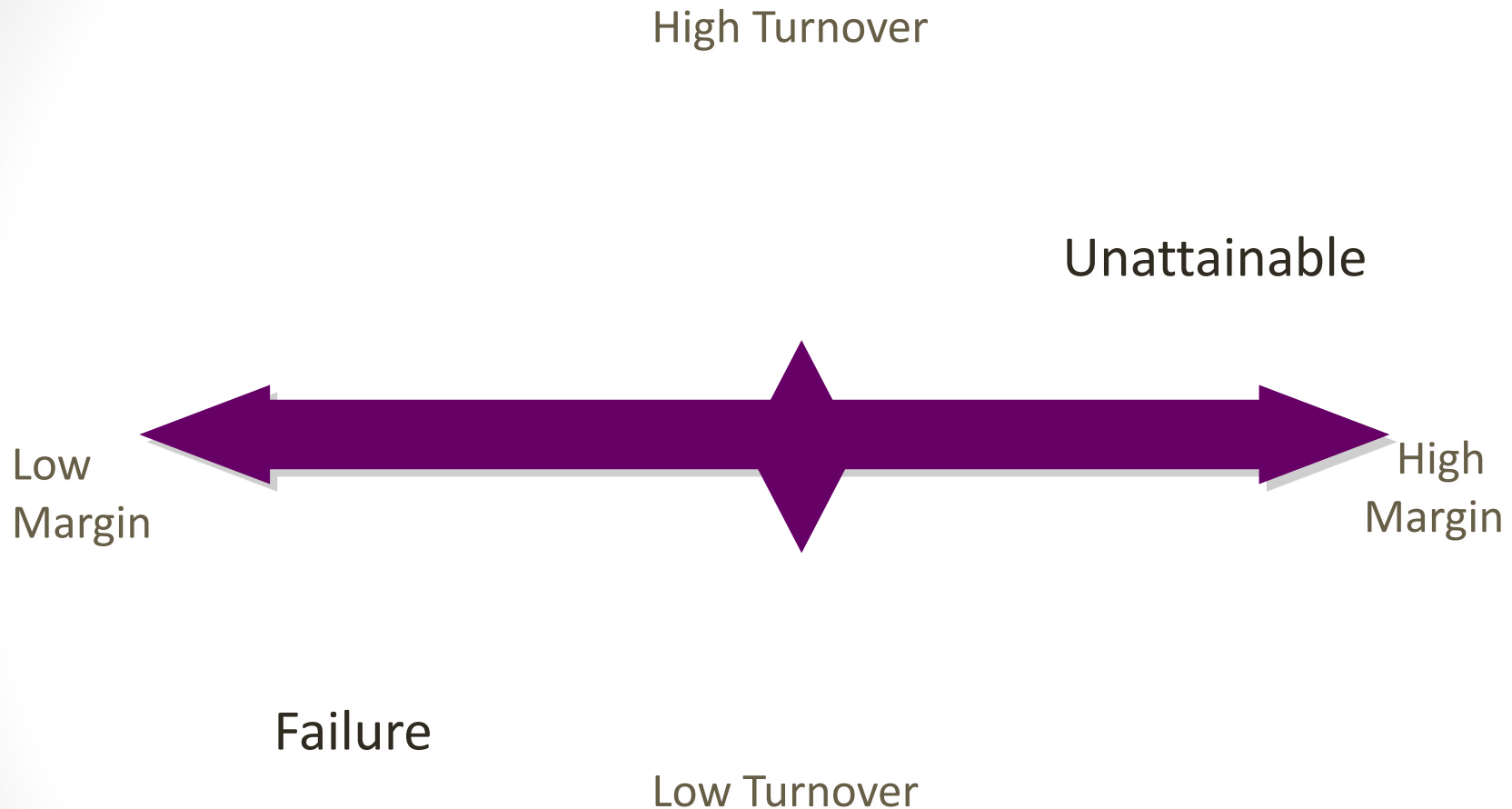
Return on Assets

- The next part of the Dupont model is Return on Assets. Before we go back to the Tiffany/ Walmart contrast, let's see another example, though this time in two different industries.

	Net Profit Margin	X	Asset Turnover	=	Return on Assets
Provo Bakery	10%	X	9 times	=	90%
Zales Jewelry	90%	X	1 time	=	90%

- Both firms have the same ROA, but different combinations of profit margin and asset turnover. Is there something about the industries that these firms are in that drives these different approaches?

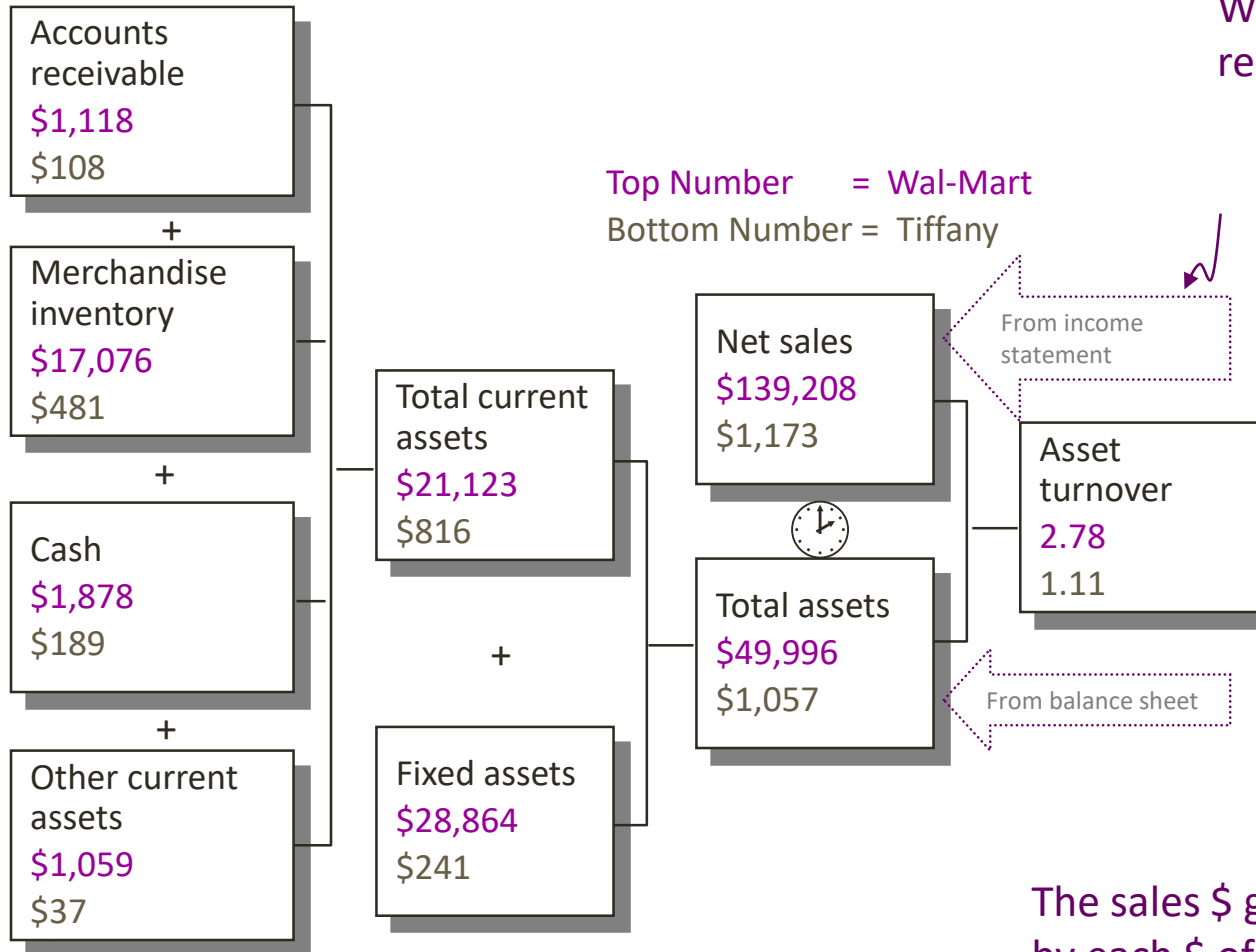
ROA: Turnover vs Margin



Two of the four segments might be unattainable or undesirable. But how should a manager improve the firm's positioning in the other two segments?

Asset Turnover Model: Wal-Mart vs Tiffany

(2000, in millions)



Top Number = Wal-Mart
Bottom Number = Tiffany

What does this represent?

The sales \$ generated by each \$ of assets

Asset Turnover

- Clearly, Walmart has the larger asset turnover.
- The model in the previous slide also shows exactly what is the source of the higher asset turnover.
- The focus in this approach is on the denominator of the asset turnover ratio, viz. on Total Assets.
- It behooves the savvy manager to look at the components of total assets in terms of how they contribute to sales.
- Is it possible to reduce accounts receivable and merchandise turnover and other assets – but without affecting sales?
- How are these assets being used to improve sales?

Dupont Analysis: Wal-Mart vs Tiffany

(2000, in millions)

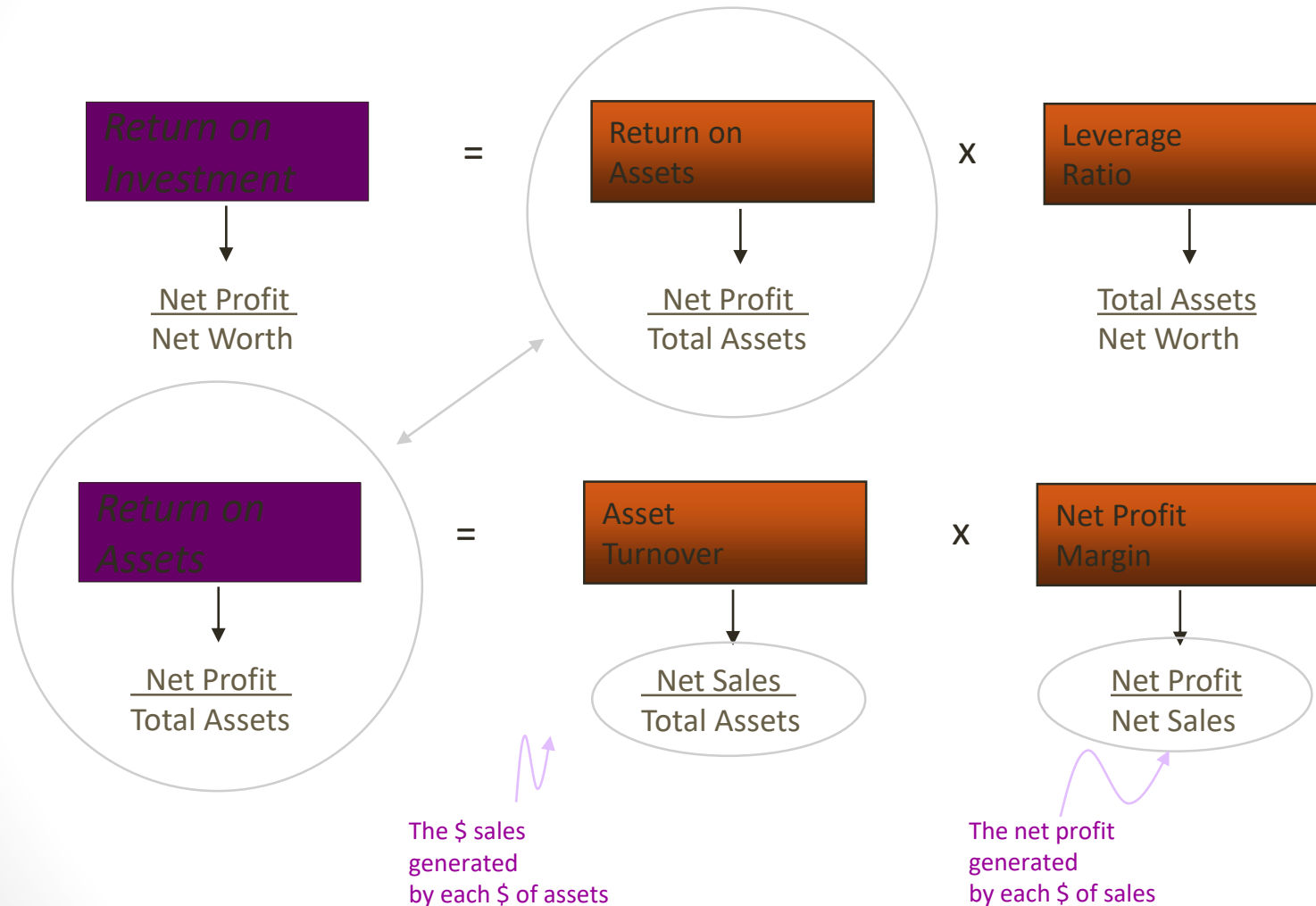
2000 data	Net Profit Margin Net Income/Net Sales	Asset Turnover Net Sales/TA	ROA
Walmart	3.18	2.78	8.84
Tiffany's	7.68	1.11	8.525

Although Walmart and Tiffany clearly have different marketing/merchandising strategies, they end up with approximately the same ROA!

In principle, this approach could be extended to look at ROE and include leverage choices as part of the mix. The next slide shows how different firms have made different choices in terms of net profit margin, asset turnover **and** leverage.

Financial Objectives:

The Strategic Profit Model



and so ...

SPM Examples

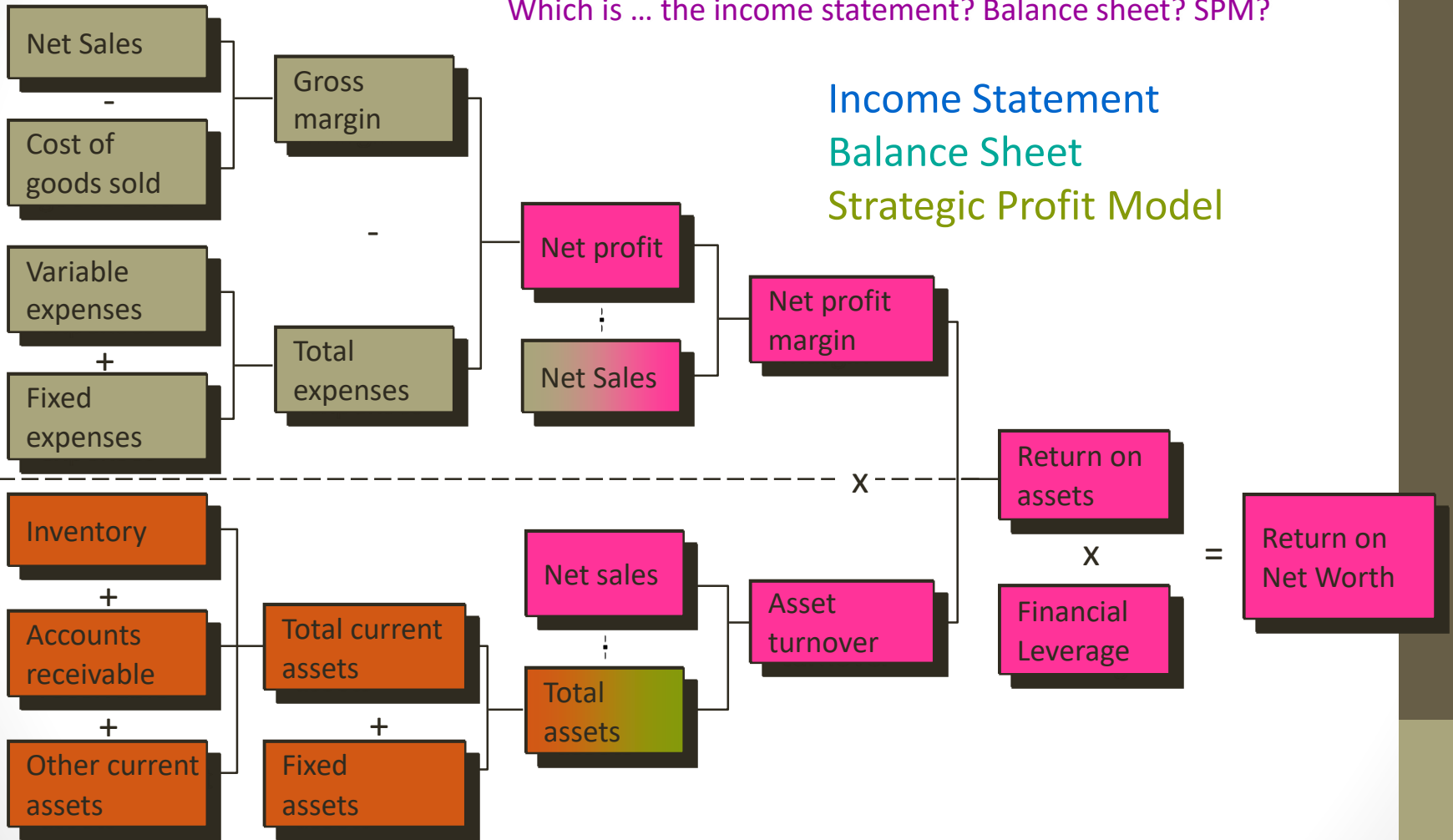
$$\text{Return on Investment} = \text{Net Profit Margin \%} \times \text{Asset Turnover} \times \text{Leverage Ratio}$$

Big Lots: 24.6%	13.1	1.5	1.2
Albertson's: 18.9%	2.1	4.2	2.1
The Dress Barn: 32.4%	7.4	2.9	1.5
Land's End: 40.2%	6.8	3.1	1.9
The Limited: 32.3%	6.7	2.2	2.2
The Gap: 25.5%	6.6	2.4	1.6

ROI Model, Including The Strategic Profit Model

Which is ... the income statement? Balance sheet? SPM?

Income Statement
Balance Sheet
Strategic Profit Model



Retail Strategies

Look at some of these firms and figure out their strategy

http://marriottschool.net/teacher/swinyard/Retailing/retail_links.htm

As the previous slide points out, the two arms of the Dupont ROA identity could be thought of as reflecting alternatives focusing on the income statement (profit margin) versus on the balance sheet (volume).

However, both approaches really reflect different uses of a company's assets.

The next slide shows how Walmart has worked on one aspect of its balance sheet, while the remaining slides look at how Tiffany's marketing focus on profit margin is reflected in *its* asset choices.

Walmart's focus on efficient asset use

The use of information technology has been an essential part of Wal-Mart's growth. A decade ago Wal-Mart trailed K-Mart, which could negotiate lower wholesale prices due to its size. Part of Wal-Mart's strategy for catching up was a point-of-sale system, a computerized system that identifies each item sold, finds its price in a computerized database, creates an accurate sales receipt for the customer, and stores this item-by-item sales information for use in analyzing sales and reordering inventory. Aside from handling information efficiently, effective use of this information helps Wal-Mart avoid overstocking by learning what merchandise is selling slowly. Wal-Mart's inventory and distribution system is a world leader. Over one 5 year period, Wal-Mart invested over \$600 million in information systems.

Wal-Mart use telecommunications to link directly from its stores to its central computer system and from that system to its supplier's computers. This allows automatic reordering and better coordination. Knowing exactly what is selling well and coordinating closely with suppliers permits Wal-Mart to tie up less money in inventory than many of their competitors. At its computerized warehouses, many goods arrive and leave without ever sitting on a shelf. Only 10% of the floor space in Wal-Mart stores is used as an inventory area, compared to the 25% average for the industry.

<http://www.prenhall.com/divisions/bp/app/alter/student/useful/ch1walmart.html>

Financial Information

Tiffany	2004	2003	2002	2001	2000
Net Sales/Cash from Sales	0.993	0.995	1.003	1.006	0.991
Net Sales/Net A/R	15.153	15.095	16.306	15.591	12.33
Net Sales/Inventory	2.296	2.331	2.627	2.559	2.915
Asset Turnover	0.836	0.887	0.985	1.064	1.095
Net Income/Sales	9.90%	11.43%	10.81%	11.13%	10.78%
ROA	9.01%	9.87%	10.64%	9.87%	9.01%
ROE	11.84%	12.25%	9.75%	15.72%	14.68%

Whitehall	2004	2003	2002	2001	2000
Net Sales/Cash from Sales	1.003	1.001	0.999	0.995	1
Net Sales/Net A/R	99.84	252.54	285.04	210.39	135.48
Net Sales/Inventory	2.14	1.99	1.95	1.73	1.67
Asset Turnover	1.454	1.404	1.343	1.252	1.201

Zales	2004	2003	2002	2001	2000
Net Sales/Cash from Sales	1	1	1	1	1
Net Sales/Net A/R	N/A	N/A	N/A	N/A	N/A
Net Sales/Inventory	2.91	2.88	2.8	2.77	1.57
Asset Turnover	1.338	1.496	1.472	1.709	1.007

Tiffany Brand Strategy

- The TIFFANY & CO. brand is the single most important asset of Tiffany. The strength of the Brand goes beyond trademark rights and is derived from consumer perceptions of the Brand. Management monitors the strength of the Brand through focus groups and survey research.
- Management believes that consumers associate the Brand with high-quality gemstone jewelry, particularly diamond jewelry; excellent customer service; an elegant store and online environment; upscale store locations; “classic” product positioning; distinctive and high-quality packaging materials (most significantly, the TIFFANY & CO. blue box); and sophisticated style and romance.
- Intangible Assets consist primarily of Product Rights and Trademarks (about \$10m. in 2010)

Tiffany Brand Strategy

- Tiffany's business plan includes many expenses and strategies to maintain the strength of the Brand. Stores must be staffed with knowledgeable professionals to provide excellent service.
- Elegant store and online environments increase capital and maintenance costs.
- Display practices require sufficient store footprints and lease budgets to enable Tiffany to showcase fine jewelry in a retail setting consistent with the Brand's positioning.
- Stores in the best "high street" and luxury mall locations are more expensive and difficult to secure, but reinforce the Brand's luxury connotations through association with other luxury brands.

Tiffany Brand Strategy

- The classic positioning of Tiffany's product line supports the Brand, but limits the display space that can be afforded to fashion jewelry. Tiffany's packaging practices support consumer expectations with respect to the Brand and are more expensive.
- Some advertising is done primarily to reinforce the Brand's association with luxury, sophistication, style and romance, while other advertising is primarily intended to increase demand for particular products.
- Maintaining its position within the high-end of the jewelry market requires Tiffany to invest significantly in diamond and gemstone inventory and accept reduced overall gross margins; it also causes some consumers to view Tiffany as beyond their price range.

Tiffany and Walmart Stores

In the following videos, see how Tiffany and Walmart differ in their asset use and relate them to the previous discussion.

<http://www.youtube.com/watch?v=tbG0btCu1S4&feature=related>

<http://www.trendhunter.com/trends/tiffany-co-to-launch-70-new-stores>

[Walmart Stores](#)

<http://www.youtube.com/watch?v=RJphoRD1w0I>