

Comparables

(Welch, Chapter 15)

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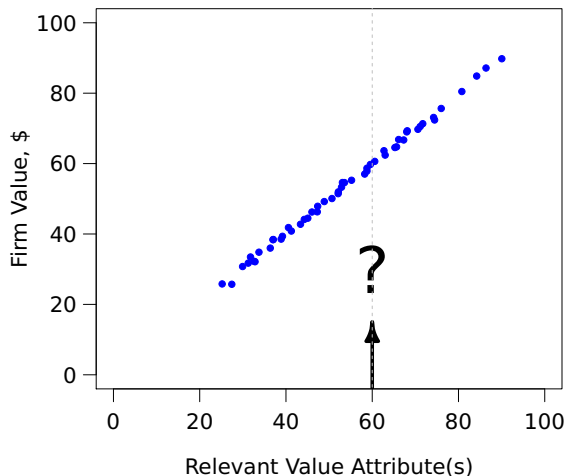
Did you bring your calculator? Did you read these notes and the chapter ahead of time?

Our firm's **comparable** has a P/E of 20. Your firm has earnings of \$5, but you don't know its value. What do you think your firm's value could be?

What are the NPV inputs? Where do the financial markets tell us the inputs for the NPV analysis for our project?

Does NPV use information from similar firms
(comparables)?

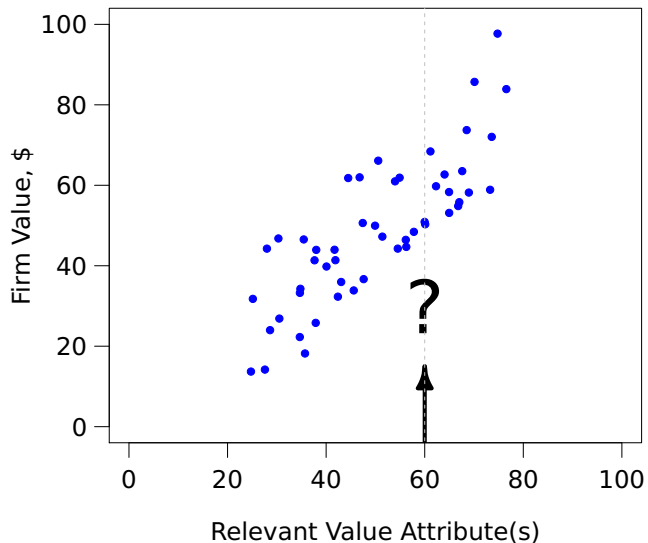
Can you value this firm?



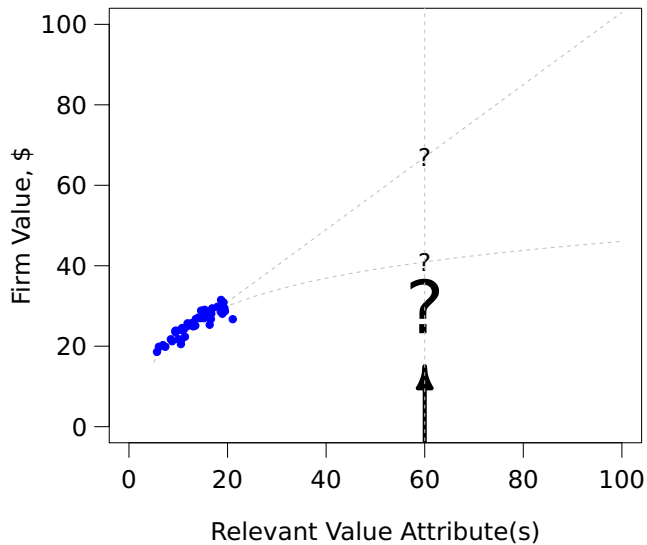
Value Attribute here could be earnings, price-earnings, assets, patents—or even your own PV estimates. Both X and Y could be per-share or total. Each comparables firm is a dot.

But why not use NPV for your firm instead?

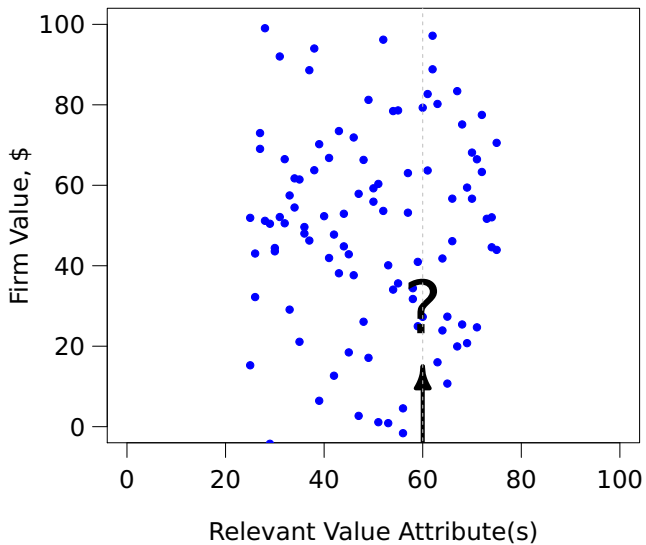
Can you value this firm?



Can you value this firm?



Can you value this firm?



Does NPV have conceptual problems?

Does NPV have real-world application problems?

Is there a subjective factor in NPV? Is there a subjective factor in Comparables?

Where would comparables fail? Are comparables better or worse than NPV?

Why do most informed people use earnings instead of cash flows for comps?

Assume the cost of capital is 10%. What is the P/E ratio of a firm with a 5% **eternal** growth-rate?

Assume the cost of capital is 10%. What is the P/E ratio of a firm with a -10% eternal growth-rate?

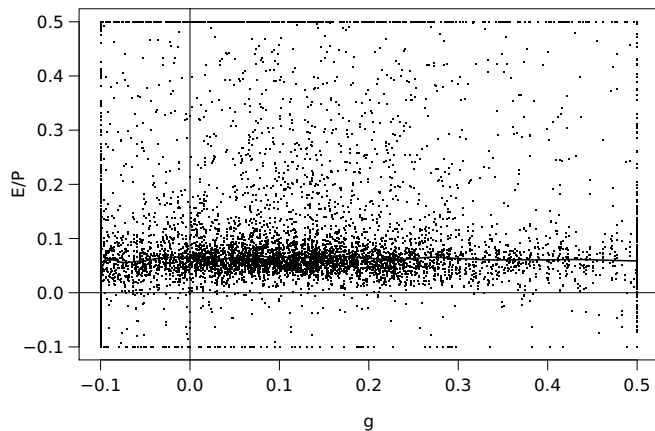
Are P/E ratios higher for growth or value firms?

Assume the cost of capital is 10%. What is the **PVGO** of a firm with a +10% or -10% eternal growth-rate?

What pairs of firms are the best comps for one another?

Guess the P/E of your comps, plus MSFT, GOOG, Coca-Cola, GS, F, Altria, etc.

Look Ma, No Hands



This is as of 2016. $\text{Exp}(E)$ are analysts' earnings forecasts. P is price.

- ▶ Do higher-growth firms have higher or lower E/P ratios?
- ▶ How noisy is your prediction?

Value PepsiCo based on Coca-Cola's P/E

How similar is Coca-Cola to PepsiCo?

Firm A is worth \$200 based on comps. Firm B is worth \$200 based on comps. If A and B merge, what is the value of AB?

Industry X has 3 firms:

- A has P of \$1,000, E of \$5.
- B has P of \$200, E of \$10.
- C has P of \$700, E of \$70.

Your firm is in the same industry and has an E of \$25.

What is it worth?

Oops. I was wrong. We overestimated the sales of A (a firm worth \$1,000) by \$4. This means that A's earnings were not \$5, but \$1. What is your own firm worth?

Oops. I was wrong. We overestimated the sales of A (a firm worth \$1,000) by \$6. This means that A's earnings were not \$5, but $-\$1$. What is your own firm worth?

What can you do to mitigate the $1/X$ problem?

Assume $r=10\%$, $g=0\%$. What is a P/E ratio? Does its P/E change if the firm refinances to 50% debt (with 5% cost of capital) and 50% equity (with 15% cost of capital)?

It is $P/E=10$ at the start. So, presume \$1 in earnings, \$10 in value.

At the refinance, our firm becomes a \$5 equity firm with interest payments on \$5 of 5%, or 25 cents. It now has 75 cents in earnings. Its P/E ratio will be $\$5/\$0.75=6.8$.

So, leverage can affect P/E ratios. In the book, there are examples where leverage can have the opposite effect.

How do you value internet startup firms whose earnings are negative?

How do you value biotech startup firms whose earnings are negative and whose sales are zero?

Google or Yahoo Industry Comps

The locations keep changing, but if you google for combinations of

- ▶ industry
- ▶ peers
- ▶ ratios
- ▶ comparables

you usually get a whole slew of responses.

Do you prefer Comps or NPVs? Which one is easier?
Which one is better?