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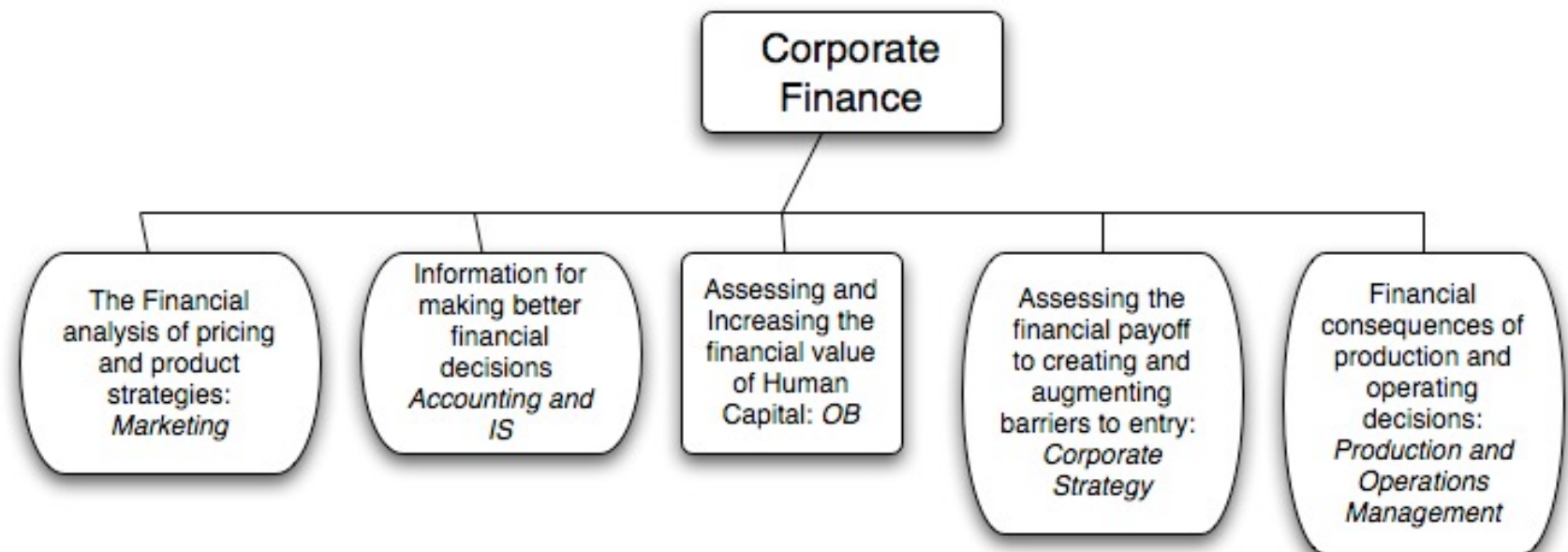
Valuation app for iPad/iPhone: uValue on iTunes U

Don't sweat the small stuff: A big picture perspective on corporate finance

Aswath Damodaran

Lesson 1: Every business decision is ultimately a financial one

- Every decision that a business makes has financial implications, and any decision which affects the finances of a business is a corporate finance decision.
- Defined broadly, everything that a business does fits under the rubric of corporate finance.



So, watch out for these justifications

- The “Expert” Cop out: For many firms, the easiest way to explain the unexplainable is to pass the buck and get a consultant/expert to sign off on an action.
- Weapons of distraction: Managers/investors/analysts seem to find ways of overriding the numbers with buzz words. Here are some to watch out for:
 - “Gut feeling” or “Intuition”: Older, more experienced managers often claim to have a gut feeling about decisions. Psychological studies of gut feeling find that they are almost never based upon good data, are often completely wrong and get worse as managers get smarter/ more experienced.
 - “Strategic”: The word “strategic” almost always goes to describe actions that cannot be justified based upon the numbers...

Lesson 2: Have a destination before you leave: Have a dominant objective that is measurable...

- If you don't have an objective, your decision-making process has no rudder. Each manager will then create his or her own vision of where the business is going, and make decisions based on that vision.
- If you have multiple objectives, you will still have to make choices. If you are not clear about which objective should dominate, managers again will pick their own dominant objectives, leading to them working at cross purposes.
- If you have a fuzzy objective, you are giving no guidance on both how decisions should be made and no accountability for decisions, once made.

What is BHP's end game?

1. Is this it?

To bring people and resources together to build a better world.

2. Or this?

- ▣ Value and returns will be underpinned by **embedding social value**, being **excellent at operations and at allocating capital**, and by ensuring we have a portfolio with options that allow us to invest in **meeting society's needs in the short, medium and long term**.

A Scorecard for BHP

A strong set of results, safely achieved

Our people maintained an unwavering focus on safety in a challenging year across the globe. **0** Fatalities

Total recordable injury frequency fell **↓11%** to 4.2 per million hours worked.

Safety remains our top priority and we continue to search for ways to improve safety across our business.

High potential injuries (HPI) decreased by **16 per cent** from FY2019 and the frequency rate decreased by **23 per cent**.

HPI trends remain a primary focus to assess progress against our most important safety objective: to eliminate fatalities.

We contributed to social value in the communities in which we operate

We invested **US\$150m**

in environmental and social programs, including responding to the COVID-19 pandemic through social investment funds.

During FY2020, **12 per cent** of our external expenditure was with local suppliers. An additional **84 per cent** of our supply expenditure was located within the regions in which we operate.

We embedded social value priorities into our annual business planning process.

We remained true to our environmental commitments

We set a target to reduce our operational greenhouse gas emissions by at least **30%** by FY2030 (from FY2020 levels⁽¹⁾) and our long-term goal is to achieve net-zero operational emissions by 2050.

In line with our water stewardship commitments and our five-year public target for water, we continued to reduce our freshwater withdrawals, with FY2020 withdrawals now **19 per cent** below our FY2017 baseline, exceeding our **15 per cent** reduction target.

We eliminated extraction of groundwater for operational supply purposes at Escondida 10 years ahead of schedule, and announced a move to **100 per cent** renewable power for Escondida and Spence by the mid-2020s.

We delivered a strong financial performance

Our Attributable profit was **US\$8.0b**

and our Underlying EBITDA⁽²⁾ was **US\$22.1 billion**, at an Underlying EBITDA margin⁽²⁾ of **53 per cent**.

We generated free cash flow⁽²⁾ of **US\$8.1 billion**. Our balance sheet remains strong, with net debt⁽²⁾ at **US\$12.0 billion** and at the bottom of our target range.

We created value for our shareholders

Total dividends of **120 US cents** per share and basic earnings per ordinary share of **157.3 US cents**. Our underlying return on capital employed⁽²⁾ was **17%**.

Measuring success? In accounting terms...

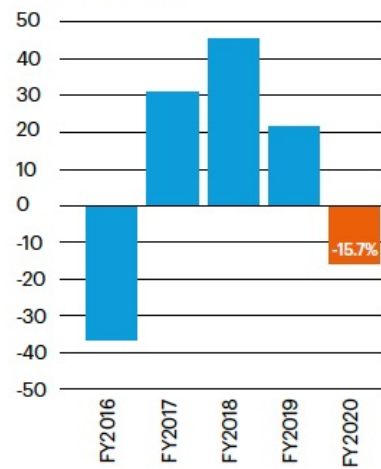
	Profit		Earnings		Cash		Returns	
Measure:	Profit after taxation from Continuing operations	US\$M 8,736	Profit after taxation from Continuing operations	US\$M 8,736	Net operating cash flows from Continuing operations	US\$M 15,706	Profit after taxation from Continuing operations	US\$M 8,736
Made up of:	Profit after taxation		Profit after taxation		Cash generated by the Group's consolidated operations, after dividends received, interest, taxation and royalty-related taxation. It excludes cash flows relating to investing and financing activities		Profit after taxation	
Adjusted for:	Exceptional items before taxation	1,546	Exceptional items before taxation	1,546			Exceptional items before taxation	1,546
	Tax effect of exceptional items	(241)	Tax effect of exceptional items	(241)			Tax effect of exceptional items	(241)
	Exceptional items after tax attributable to non-controlling interests	(201)	Depreciation and amortisation excluding exceptional items	6,112			Net finance costs excluding exceptional items	818
	Exceptional items attributable to BHP shareholders	1,104	Impairments of property, plant and equipment, financial assets and intangibles excluding exceptional items	85			Income tax expense on net finance costs	(267)
	Profit after taxation attributable to non-controlling interests	(780)	Net finance costs excluding exceptional items	818			Profit after taxation excluding net finance costs and exceptional items	10,592
			Taxation expense excluding exceptional items	5,015			Net Assets at the beginning of period	51,824
							Net Debt at the beginning of period	9,446
							Capital employed at the beginning of period	61,270
							Net Assets at the end of period	52,246
							Net Debt at the end of period	12,044
							Capital employed at the end of period	64,290
							Average capital employed	62,780
To reach our KPIs	Underlying attributable profit	9,060	Underlying EBITDA	22,071	Net operating cash flows	15,706	Underlying Return on Capital Employed	16.9%
Why do we use it?	Underlying attributable profit allows the comparability of underlying financial performance by excluding the impacts of exceptional items and is a performance indicator against which short-term incentive outcomes for our senior executives are measured. It is also the basis on which our dividend payout ratio policy is applied.		Underlying EBITDA is the key Alternative Performance Measure that management uses internally to assess the performance of BHP's segments and make decisions on the allocation of resources and, in our view, is more relevant to capital intensive industries with long-life assets.		Net operating cash flows provide insights into how we are managing costs and increasing productivity across BHP.		Underlying Return on Capital Employed is an indicator of the Group's capital efficiency and is provided on an underlying basis to allow comparability of underlying financial performance by excluding the impacts of exceptional items.	

Measuring success: In other terms...

Capital management KPIs

Total shareholder return

% change from previous year
(3-month average)



Long-term credit rating

2020 A, A2

2019 A, A2

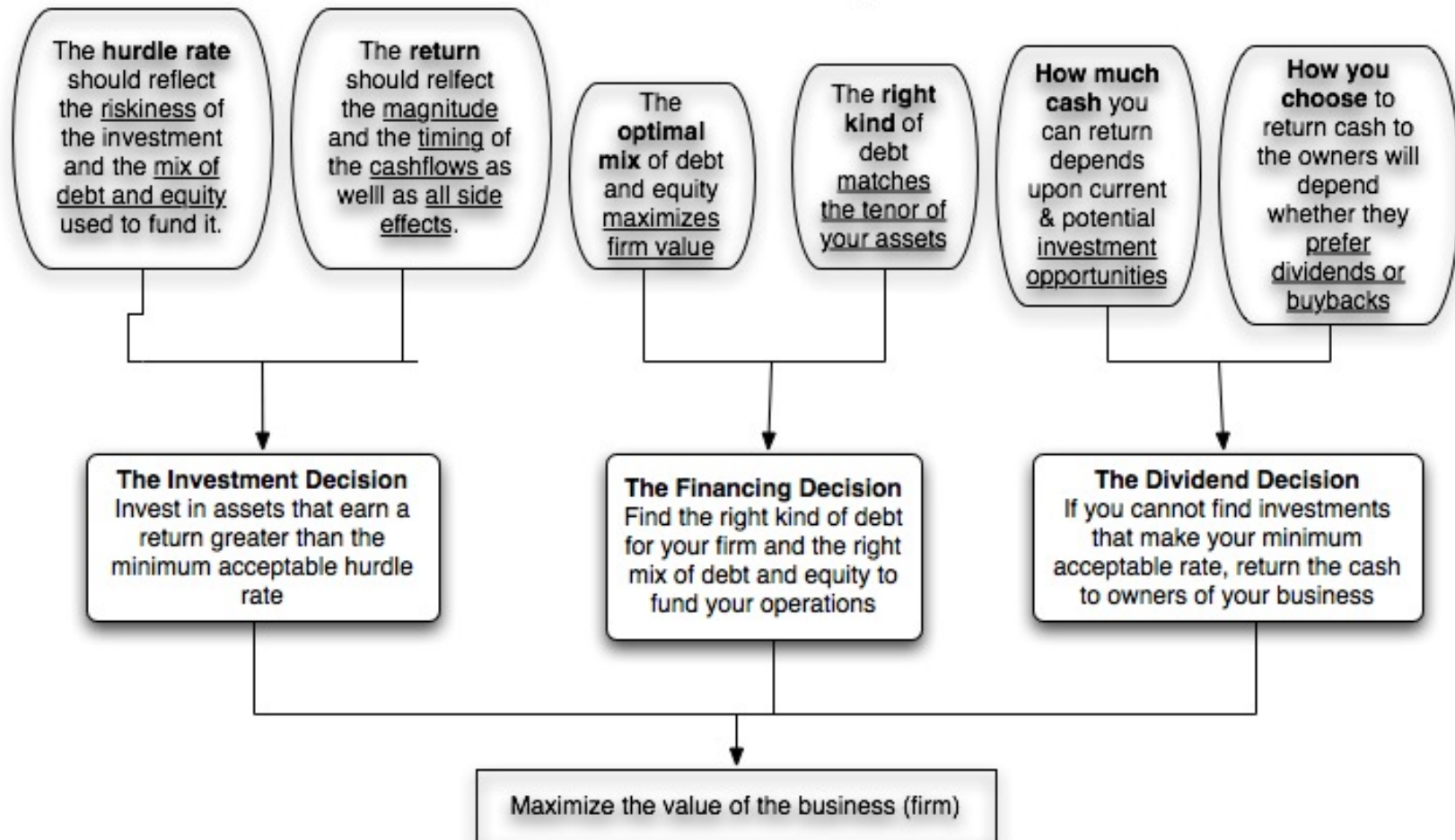
2018 A, A3

2017 A, A3

2016 A, A3

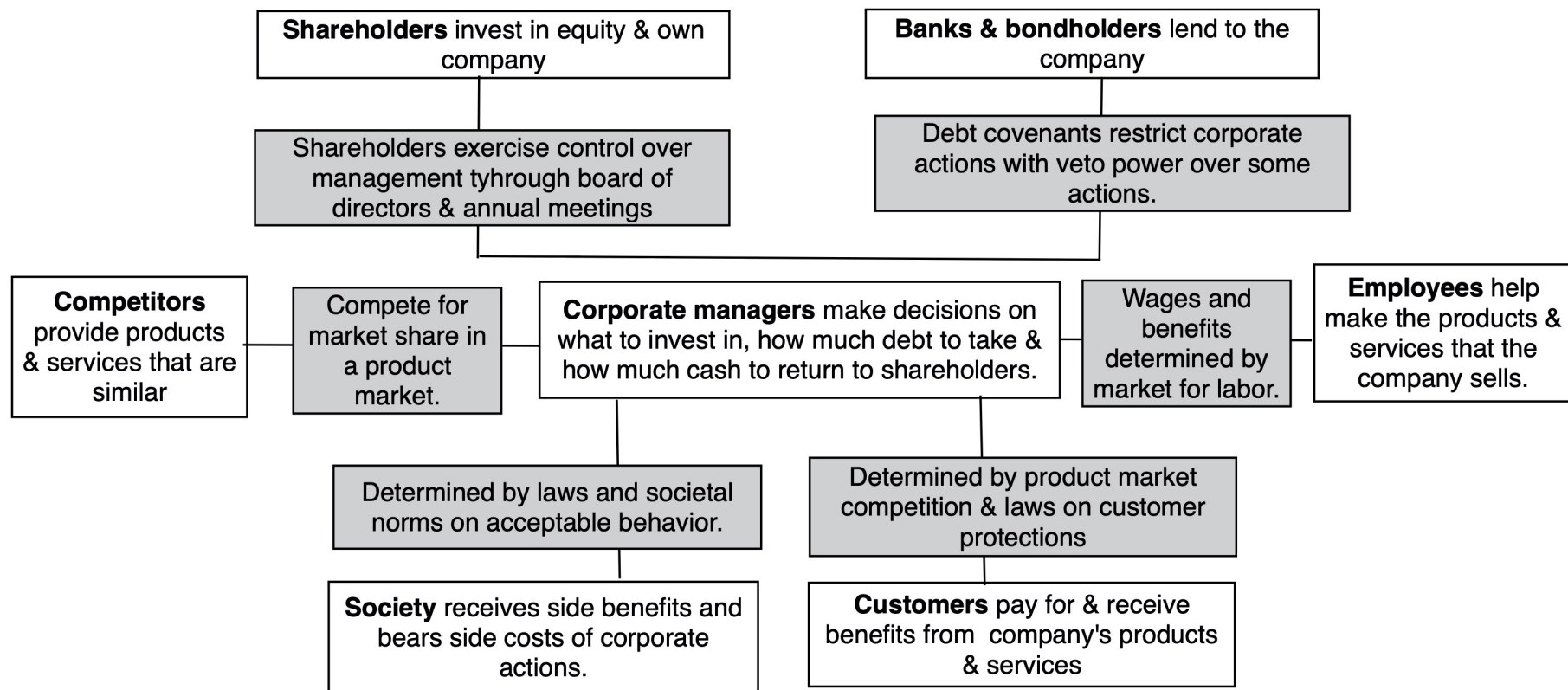
Here is my choice...

Corporate Finance: The Big Picture



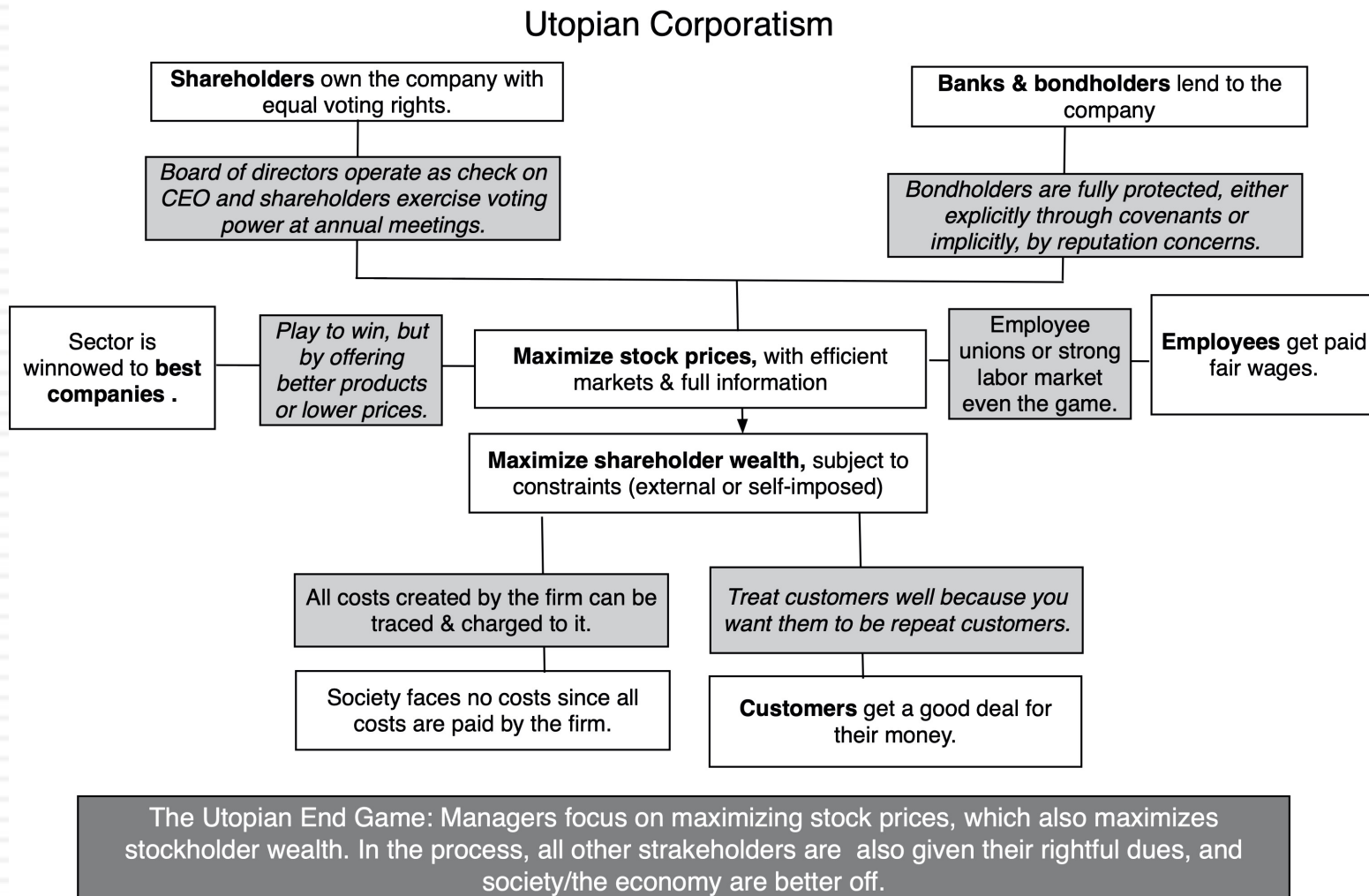
Lesson 3: In any business, you are juggling conflicting interests..

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Utopian Corporatism

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With the board of directors as a good example of the conflict of interest...

- In theory, the board of directors should work to protect the best interests of stockholders, monitoring top management to ensure that they do their fiduciary duty.
- In practice, boards are not effective because:
 - ▣ They are rubber stamps for CEOs: In many companies, the directors who sit on the board are picked by the CEO and inside stockholders. While outside stockholders get to nominally vote on these directors, they are not given any real say in the process.
 - ▣ Directors are ill equipped to play the role of monitors: Directors often lack the expertise to question top managers, lack the information to raise questions and the time to follow through.
 - ▣ Directors are generally not large stockholders nor do they represent them: In most companies, directors own only token stakes in the company.

The BHP Board: Be the judge!

<i>Director</i>	<i>Tenure (in years)</i>	<i>Background/Details</i>
Ken MacKenzie (Chair)	5	Was MD/CEO of Amcor Limited (2005-2015)
Mike Henry	1	Current CEO of BHP since 2020
Terry Bowen	4	Managing Partner & Head, BGH Capital, 2009-2017
Malcolm Broomhead	11	MD/CEO of Orica Limited, 2001-2005
Ian Cockerill	2	Chief of BlackRock World Mining Trust plc
Anita Frew	6	Chair of Croda International plc
Gary Goldberg	1	CEO of Newmont Corp
Susan Kilsby	2	Senior executive, Credit Suisse
Lindsay Maxsted	10	CEO, KPMG Australia
John Mogford	4	Multiple roles, BP & MD of First Reserve
Shriti Vadera	10	UBS/Warburg from 1984-1999, UK Cabinet
Dion Weisler	1	President & CEO of HP

External Assessments of your corporate governance

Refinitiv (Top 100)

Company Rank	Company Name	Country	Industry	Overall Governance Score
1	Royal Dutch Shell PLC	Netherlands	Energy - Fossil Fuels	97.9
2	NK Rosneft' PAO	Russia	Energy - Fossil Fuels	97.7
3	Johnson Matthey PLC	United Kingdom	Chemicals	97.7
4	Endeavour Mining Corp	United Kingdom	Mineral Resources	97.5
5	AIA Group Ltd	Hong Kong	Insurance	97.3
6	BHP Group Ltd	Australia	Mineral Resources	97.2
7	Alcoa Corp	United States of America	Mineral Resources	96.9
8	Newmont Corporation	United States of America	Mineral Resources	96.9
9	Sime Darby Plantation Bhd	Malaysia	Food & Beverages	96.8
10	AngloGold Ashanti Ltd	South Africa	Mineral Resources	96.8

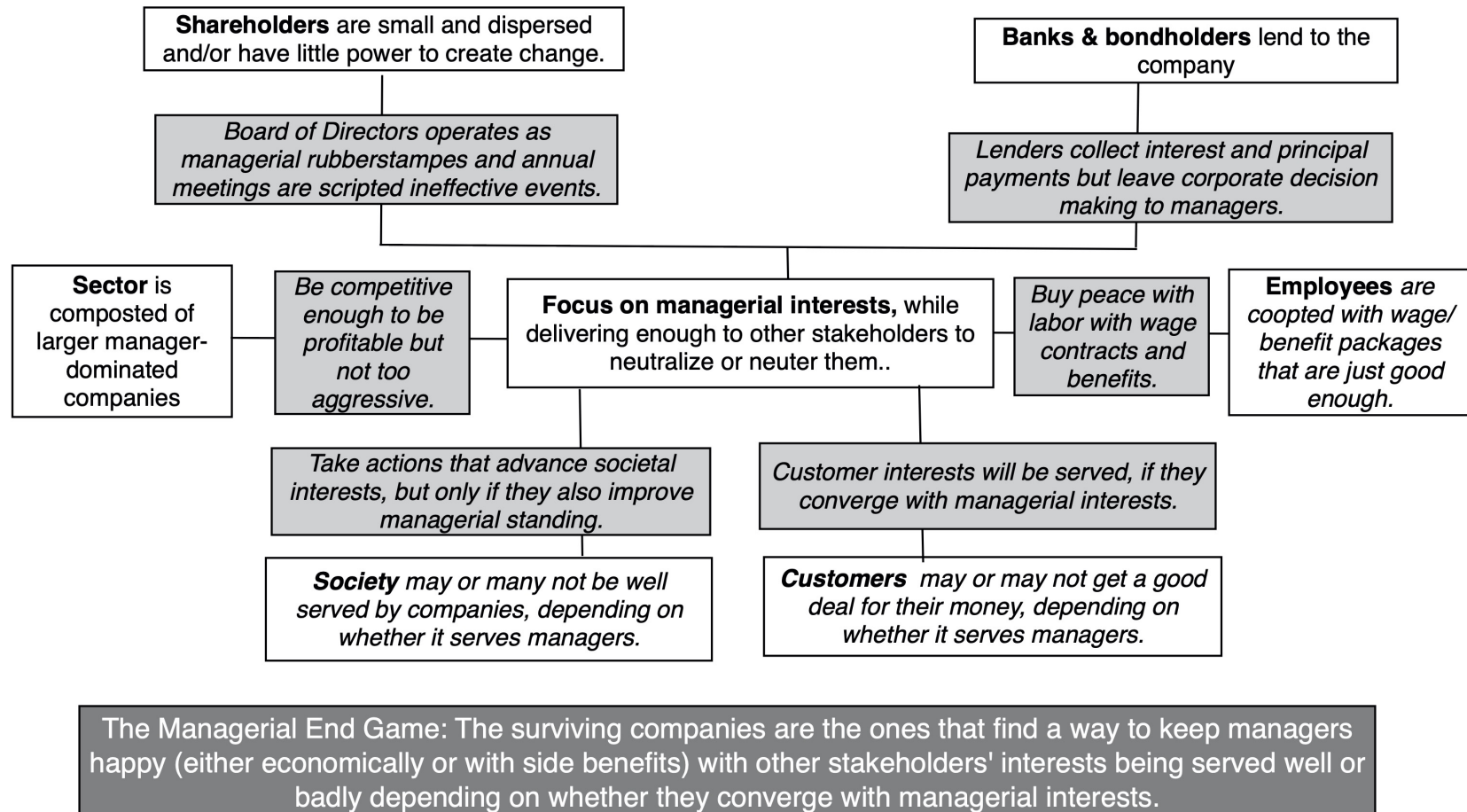
ISS Corporate Governance (Scores 1-10, lower is better)

Category	Score
Audit	4
Board	1
Shareholder Rights	1
Compensation	4

One End game: Managerial Corporatism

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Managerial Corporatism



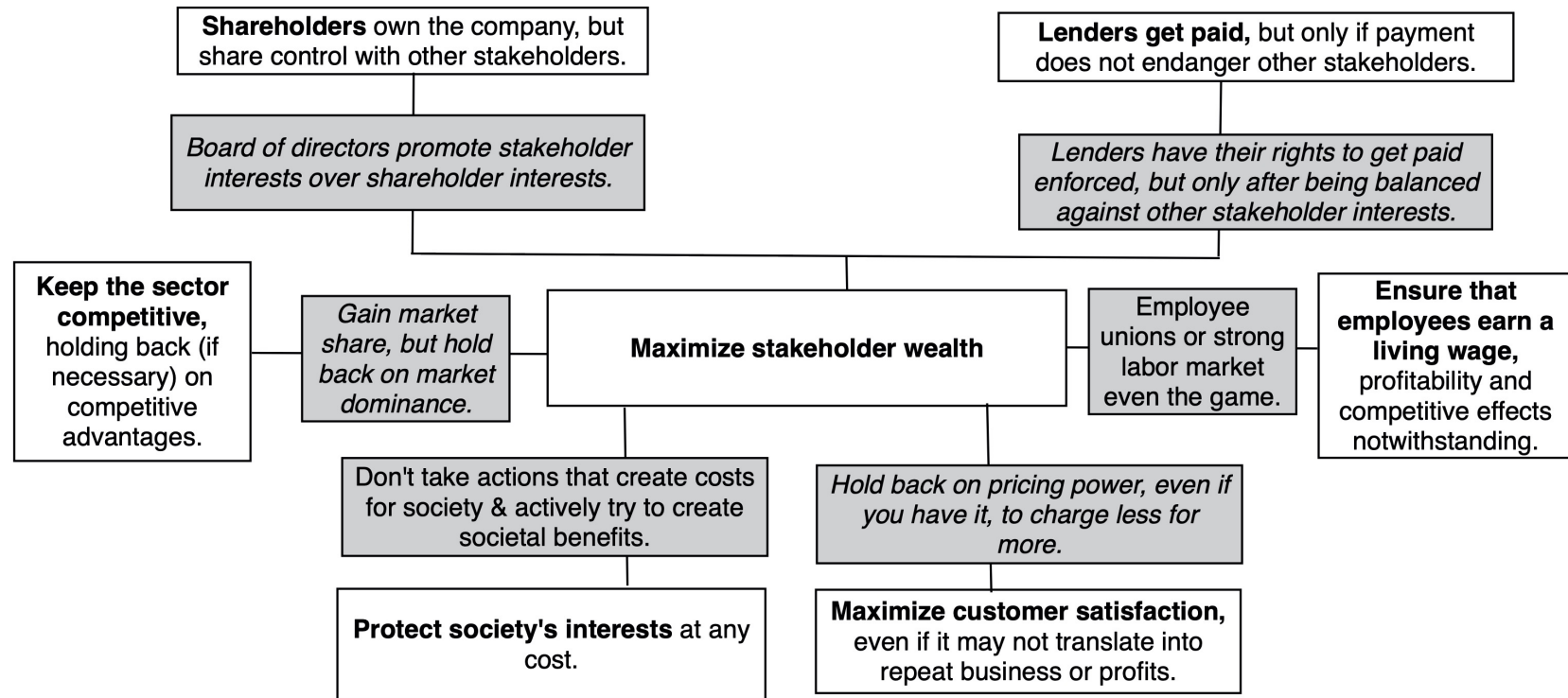
The Business Roundtable's Message..

- *While each of our individual companies serves its own corporate purpose, we share a **fundamental commitment to all of our stakeholders**. We commit to:*
 - ▣ ***Delivering value to our customers.** We will further the tradition of American companies leading the way in meeting or exceeding customer expectations.*
 - ▣ ***Investing in our employees.** This starts with compensating them fairly and providing important benefits. It also includes supporting them through training and education that help develop new skills for a rapidly changing world. We foster diversity and inclusion, dignity and respect.*
 - ▣ ***Dealing fairly and ethically with our suppliers.** We are dedicated to serving as good partners to the other companies, large and small, that help us meet our missions.*
 - ▣ ***Supporting the communities in which we work.** We respect the people in our communities and protect the environment by embracing sustainable practices across our businesses.*
 - ▣ ***Generating long-term value for shareholders,** who provide the capital that allows companies to invest, grow and innovate. We are committed to transparency and effective engagement with shareholders*

Confused Corporatism

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Confused Corporatism



The Confused End Game: In the attempt to serve all stakeholders, none will be served, and there will be no accountability for managers, leading to companies that are less competitive and efficient.

BHP's Payoffs to Stakeholders

Total economic contribution in FY2020

Suppliers⁽²⁾

Payments made to our suppliers for the purchase of utilities, goods and services

US\$15.5b

+

Employees⁽²⁾

Employee expenses for salary, wages and incentives

US\$3.9b

+

Shareholders, lenders and investors

Dividend and interest payments

US\$8.6b

+

Total payments to governments

Income taxes, royalty-related income taxes, royalties and other payments to governments

US\$9.1b

+

Social investment^{(2) (3)}

Contributions and administrative costs

US\$150m

Total economic contribution

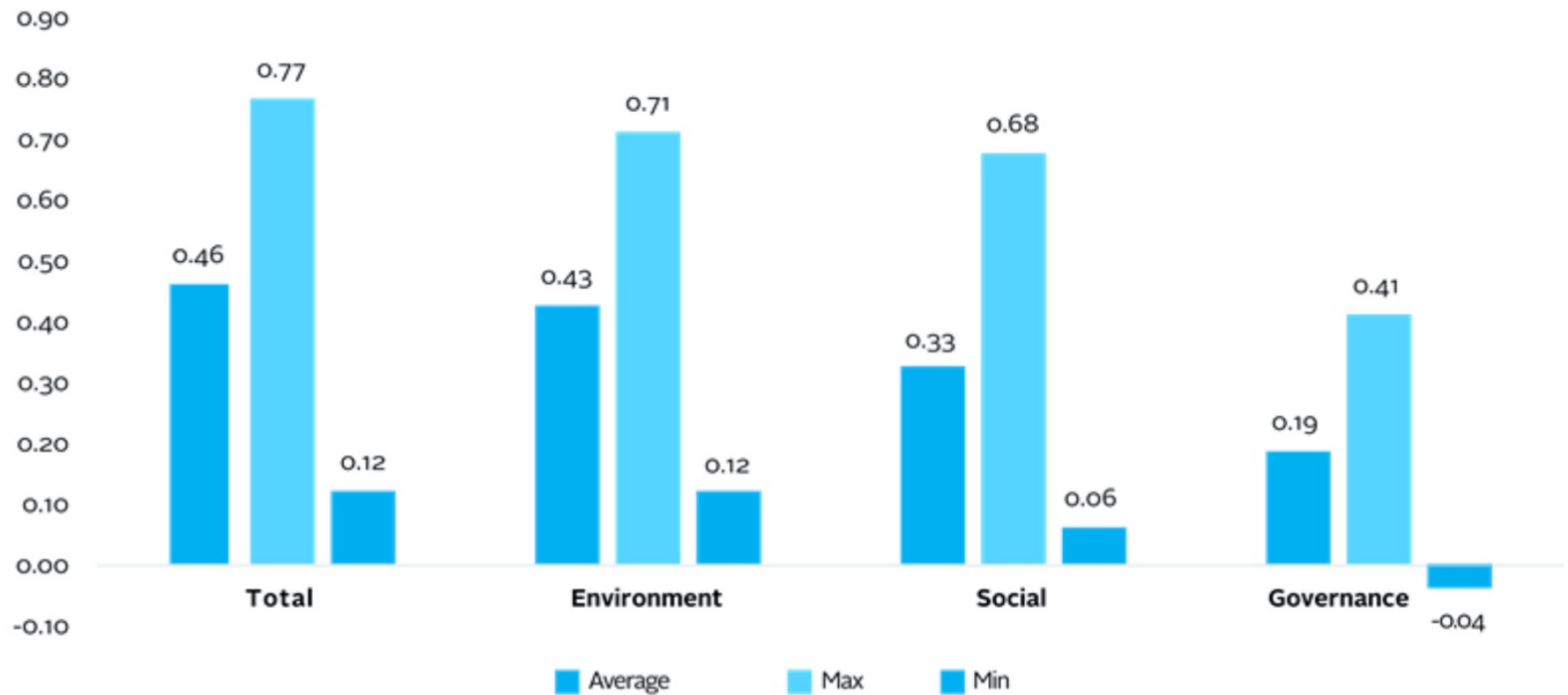
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US\$37.2b

The ESG Promises: Cake for all, with no calories!

- Good for companies: For companies, the promise is that being "good" will generate higher profits for the company, at least in the long term, with lower risk, and thus make them more valuable.
- Good for investors: For investors in these companies, the promise is that investing in "good" companies will generate higher returns than investing in "bad" or middling companies.
- Good for society: For society, the promise is that not only would good companies help fight problems directly related to ESG, like climate change and low wages, but also counter more general problems like income inequality and healthcare crises.

But what comprises goodness? The services disagree..



Average, minimum, and maximum correlations across providers

BHP's ESG Ranking

BHP Group Ltd.

Industry Group: **Diversified Metals**

Country: **Australia**

Identifier: **ASX:BHP**

ESG Risk Rating

30.1 High Risk



Ranking

INDUSTRY GROUP

Diversified Metals

20 out of 149

UNIVERSE

Global Universe

8125 out of 13655

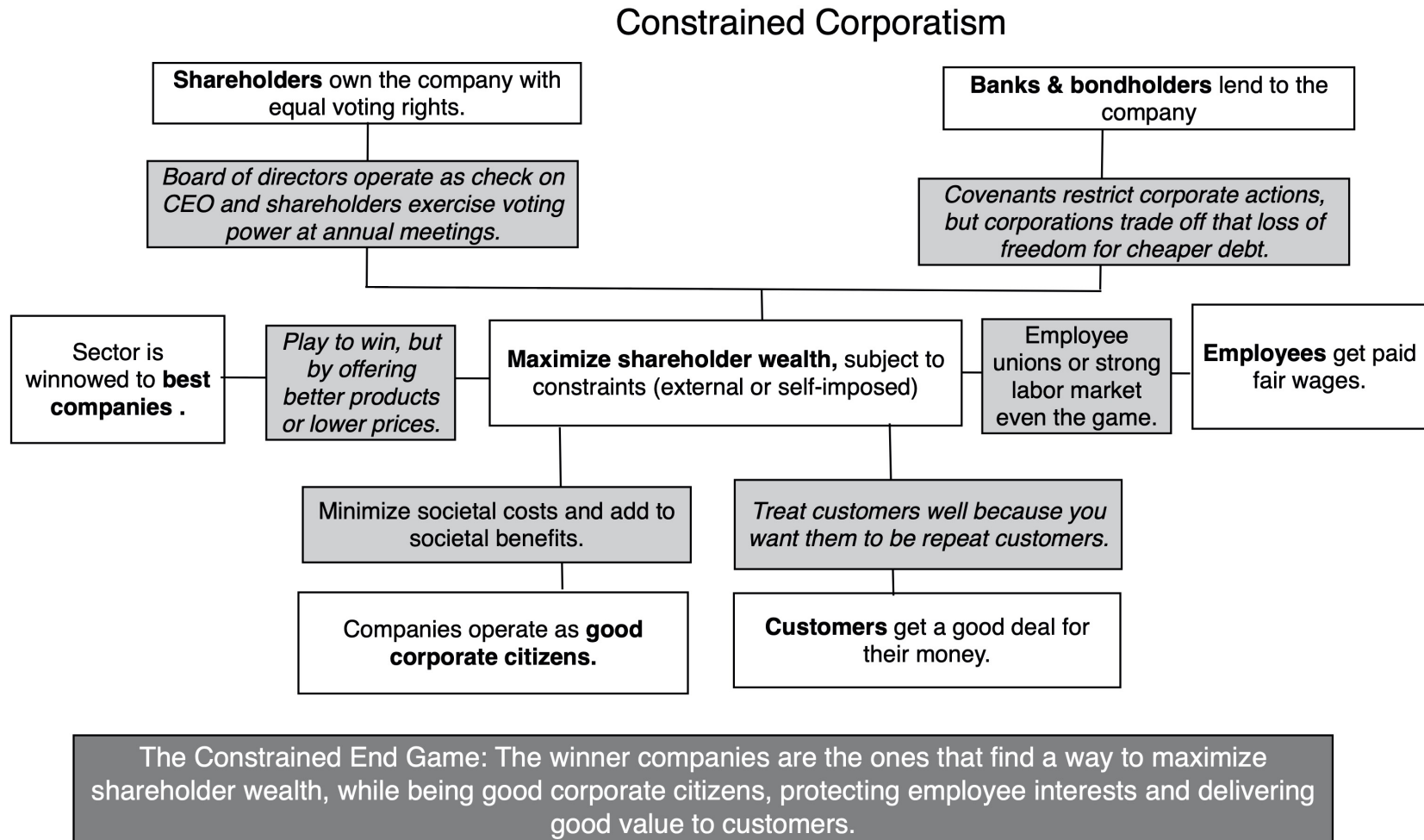
A Burning Question

- In the last decade, ESG scores have consistently weighted “oil” businesses as less green than other businesses (including mining). That has led some to argue that BHP should get out of the oil business by divesting its oil assets. Will this improve your ESG scores?
 - a. Yes
 - b. No
- Will it make BHP a “better” company?
 - a. Yes
 - b. No
- Will it increase ESG’s stock price?
 - a. Yes
 - b. No

ESG and Value: Where's the beef?

- A Weak Link to Profitability: There is *a small positive link between ESG and profitability*, but one that is very sensitive to how profits are measured and over what period. Breaking down ESG into its component parts, environment (E) offered the strongest positive link to performance and social (S) the weakest, with governance (G) falling in the middle.
- A Stronger Link to Funding Costs: [Studies of “sin” stocks](#), i.e., companies involved in businesses such as producing alcohol, tobacco, and gaming, find that these stocks are less commonly held by institutions and that they face higher costs for funding, from equity and debt). While these companies face higher costs, and have lower value, investors in these companies generate higher returns.
- And to Failure/Disaster Risk: “Bad” companies are exposed to disaster risks, where a combination of missteps by the company, luck, and a failure to build in enough protective controls (because they cost too much) can cause a disaster, either in human or financial terms.

Constrained Corporatism



Lesson 4: Understand the essence of risk

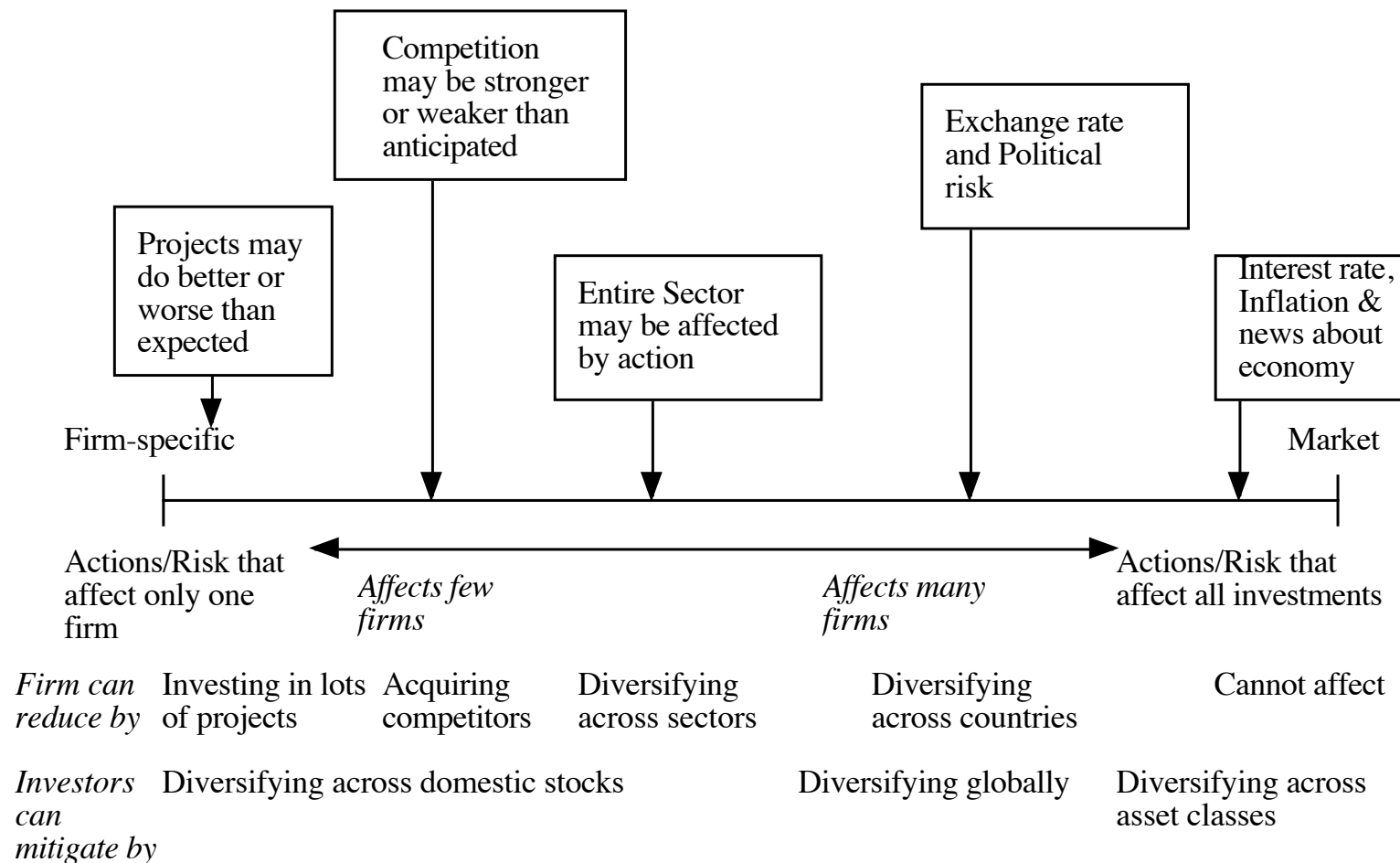
- Risk, in traditional terms, is viewed as a ‘negative’. Webster’s dictionary, for instance, defines risk as “exposing to danger or hazard”. The Chinese symbols for risk, reproduced below, give a much better description of risk:

危機

- The first symbol is the symbol for “danger”, while the second is the symbol for “opportunity”, making risk a mix of danger and opportunity. You cannot have one, without the other.

Risk can come from many places...

Figure 3.5: A Break Down of Risk



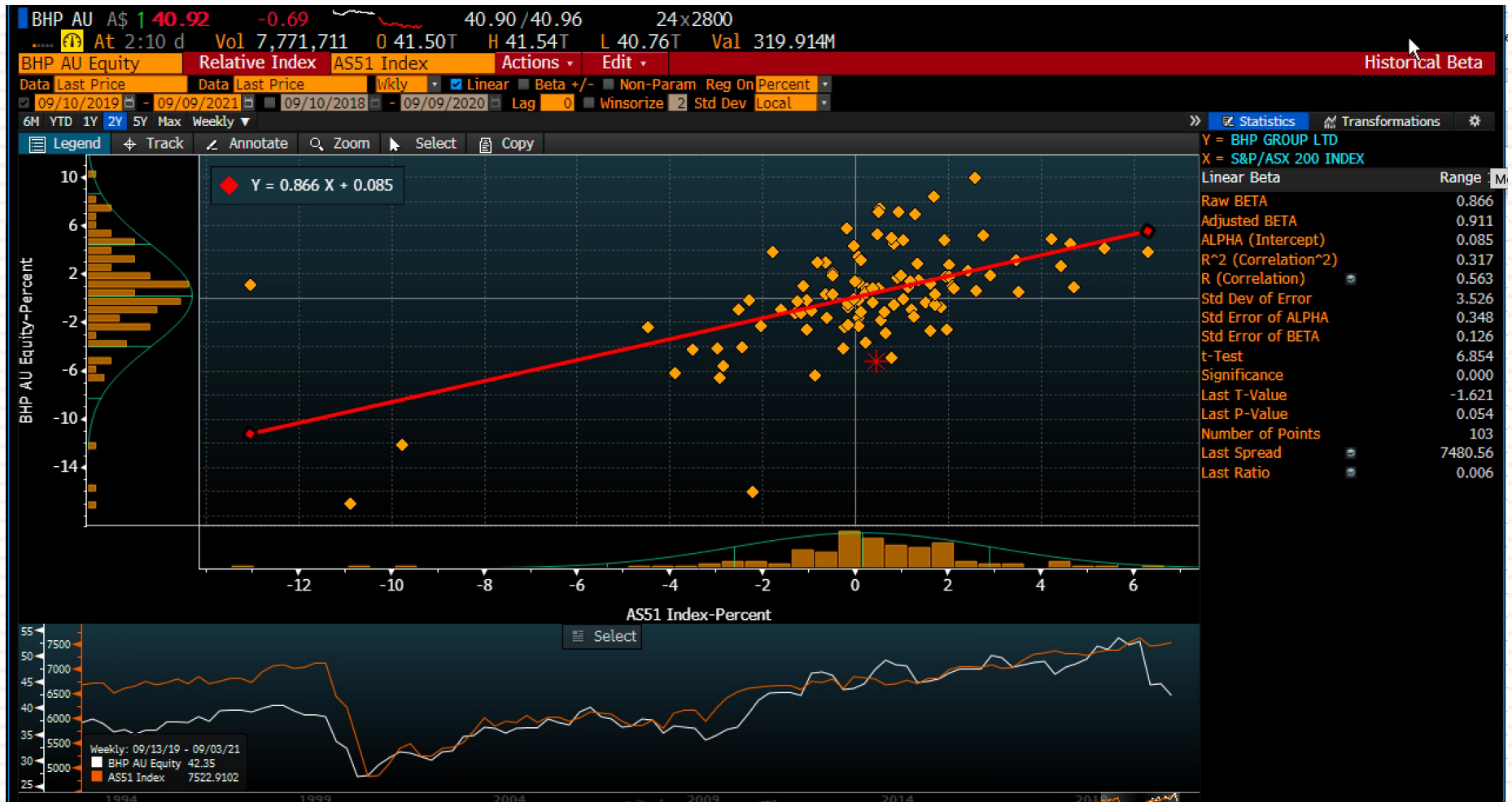
And not all risk is made equal...

- If you are a sole owner of a business, you are exposed to all of the risks in a business. Thus, your hurdle rate should reflect those risks.
- If you are a publicly traded company, the game changes. As a manager, you have look at risk through the eyes of the marginal investor in your company. There are two criteria that go into being a marginal investor:
 - You need to own enough stock to make a difference. In other words, you have to be a large stockholder.
 - You have to trade that stock. Thus, a founder who owns a lot of stock but does not trade is not the marginal investor.
- If that marginal investor is a mutual fund or institutional investor, the only risk they see in an investment is the risk that it adds to a diversified portfolio. Consequently, the only risk you as a manager should build into your hurdle rate is the risk that cannot be diversified away.

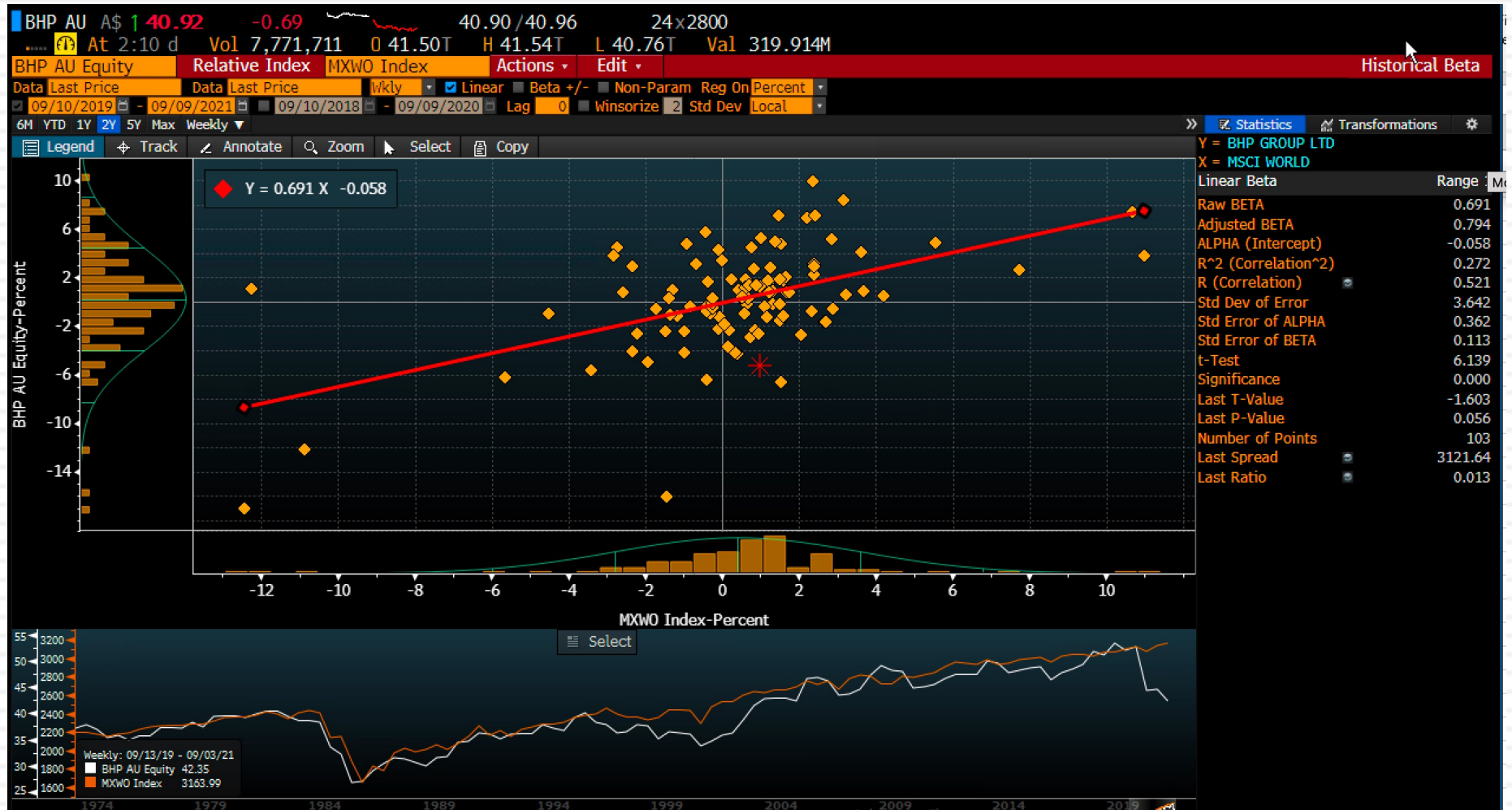
Know your marginal investor..

Holder Name	Portfolio Name	Source	Opt	Position	% Out	Latest Chg
		All	All			
1 + BlackRock Inc		13G		178,102,697	6.04	1,121,429
2 + Vanguard Group Inc/The		ULT-AGG		174,273,520	5.91	0
3 + Government Pension Investment Fund Japan	Multiple Portfolios	MF-AGG		19,446,909	0.66	-5,387,100
4 + FIL Ltd		ULT-AGG		18,147,932	0.62	437,536
5 + State Street Corp		ULT-AGG		16,131,274	0.55	-1,671,323
6 + T Rowe Price Group Inc		ULT-AGG		15,521,884	0.53	-1,087,679
7 + FMR LLC		ULT-AGG		14,026,943	0.48	274,560
8 Australian Foundation Investment Co Ltd		Annual Re..		13,413,159	0.45	0
9 + JPMorgan Chase & Co		ULT-AGG		12,485,087	0.42	-92,228
10 + Schroders PLC		ULT-AGG		8,683,655	0.29	-3,315,013
11 + Teachers Insurance & Annuity Association of America		ULT-AGG		8,592,755	0.29	103,644
12 Netwealth Investments Ltd/Australia		Annual Re..		7,996,830	0.27	2,851,986
13 + Argo Investments Ltd		Annual Re..		7,406,304	0.25	0
14 + Government Pension Fund Global	Multiple Portfolios	MF-AGG		6,997,600	0.24	6,997,600
15 + Charles Schwab Corp/The		ULT-AGG		6,779,328	0.23	6,740
16 + Dimensional Fund Advisors LP	Multiple Portfolios	MF-AGG		6,684,700	0.23	-73,059

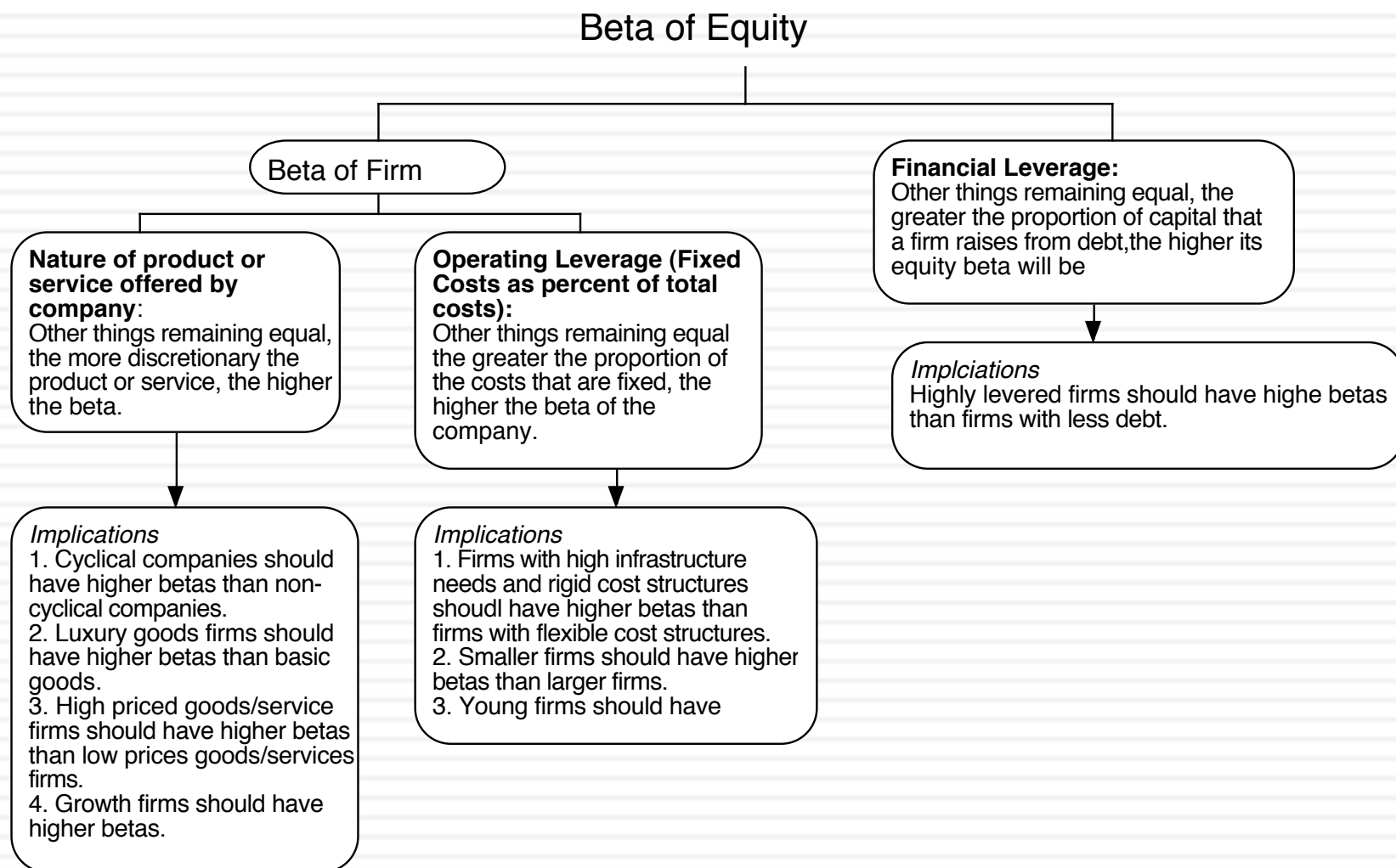
Your risk is not a statistical number or a Greek alphabet..



And playing with indices does not make it SO...



But comes from your choices as a business..



Let's do an intuitive check on BHP

- Broadly speaking, BHP is in two businesses, oil and mining, with mining broken down further into coal, iron ore and copper
 - a. Oil
 - b. Copper
 - c. Iron Ore
 - d. Coal
- Do you see them all as equally risky businesses?
 - ▣ If not, how would you rank them (from most to least risky)?
 - ▣ What measure of risk are you using?

Here is my try for BHP

Business	Exposure to market risk	Beta
Oil	Risk of the oil exploration/production business	0.90 (Average for oil production and exploration)
Copper	Risk of metals & mining business	0.83 (Average for metals & mining companies)
Iron Ore	Risk of metals & mining business	0.83 (Average for metals & mining companies)
Coal	Risk of coal & related energy	0.93 (Average for coal and related energy businesses)

<i>Business</i>	<i>Revenues</i>	<i>EV/Sales</i>	<i>Estimated Value</i>	<i>Unlevered Beta</i>
Coal & Related Energy	\$ 4,070	1.2333	\$ 5,020	0.90
Metals & Mining	\$ 31,463	1.6388	\$ 51,560	0.83
Oil/Gas (Production and Exploration)	\$ 6,242	2.7823	\$ 17,367	0.93
BHP	\$ 41,775		\$ 73,947	0.86

BHP: Cost of Equity by Business

<i>Business</i>	<i>Unlevered Beta</i>	<i>D/E Ratio</i>	<i>Levered Beta</i>	<i>Risk free Rate</i>	<i>ERP</i>	<i>Cost of Equity</i>
Coal & Related Energy	0.90	7.90%	0.95	1.30%	5.70%	6.71%
Metals & Mining	0.83	7.90%	0.88	1.30%	5.70%	6.31%
Oil/Gas (Production and Exploration)	0.93	7.90%	0.99	1.30%	5.70%	6.92%
BHP	0.86	7.90%	0.91	1.30%	5.70%	6.48%

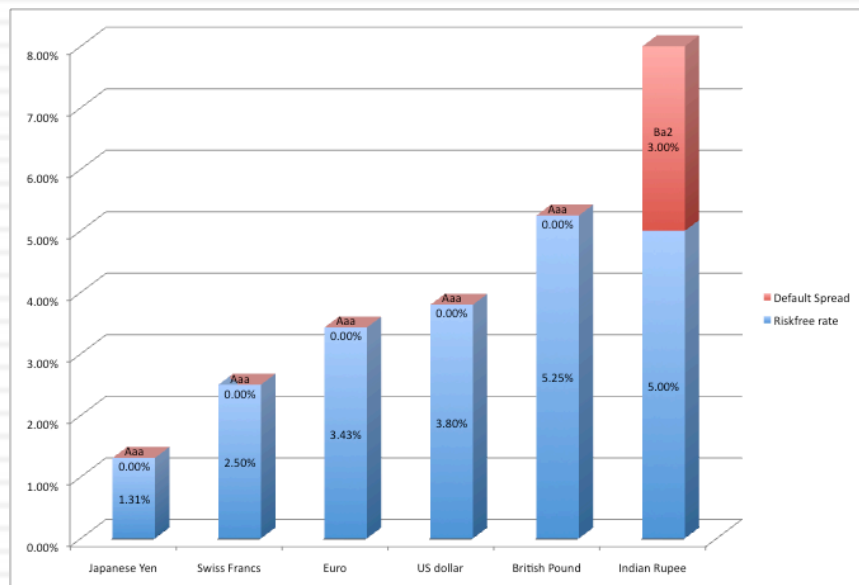


Lesson 5: Know your “hurdle” rate

- Since financial resources are finite, there is a “hurdle rate” that projects have to cross before being deemed acceptable. A simple representation of the hurdle rate is as follows:

$$\text{Hurdle rate} = \text{Riskless Rate} + \text{Risk Premium}$$

In what currency are you estimating your hurdle rate?



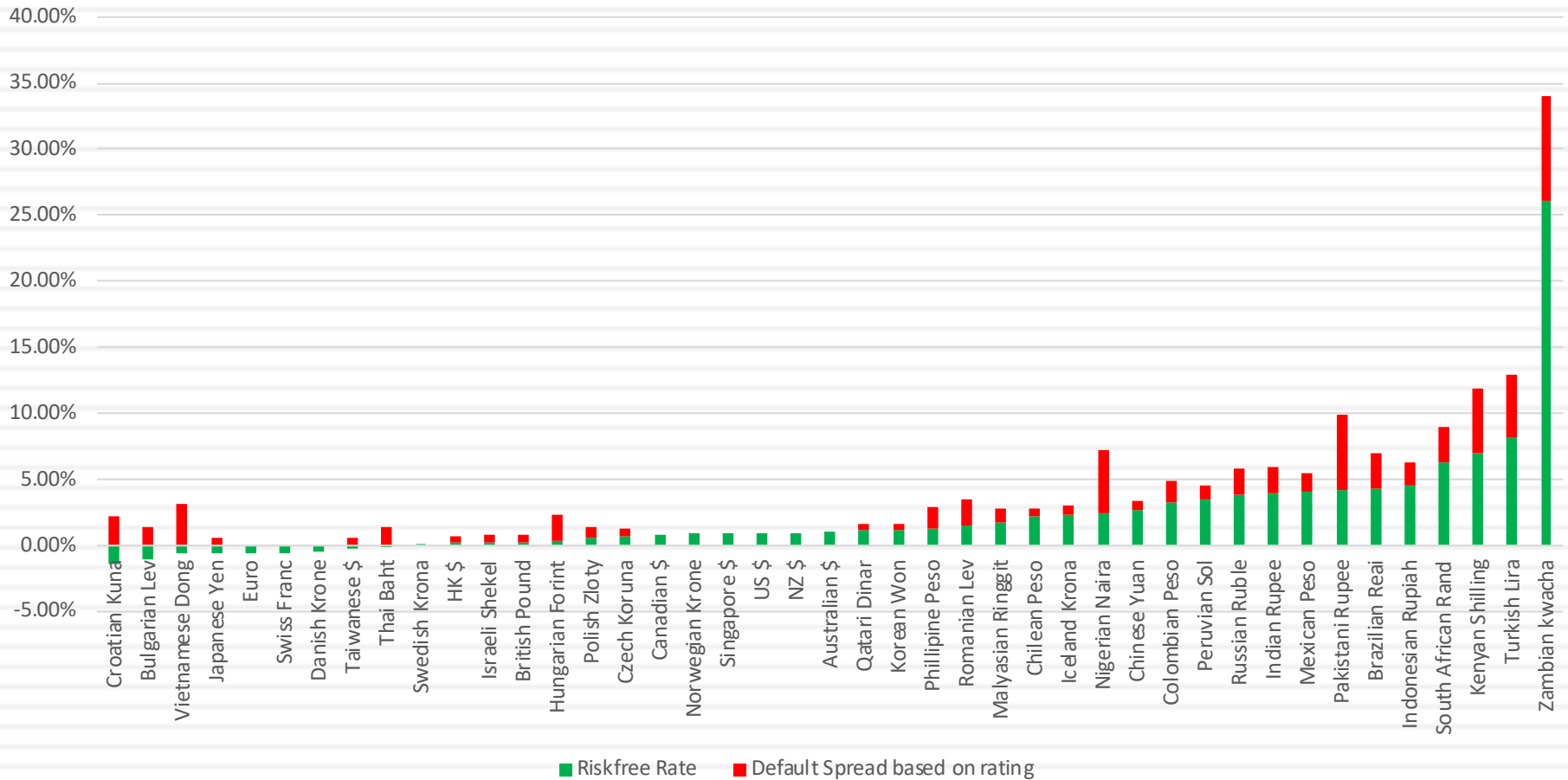
How risky is the business that you are investing in?
Higher risk investments should have higher risk premiums than lower risk investments

How risky are the countries that you are investing in?
You should demand a higher risk premium for operating in riskier countries than safer countries

How are you financing this investment?
The hurdle rate is a function of your mix of debt & equity and how much it costs you to raise debt

Currencies matter, but not for the reasons you think that they do..

Riskfree Rates in January 2021 : Government Bond Rate



ERP : Jan 2021

Andorra	Caal	7.26%	11.98%	Italy	Baa3	2.13%	6.85%
Austria	Aa1	0.38%	5.10%	Jersey	Aaa	0.00%	4.72%
Belgium	Aa3	0.59%	5.31%	Liechtenstein	Aaa	0.00%	4.72%
Cyprus	Ba2	2.91%	7.63%	Luxembourg	Aaa	0.00%	4.72%
Denmark	Aaa	0.00%	4.72%	Malta	A2	0.82%	5.54%
Finland	Aa1	0.38%	5.10%	Netherlands	Aaa	0.00%	4.72%
France	Aa2	0.48%	5.20%	Norway	Aaa	0.00%	4.72%
Germany	Aaa	0.00%	4.72%	Portugal	Baa3	2.13%	6.85%
Greece	Ba3	3.49%	8.21%	Spain	Baa1	1.55%	6.27%
Guernsey	Aaa	0.00%	4.72%	Sweden	Aaa	0.00%	4.72%
Iceland	A2	0.82%	5.54%	Switzerland	Aaa	0.00%	4.72%
Ireland	A2	0.82%	5.54%	Turkey	B2	5.33%	10.05%
Isle of Man	Aa3	0.59%	5.31%	UK	Aa3	0.59%	5.31%
				Western Europe		0.84%	5.56%

Canada	Aaa	0.00%	4.72%
United States	Aaa	0.00%	4.72%
North America		0.00%	4.72%

Caribbean		5.31%	10.03%
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Argentina	Ca	11.62%	16.34%
Belize	Caa3	9.68%	14.40%
Bolivia	B2	5.33%	10.05%
Brazil	Ba2	2.91%	7.63%
Chile	A1	0.68%	5.40%
Colombia	Baa2	1.84%	6.56%
Costa Rica	B2	5.33%	10.05%
Ecuador	Caa3	9.68%	14.40%
El Salvador	B3	6.30%	11.02%
Guatemala	Ba1	2.42%	7.14%
Honduras	B1	4.36%	9.08%
Mexico	Baa1	1.55%	6.27%
Nicaragua	B3	6.30%	11.02%
Panama	Baa1	1.55%	6.27%
Paraguay	Ba1	2.42%	7.14%
Peru	A3	1.16%	5.88%
Suriname	Caa3	9.68%	14.40%
Uruguay	B1	4.36%	9.08%
Venezuela	C	19.18%	23.90%
Latin America		3.99%	8.71%

Country	Rating	CRP	ERP
Angola	Caa1	7.26%	11.98%
Benin	B2	5.33%	10.05%
Botswana	A2	0.82%	5.54%
Burkina Faso	B2	5.33%	10.05%
Cameroon	B2	5.33%	10.05%
Cape Verde	B2	5.33%	10.05%
Congo (DR)	Caa1	7.26%	11.98%
Congo (Rep of)	Caa2	8.72%	13.44%
Côte d'Ivoire	Ba3	3.49%	8.21%
Egypt	B2	5.33%	10.05%
Ethiopia	B2	5.33%	10.05%
Gabon	Caa1	7.26%	11.98%
Ghana	B3	6.30%	11.02%
Kenya	B2	5.33%	10.05%
Mali	Caa1	7.26%	11.98%
Morocco	Ba1	2.42%	7.14%
Mozambique	Caa2	8.72%	13.44%
Namibia	Ba3	3.49%	8.21%
Niger	B3	6.30%	11.02%
Nigeria	B2	5.33%	10.05%
Rwanda	B2	5.33%	10.05%
Senegal	Ba3	3.49%	8.21%
South Africa	Ba2	2.91%	7.63%
Swaziland	B3	6.30%	11.02%
Tanzania	B2	5.33%	10.05%
Togo	B3	6.30%	11.02%
Tunisia	B2	5.33%	10.05%
Uganda	B2	5.33%	10.05%
Zambia	Ca	11.62%	16.34%
Africa		4.94%	9.66%

Albania	B1	4.36%	9.08%
Armenia	Ba3	3.49%	8.21%
Azerbaijan	Ba2	2.91%	7.63%
Belarus	B3	6.30%	11.02%
Bosnia & Herzegovina	B3	6.30%	11.02%
Bulgaria	Baa1	1.55%	6.27%
Croatia	Ba1	2.42%	7.14%
Czech Republic	Aa3	0.59%	5.31%
Estonia	A1	0.68%	5.40%
Georgia	Ba2	2.91%	7.63%
Hungary	Baa3	2.13%	6.85%
Kazakhstan	Baa3	2.13%	6.85%
Kyrgyzstan	B2	5.33%	10.05%
Latvia	A3	1.16%	5.88%
Lithuania	A3	1.16%	5.88%
Macedonia	Ba3	3.49%	8.21%
Moldova	B3	6.30%	11.02%
Montenegro	B1	4.36%	9.08%
Poland	A2	0.82%	5.54%
Romania	Baa3	2.13%	6.85%
Russia	Baa3	2.13%	6.85%
Serbia	Ba3	3.49%	8.21%
Slovakia	A2	0.82%	5.54%
Slovenia	A3	1.16%	5.88%
Tajikistan	B3	6.30%	11.02%
Ukraine	B3	6.30%	11.02%
Uzbekistan	Baa2	1.84%	6.56%
E. Europe & Russia		2.08%	6.80%

Abu Dhabi	Aa2	0.48%	5.20%
Bahrain	B2	5.33%	10.05%
Iraq	Caa1	7.26%	11.98%
Israel	A1	0.68%	5.40%
Jordan	B1	4.36%	9.08%
Kuwait	A1	0.68%	5.40%
Lebanon	C	19.18%	23.90%
Oman	Ba3	3.49%	8.21%
Qatar	Aa3	0.59%	5.31%
Ras Al Khaima	Aaa	0.00%	4.72%
Saudi Arabia	A1	0.68%	5.40%
Sharjah	Baa2	1.84%	6.56%
United Arab Emirates	Aa2	0.48%	5.20%
Middle East		1.53%	6.25%

Country	PRS	CRP	ERP
Algeria	57.25	8.72%	13.44%
Brunei	80	0.82%	5.54%
Gambia	63.75	6.30%	11.02%
Guinea	53.5	11.62%	16.34%
Guinea-Bissau	62	7.26%	11.98%
Guyana	65.75	5.33%	10.05%
Haiti	52.75	11.62%	16.34%
Iran	59.25	8.72%	13.44%
Korea, D.P.R.	50.75	11.62%	16.34%
Liberia	53.5	11.62%	16.34%
Libya	58.25	8.72%	13.44%
Madagascar	63.25	6.30%	11.02%
Malawi	58.75	8.72%	13.44%
Myanmar	63.75	6.30%	11.02%
Sierra Leone	58.75	8.72%	13.44%
Somalia	50.5	11.62%	16.34%
Sudan	38.25	19.18%	23.90%
Syria	47	19.18%	23.90%
Yemen, Republic	50	19.18%	23.90%
Zimbabwe	52.25	11.62%	16.34%

Bangladesh	Ba3	3.49%	8.21%
Cambodia	B2	5.33%	10.05%
China	A1	0.68%	5.40%
Fiji	Ba3	3.49%	8.21%
Hong Kong	Aa3	0.59%	5.31%
India	Baa3	2.13%	6.85%
Indonesia	Baa2	1.84%	6.56%
Japan	A1	0.68%	5.40%
Korea	Aa2	0.48%	5.20%
Laos	Caa2	8.72%	13.44%
Macao	Aa3	0.59%	5.31%
Malaysia	A3	1.16%	5.88%
Maldives	B3	6.30%	11.02%
Mauritius	Baa1	1.55%	6.27%
Mongolia	B3	6.30%	11.02%
Pakistan	B3	6.30%	11.02%
Papua New Guinea	B2	5.33%	10.05%
Philippines	Baa2	1.84%	6.56%
Singapore	Aaa	0.00%	4.72%
Solomon Islands	B3	6.30%	11.02%
Sri Lanka	Caa1	7.26%	11.98%
Taiwan	Aa3	0.59%	5.31%
Thailand	Baa1	1.55%	6.27%
Vietnam	Ba3	3.49%	8.21%

Australia	Aaa	0.00%	4.72%
Cook Islands	B1	4.36%	9.08%
New Zealand	Aaa	0.00%	4.72%
Australia & NZ		0.00%	4.72%

Blue: Moody's Rating
Red: Added Country Risk
Green #: Total ERP

One hurdle rate will generally not work across the company

- If you are a single business company, but you are a multinational, your hurdle rate will vary, depending on where you are investing. If you use the beta of that we estimated for BHP earlier, the cost of equity (even in US\$ terms) will vary depending on where the investment is going to be made:

Region	Revenues	ERP	Riskfree Rate	Beta	Cost of Equity	Cost of Debt (After-tax)	Debt Ratio	Cost of Capital
Australia & New Zealand	\$ 47,286	4.72%	1.30%	0.96	5.83%	1.86%	7.22%	5.55%
Central and South America	\$ 18,179	8.71%	1.30%	0.96	9.66%	1.86%	7.22%	9.10%
North America	\$ 9,682	4.72%	1.30%	0.96	5.83%	1.86%	7.22%	5.54%
Western Europe	\$ 1,156	5.56%	1.30%	0.96	6.64%	1.86%	7.22%	6.29%
Rest of the World	\$ 1,955	6.10%	1.30%	0.96	7.16%	1.86%	7.22%	6.77%
Total	\$ 78,258	5.70%	1.30%	0.96	6.77%	1.86%	7.22%	6.42%

A Test: The Jensen Project

- In 2021, BHP announced that it would invest \$12 billion in the Jansen project, a potash mine, in the Saskatchewan, and it plans to assess the investment in US dollars. Since you have enough cash in hand to make the investment, you plan to use no new debt in funding the project. In making your assessment of the hurdle rate, what would you use as:

Risk free Rate	Unlevered Beta	ERP	D/E ratio
a. US \$ Riskfree rate	a. BHP's beta (0.86)	a. BHP ERP (5.70%)	a. Zero (no debt)
b. Canadian \$ Riskfree rate	b. BHP Metals & Mining (0.88)	b. Canada's ERP (4.72%)	b. BHP D/E ratio (7.90%)
c. Australian \$ Riskfree rate	c. Fertilizer beta (0.75)	c. Global ERP (5.76%)	c. Other

Lesson 6: Your investments need to earn returns that beat the hurdle rate...

- Your hurdle rate is both a cost of financing your business and an opportunity cost, i.e., a return you can make elsewhere if you invest in a project of equivalent risk. If that is the case, you should only take investments that generate returns that earn more than the hurdle rate.
- To measure returns, though, here are three simple propositions to follow:
 1. Look at the cash flows that you will make on the investment, rather than earnings. You cannot spend earnings.
 2. Look at incremental cash flows that come out because of the investment. Be wary of allocated costs (that will be there whether you take the investment or not) and ignore sunk costs (costs that you have already incurred).
 3. Time weight the cash flows, with cash flows occurring earlier being valued more than cash flows later.

The Jansen Project: Cash Flow Returns

- The Jansen Project will require \$12 billion in investment over time.
 - If your analysis is entirely in US \$ terms, the cost of capital for the project is about 5%.
 - For this project to pass the investment principle test, the returns on this project will have to be greater than 5%.
 - Those returns, should be based upon expected future cash flows.
- Assuming that the project starts generating cash flows overnight, that the cash flows are expected to be level over time and that the project lasts forever:
 - How much would you need as after-tax, annual cash flow for this project to pass muster?
 - How would your answer change if you had to wait five years, before the project becomes operational?

Here is a short cut that you can use to assess the quality of your existing investments...

Adjust EBIT for

- Extraordinary or one-time expenses or income
- Operating leases and R&D
- Cyclicality in earnings (Normalize)
- Acquisition Debris (Goodwill amortization etc.)

Use a marginal tax rate to be safe. A high ROC created by paying low effective taxes is not sustainable

$$\text{ROC} = \frac{\text{EBIT (1- tax rate)}}{\text{Book Value of Equity + Book value of debt - Cash}}$$

Adjust book equity for

- Capitalized R&D
- Acquisition Debris (Goodwill)

Adjust book value of debt for

- Capitalized operating leases

Use end of prior year numbers or average over the year but be consistent in your application

ROIC: Truth in Advertising

- It is from the past: The return on invested capital is based upon operating income and invested capital from a time period (last year, average of the last five years etc.)
- And an accounting number: You can dress up ROIC as much as you want, but it is still, at its core, an accounting number. It is the only place in finance that we use book values.
- Subject to accounting actions and game playing: Any actions taken by accountants, legitimate or game playing, and any accounting inconsistencies (leases, R&D etc), will show up in ROIC.

Bottom line: The ROIC is a metric, perhaps even a useful one for mature companies, but not a very good one for young companies or companies in transition.

BHP's best businesses, its worst ones and where it stands as a company..

Allocated based upon net operating assets in annual report



<i>Business</i>	<i>Revenues</i>	<i>Operating Income</i>	<i>Invested Capital</i>	<i>Operating Margin</i>	<i>ROIC</i>	<i>Cost of Capital</i>
Coal & Related Energy	\$6,242.00	\$811.00	\$9,907.02	12.99%	4.91%	6.36%
Iron Ore	\$20,797.00	\$12,924.00	\$19,170.17	62.14%	40.45%	5.98%
Copper	\$10,666.00	\$2,590.00	\$25,428.61	24.28%	6.11%	5.98%
Oil/Gas	\$4,070.00	\$811.00	\$8,592.20	19.93%	5.66%	6.56%
BHP	\$60,817.00	\$29,162.00	\$63,098.00	47.95%	27.73%	6.14%

The Commodity Price Effect..



For information on realised prices, refer to section 1.11.

Year ended 30 June	2020 Closing	2019 Closing	2018 Closing	2020 Average	2019 Average	2018 Average	2020 vs 2019 Average ⁽⁹⁾
Natural gas Asian spot LNG ⁽¹⁾ (US\$/MMBtu)	2.2	4.8	10.3	4.1	8.1	8.5	-50%
Crude oil (Brent) ⁽²⁾ (US\$/bbl)	41.8	66.1	77.9	51.5	69.0	63.6	-25%
Ethane ⁽³⁾ (US\$/bbl)	8.0	7.1	14.7	7.2	13.4	11.0	-46%
Propane ⁽⁴⁾ (US\$/bbl)	19.0	18.9	39.3	18.0	31.5	36.2	-43%
Butane ⁽⁵⁾ (US\$/bbl)	19.1	20.6	45.9	22.8	37.4	41.0	-39%
Copper (LME cash) (US\$/lb)	2.7	2.7	3.0	2.6	2.8	3.1	-8%
Iron ore ⁽⁶⁾ (US\$/dmt)	101.1	118.0	64.5	93.2	80.1	69.0	16%
Metallurgical coal ⁽⁷⁾ (US\$/t)	116.0	193.5	199.0	143.9	204.7	203.0	-30%
Energy coal ⁽⁸⁾ (US\$/t)	51.2	68.8	117.3	64.5	99.4	100.2	-35%
Nickel (LME cash) (US\$/lb)	5.8	5.7	6.8	6.4	5.6	5.6	13%

(1) Platts Liquefied Natural Gas Delivery Ex-Ship (DES) Japan/Korea Marker – typically applies to Asian LNG spot sales.

(2) Platts Dated Brent – a benchmark price assessment of the spot market value of physical cargoes of North Sea light sweet crude oil.

(3) OPIS Mont Belvieu non-Tet Ethane – typically applies to ethane sales in the US Gulf Coast market.

(4) OPIS Mont Belvieu non-Tet Propane – typically applies to propane sales in the US Gulf Coast market.

(5) OPIS Mont Belvieu non-Tet Normal Butane – typically applies to butane sales in the US Gulf Coast market.

(6) Platts 62 per cent Fe Cost and Freight (CFR) China – used for fines.

(7) Platts Low-Vol hard coking coal Index FOB Australia – representative of high-quality hard coking coals.

(8) GlobalCoal FOB Newcastle 6,000kcal/kg NCV – typically applies to coal sales in the Asia Pacific market.

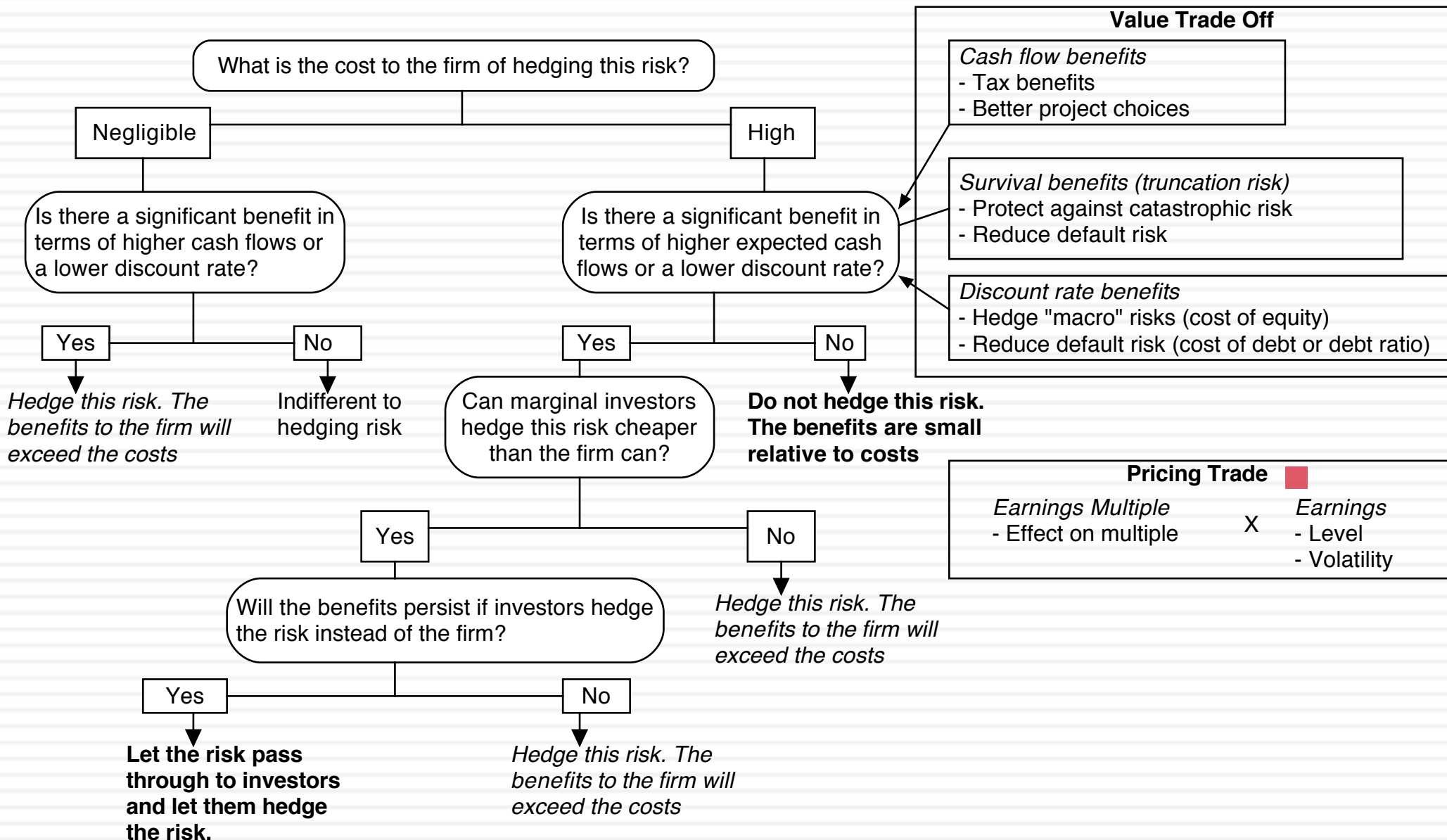
(9) Due to rounding, immaterial differences in numbers may exist.

Impact of changes to commodity prices

The prices we obtain for our products are a key driver of value for BHP. Fluctuations in these commodity prices affect our results, including cash flows and asset values. The estimated impact of changes in commodity prices in FY2020 on our key financial measures is set out below.

	Impact on profit after taxation from Continuing operations (US\$M)	Impact on Underlying EBITDA (US\$M)
US\$1/bbl on oil price	24	37
US¢1/lb on copper price	24	35
US\$1/t on iron ore price	163	233
US\$1/t on metallurgical coal price	24	35
US\$1/t on energy coal price	10	14
US¢1/lb on nickel price	1	1

Should you hedge?



Lesson 7: Acquisitions are just big investments and have to meet the same standards..

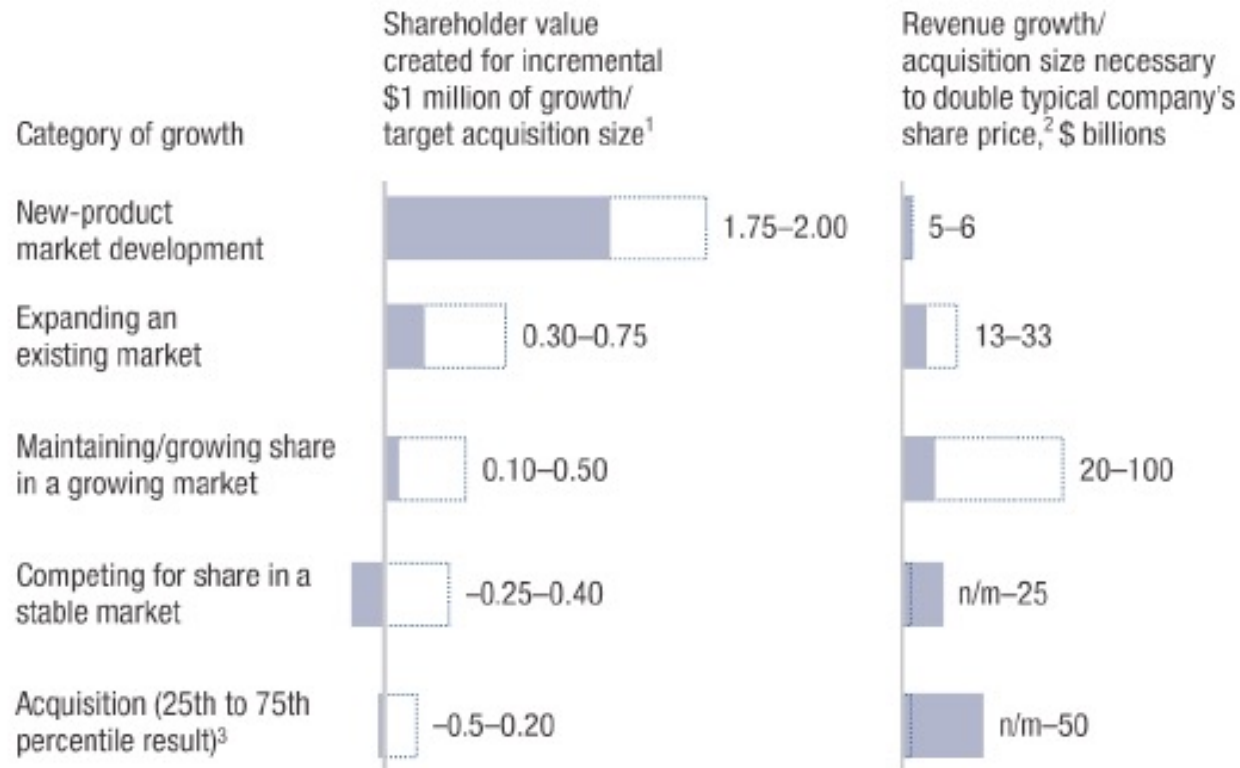
- An acquisition is just a large-scale project. All of the rules that apply to individual investments apply to acquisitions, as well. For an acquisition to create value, it has to
 - Generate a higher return on capital, after allowing for synergy and control factors, than the cost of capital.
 - Put another way, an acquisition will create value only if the present value of the cash flows on the acquired firm, inclusive of synergy and control benefits, exceeds the cost of the acquisitions
- A divestiture is the reverse of an acquisition, with a cash inflow now (from divesting the assets) followed by cash outflows (i.e., cash flows foregone on the divested asset) in the future. If the present value of the future cash outflows is less than the cash inflow today, the divestiture will increase value.
- A fair-price acquisition or divestiture is value neutral.

Acquisition Sins

- Risk Transference
 - ▣ The Sin: Using the acquiring company's risk characteristics (hurdle rate) to value a target company's cash flows.
 - ▣ The Fix: Use the target company's risk to determine its hurdle rate.
- Debt Subsidies
 - ▣ The Sin: Using acquired company's debt capacity and/or low cost of debt to lower discount rate for target valuation
 - ▣ The Fix: Use target company's cost of debt/ debt capacity.
- Magical Synergy
 - ▣ The Sin: Synergy is a plug variable, unplanned and unaccounted for
 - ▣ The Fix: Plan for synergy, buy it for less and hold someone accountable
- Auto-pilot Control
 - ▣ The Sin: Control is worth an extra 20%
 - ▣ The Fix: Value the company, with the status quo and with you in control, & pay less
- Decision first, analysis to follow
 - ▣ The Sin: Top management, egged on by bankers & consultants, decides to do deal before analysis.
 - ▣ The Fix: Don't let bankers/consultants decide on whether deal makes sense.

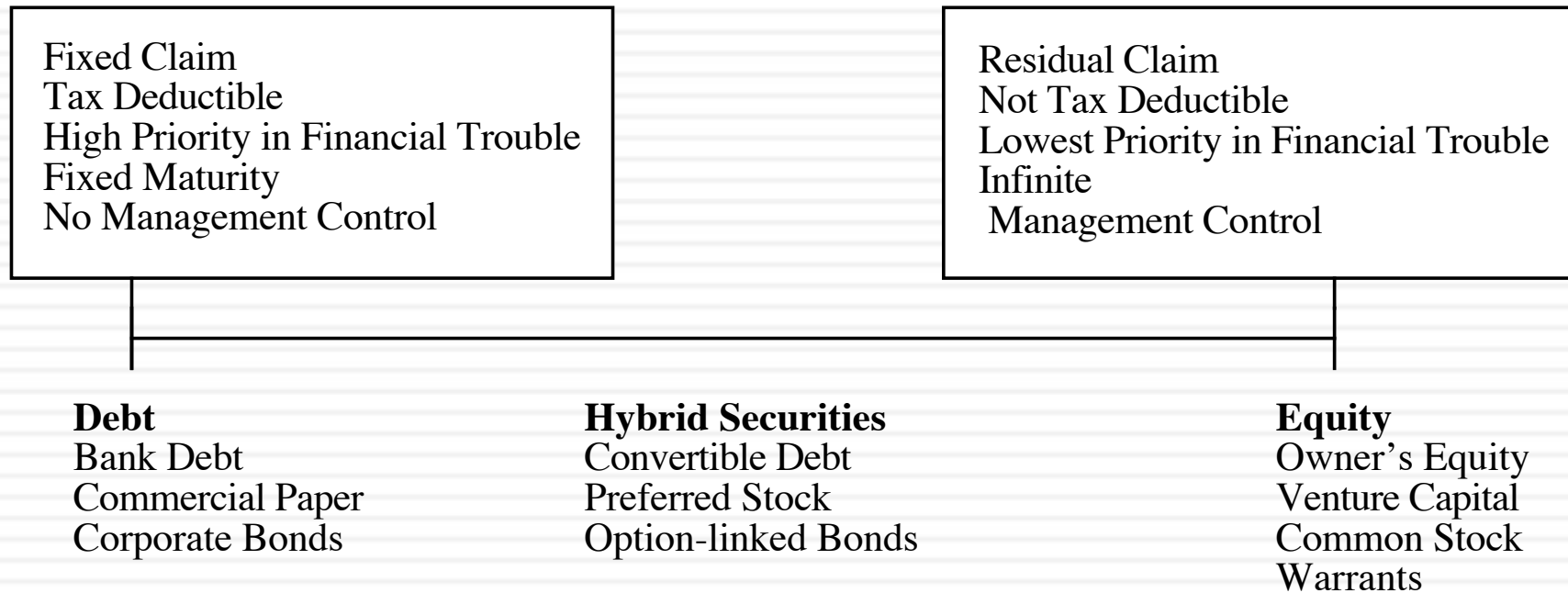
And of all the ways to create growth, acquisitions rank worst...

Modes of organic growth vary in value creation intensity—consumer goods industry



Lesson 8: You have only two ways of raising funding for a business...

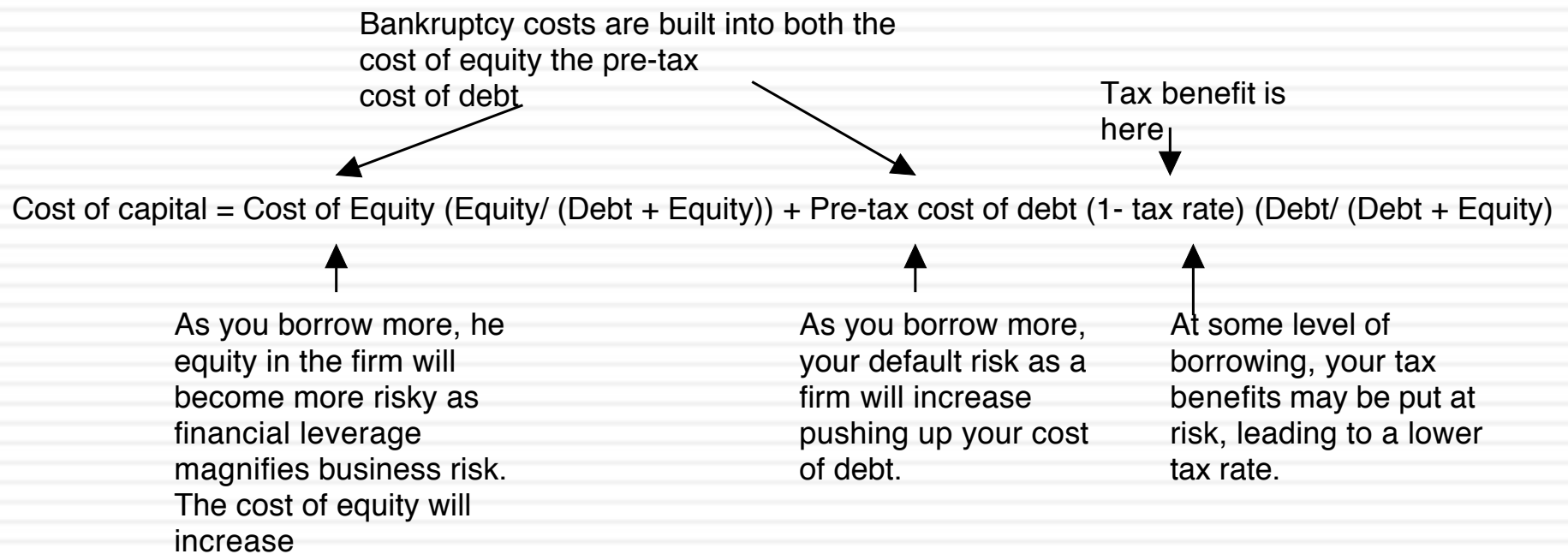
Figure 7.1: Debt versus Equity



And here is the trade off....

<i>Advantages of Debt</i>	<i>Disadvantages of debt</i>
<p>1. Tax Benefit: Interest expenses on debt are tax deductible but cash flows to equity are generally not. <i>Implication: The higher the marginal tax rate, the greater the benefits of debt.</i></p>	<p>1. Expected Bankruptcy Cost: The expected cost of going bankrupt is a product of the probability of going bankrupt and the cost of going bankrupt. The latter includes both direct and indirect costs. The probability of going bankrupt will be higher in businesses with more volatile earnings and the cost of bankruptcy will also vary across businesses. <i>Implication:</i> 1. Firms with more stable earnings should borrow more, for any given level of earnings. 2. Firms with lower bankruptcy costs should borrow more, for any given level of earnings.</p>
<p>2. Added Discipline: Borrowing money may force managers to think about the consequences of the investment decisions a little more carefully and reduce bad investments. <i>Implication: As the separation between managers and stockholders increases, the benefits to using debt will go up.</i></p>	<p>2. Agency Costs: Actions that benefit equity investors may hurt lenders. The greater the potential for this conflict of interest, the greater the cost borne by the borrower (as higher interest rates or more covenants). <i>Implication: Firms where lenders can monitor/ control how their money is being used should be able to borrow more than firms where this is difficult to do.</i></p>
	<p>3. Loss of flexibility: Using up available debt capacity today will mean that you cannot draw on it in the future. This loss of flexibility can be disastrous if funds are needed and access to capital is shut off. <i>Implication:</i> 1. Firms that can forecast future funding needs better should be able to borrow more. 2. Firms with better access to capital markets should be more willing to borrow more today.</p>

Lesson 9: There is a “right” mix of debt and equity for your business...



Be wary of companies that are too aggressive... and too conservative... in their use of debt...

- If you use too little debt (you are too conservative), you are missing the tax benefits from using debt that would have lowered your cost of capital and increased your value as a business.
 - ▣ *Prime candidates: Mature companies that have large, stable cash flows, face high tax rates and use little or no debt to capitalize themselves.*
 - ▣ *Fixes: At the minimum, borrow more when funding new projects and pay more dividends. More radically, borrow money and recapitalize.*
- If you use too much debt, your tax benefits may be overwhelmed by the cost of distress and default. Consequently, you have a higher cost of capital and lower value as a business, because you have chosen to borrow too much.
 - ▣ *Prime candidates: Companies in risky businesses that have other fixed commitments to meet and low or volatile income, while borrowing large amounts.*
 - ▣ *Fixes: At the minimum, cut back or stop paying dividends and utilize retained earnings to fund investments. More radically, raise new equity and retire debt.*

BHP: Current versus Optimal

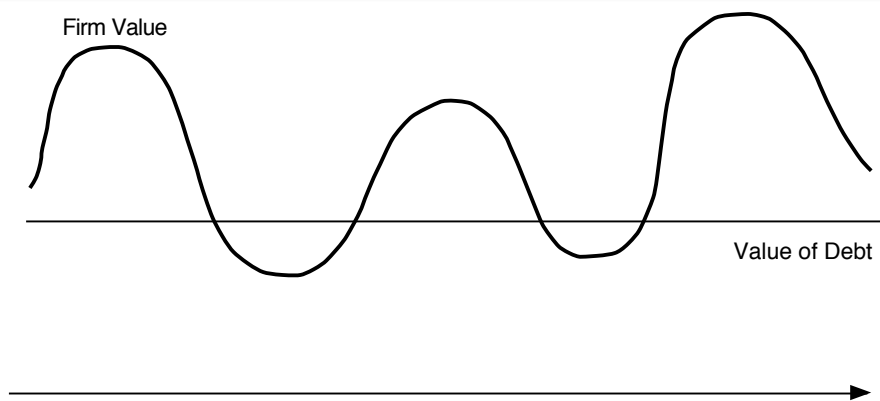
Debt Ratio	Beta	Cost of Equity	Bond Rating	Interest rate on debt	Tax Rate	Cost of Debt (after-tax)	WACC	Enterprise Value
0%	0.9600	6.77%	Aaa/AAA	1.99%	25.00%	1.49%	6.77%	\$265,985
10%	1.0400	7.23%	Aaa/AAA	1.99%	25.00%	1.49%	6.65%	\$271,824
20%	1.1400	7.80%	Aaa/AAA	1.99%	25.00%	1.49%	6.54%	\$277,926
30%	1.2686	8.53%	Aaa/AAA	1.99%	25.00%	1.49%	6.42%	\$284,308
40%	1.4400	9.51%	A1/A+	2.37%	25.00%	1.78%	6.42%	\$284,505
50%	1.6800	10.88%	Caa/CCC	10.76%	25.00%	8.07%	9.47%	\$178,083
60%	2.0634	13.06%	Caa/CCC	10.76%	23.37%	8.24%	10.17%	\$164,061
70%	2.8644	17.63%	C2/C	14.39%	14.98%	12.23%	13.85%	\$115,954
80%	4.2966	25.79%	C2/C	14.39%	13.11%	12.50%	15.16%	\$105,004
90%	8.5933	50.28%	C2/C	14.39%	11.65%	12.71%	16.47%	\$95,943

Used average EBITDA over the last five years to compute optimal debt ratio.

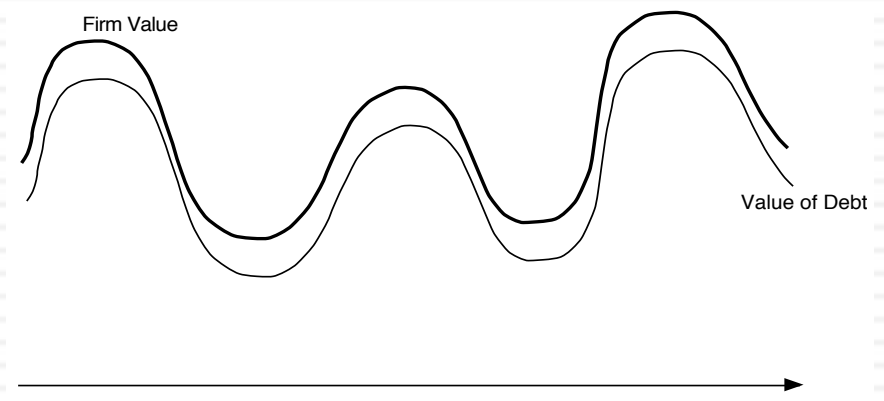
Lesson 10: The “right” debt for your firm depends on your firm

- The objective in designing debt is to make the cash flows on debt match up as closely as possible with the cash flows that the firm makes on its assets.
- By doing so, we reduce our risk of default, increase debt capacity and increase firm value.

Unmatched Debt

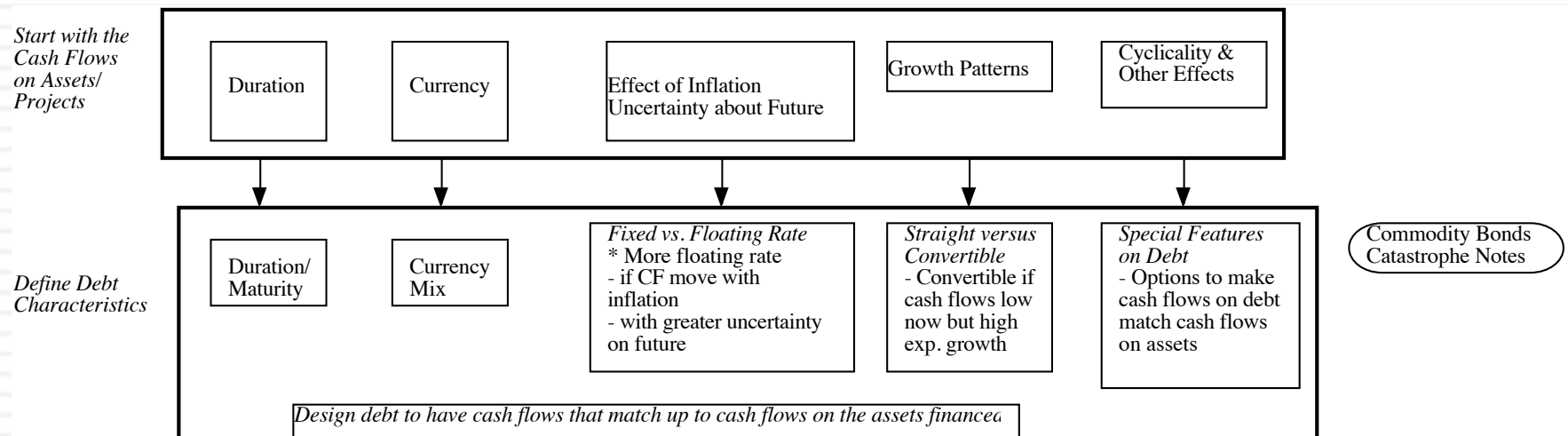


Matched Debt



The perfect debt for you is....

- The perfect financing instrument will
 - Have all of the tax advantages of debt
 - While preserving the flexibility offered by equity



BHP's perfect debt

- Typical investment: BHP's typical investment is a mine or in oil production, generally long term and with a long gestation period, with revenues in US dollars. Its cash flows are tied to commodity prices going up and down.
- Recommendation: The debt should be long term, US dollar debt, with coupon rates tied to commodity prices (if feasible).
- Actual: The existing debt at BHP is below:

US\$M	2020		2019 Restated	
	Current	Non-current	Current	Non-current
Interest bearing liabilities				
Bank loans	737	1,755	508	1,990
Notes and debentures	3,354	17,691	1,002	20,527
Lease liabilities ⁽¹⁾	853	2,590	65	650
Bank overdraft and short-term borrowings	-	-	20	-
Other	68	-	66	-
Total interest bearing liabilities	5,012	22,036	1,661	23,167

Lesson 11: Cash is not accumulated by accident, & cash does not belong to the company

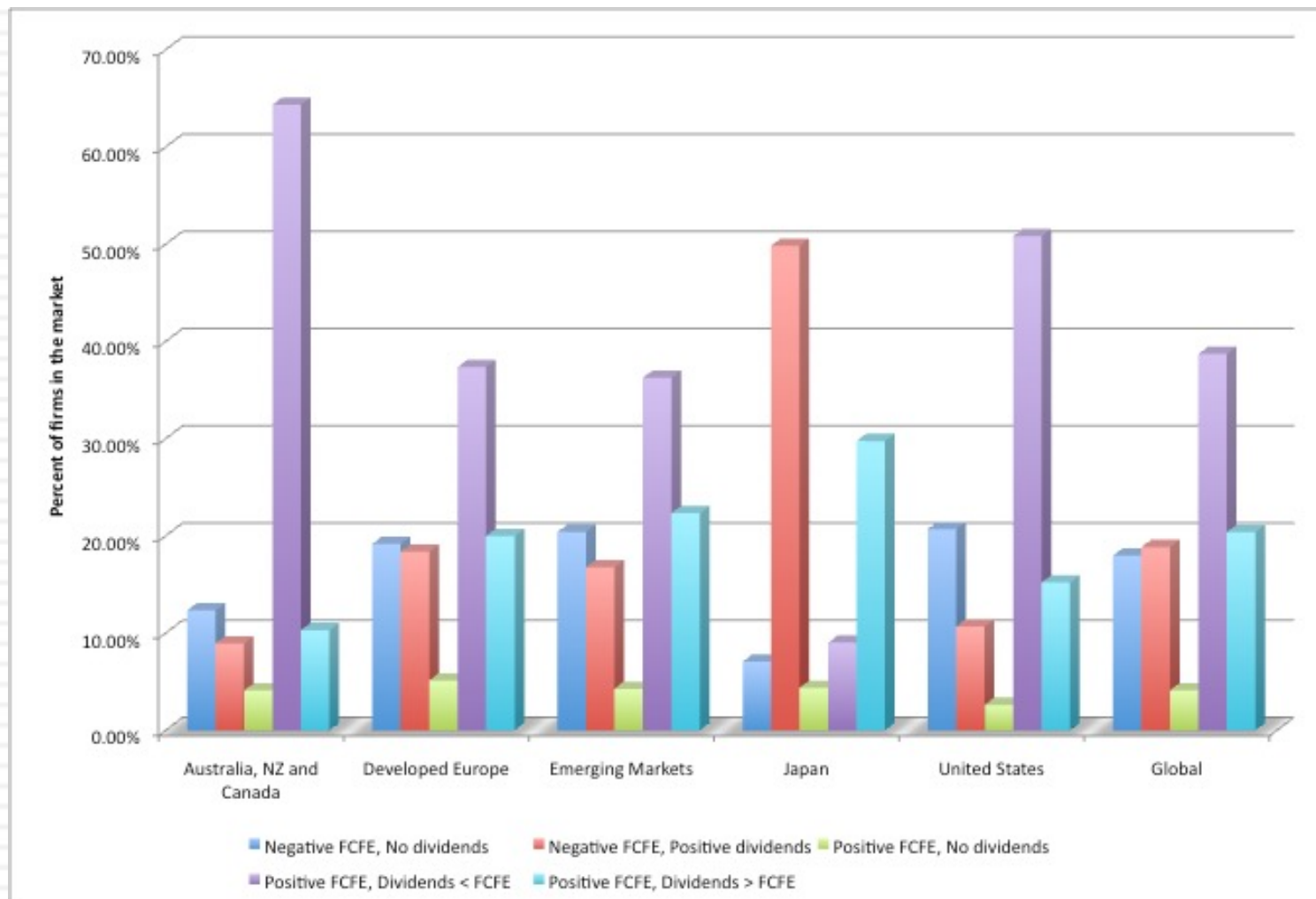
- The Free Cashflow to Equity (FCFE) is a measure of how much cash is left in the business after non-equity claimholders (debt and preferred stock) have been paid, and after any reinvestment needed to sustain the firm's assets and future growth.

Standard Definition	Modified Version	Simplified (if debt ratio = constant)
Net Income	Net Income	Net Income
+ Depreciation	Reinvestment - (Cap Ex - Depreciation + Change in Working Capital)	Reinvestment from Equity - (Cap Ex - Depreciation + Change in Working Capital) (1 - Debt Ratio)
- Cap Ex		
- Change in WC		
FCFE before debt cash flow	FCFE before debt cash flow	
+ New Debt Issued	Net CF from Debt	
- Debt Repaid	+ (New Debt Issued - Debt Repaid)	
FCFE	FCFE	FCFE

BHP – Dividends/Buybacks versus FCFE

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Aggregate
Net Income	\$15,473.00	\$11,223.00	\$13,832.00	\$1,910.00	-\$6,385.00	\$5,890.00	\$3,705.00	\$8,306.00	\$7,956.00	\$11,304.00	\$73,214.00
+ Depreciation & Amortization	\$6,431.00	\$6,067.00	\$7,716.00	\$9,158.00	\$6,210.00	\$5,972.00	\$6,288.00	\$5,687.00	\$5,994.00	\$6,824.00	\$66,347.00
- Capital Expenditures	\$33,686.00	\$22,425.00	\$16,210.00	\$12,763.00	\$6,459.00	\$4,663.00	\$5,853.00	\$7,123.00	\$7,640.00	\$7,600.00	\$124,422.00
- Change in non-cash Working Capital	-\$1,584.00	-\$389.00	\$269.00	-\$592.00	-\$636.00	-\$92.00	\$125.00	-\$493.00	\$1,179.00	\$1,969.00	-\$244.00
FCFE (before debt)	-\$10,198.00	-\$4,746.00	\$5,069.00	-\$1,103.00	-\$5,998.00	\$7,291.00	\$4,015.00	\$7,363.00	\$5,131.00	\$8,559.00	\$15,383.00
+ Debt issuances	\$12,817.00	\$9,143.00	\$6,000.00	\$3,440.00	\$7,239.00	\$1,577.00	\$528.00	\$250.00	\$514.00	\$568.00	\$42,076.00
- Debt repaid	\$3,993.00	\$1,902.00	\$7,048.00	\$4,135.00	\$2,781.00	\$7,114.00	\$4,188.00	\$2,604.00	\$2,047.00	\$8,395.00	\$44,207.00
FCFE (after debt)	-\$1,374.00	\$2,495.00	\$4,021.00	-\$1,798.00	-\$1,540.00	\$1,754.00	\$355.00	\$5,009.00	\$3,598.00	\$732.00	\$13,252.00
Dividends	\$5,877.00	\$6,167.00	\$6,387.00	\$6,498.00	\$4,130.00	\$2,921.00	\$5,220.00	\$6,237.00	\$6,876.00	\$7,901.00	\$58,214.00
Buybacks	\$507.00	\$445.00	\$368.00	\$355.00	\$106.00	\$108.00	\$171.00	\$5,408.00	\$143.00	\$234.00	\$7,845.00
Cash Returned	\$6,384.00	\$6,612.00	\$6,755.00	\$6,853.00	\$4,236.00	\$3,029.00	\$5,391.00	\$11,645.00	\$7,019.00	\$8,135.00	\$66,059.00

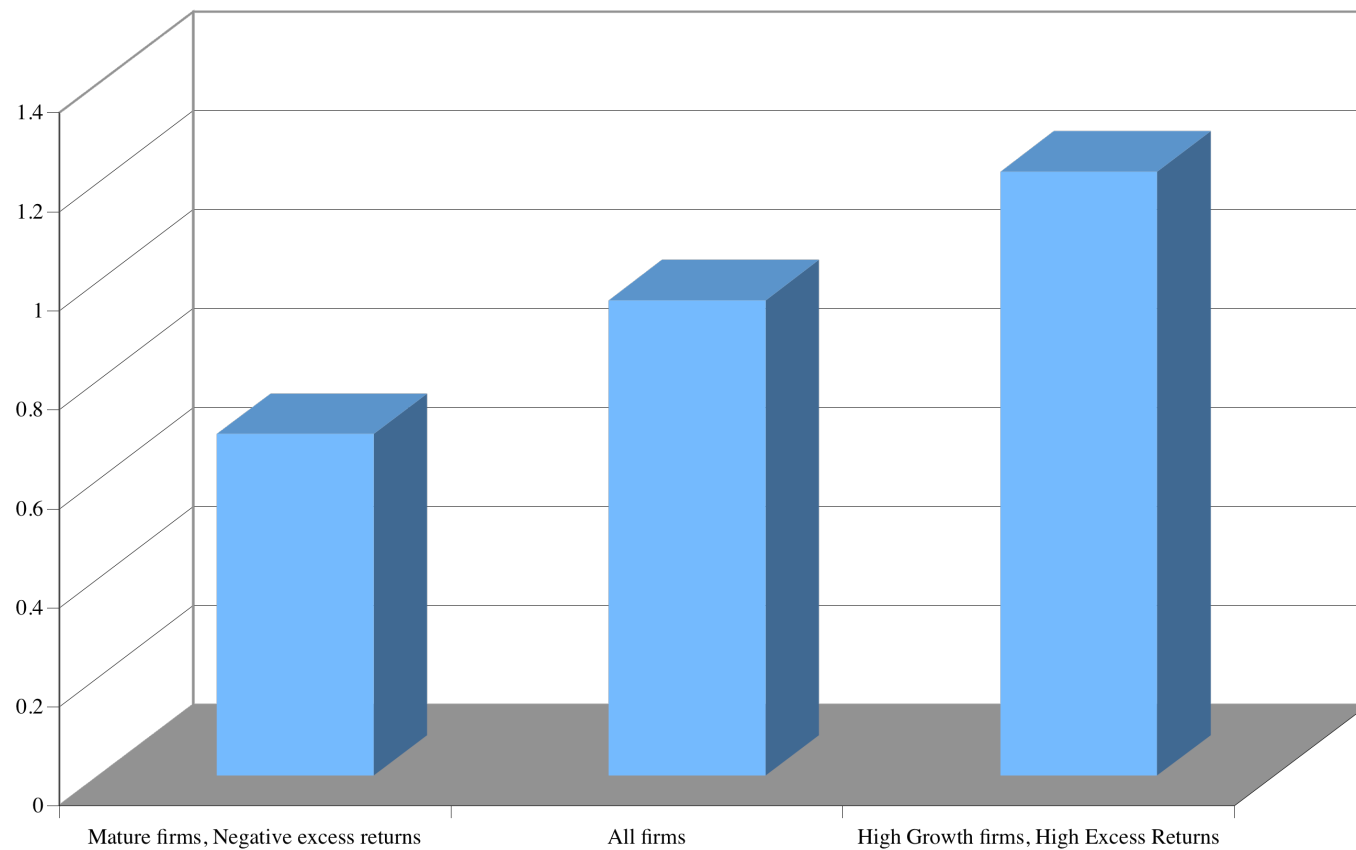
And companies don't pay out what they can afford to....



FCFE = Potential Dividends = Cash left over after all operating expenses, taxes, reinvestment and debt payments have been made.

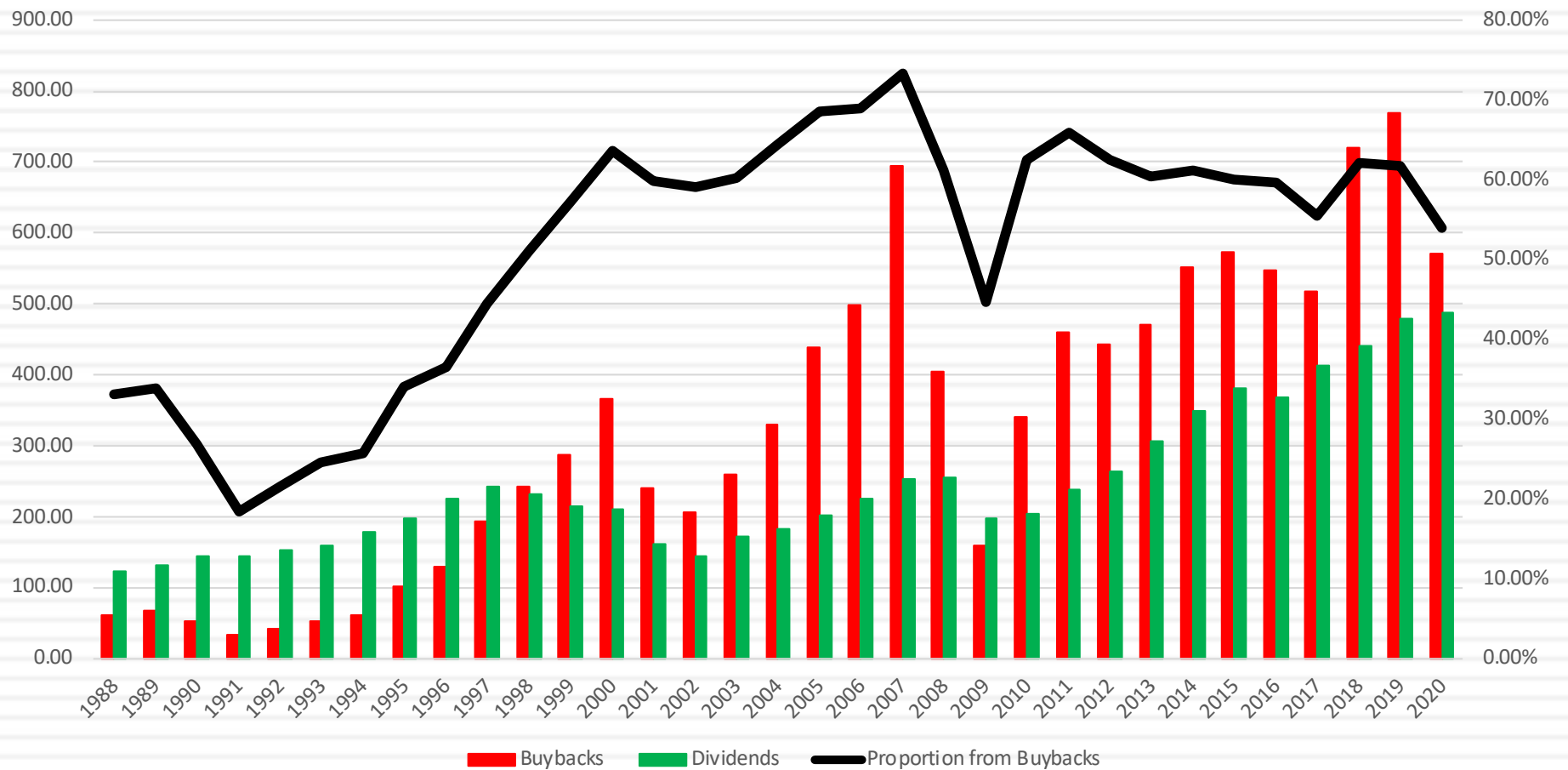
Not all cash balances are created equal...

*Market Value of \$ 1 in cash:
Estimates obtained by regressing Enterprise Value against Cash Balances*



And buybacks are flexible dividends...

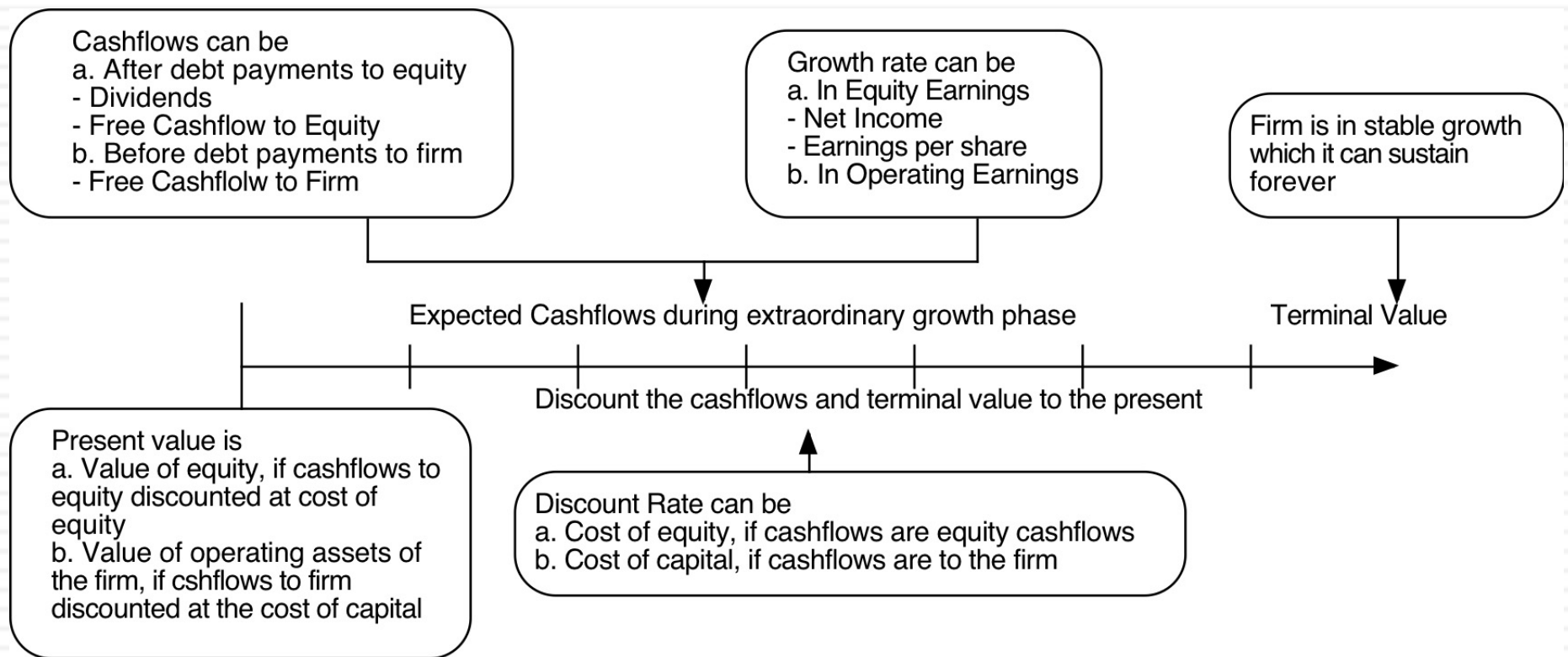
Dividends and Buybacks on S&P 500: 1988- 2020



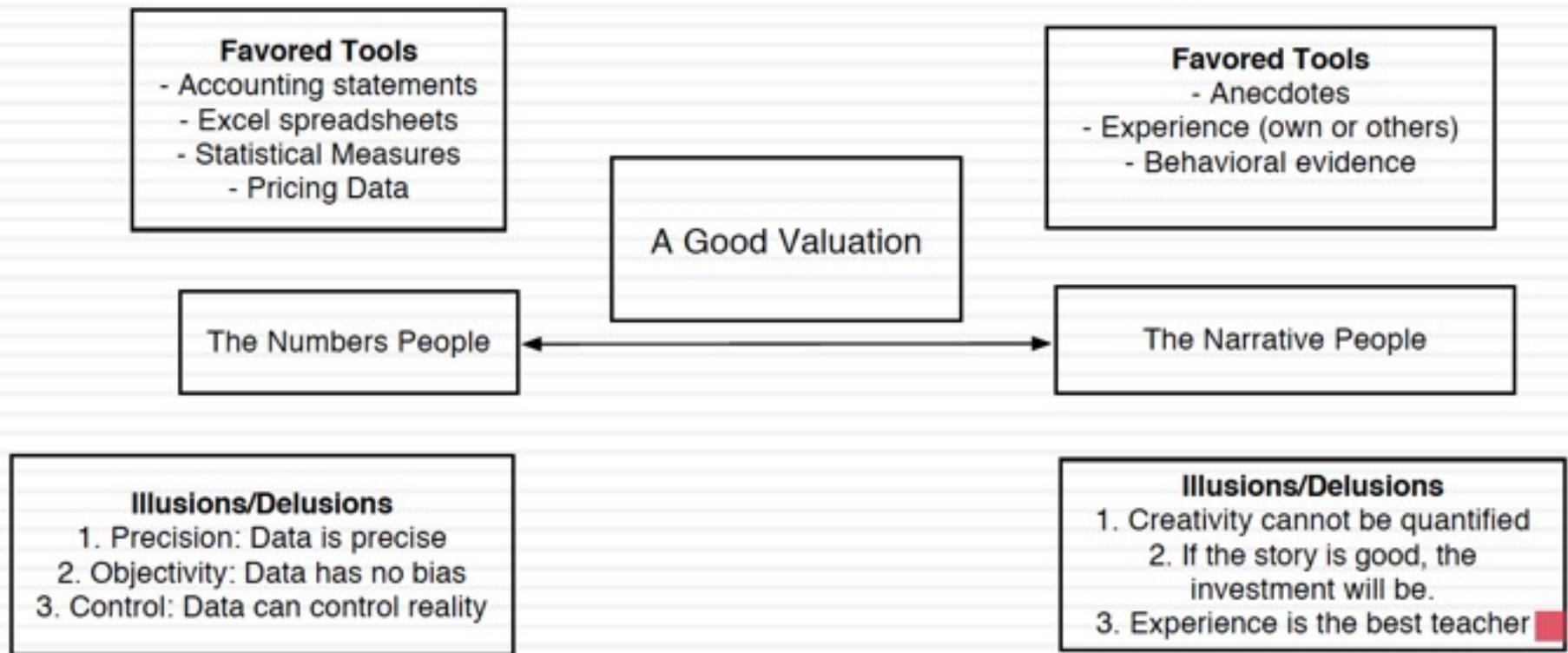
Mythology on buybacks..

- Buybacks increase stock prices: The notion that buybacks are automatically good for stock prices is built on the fact that they reduce share count. That is not just lazy, but it is wrong, since the equity drops by the cash returned.
 - The net effect on value is determined almost entirely by whether the buybacks moves the company towards or away from its optimal financial mix.
 - The net effect on price is more messy, since buybacks can affect mood and momentum.
- Buybacks are bad for investment: A company that is using cash to fund buybacks is clearly not investing, but the cash used for the buybacks goes to investors who invest in other companies. In short, buybacks move cash from companies that do the buybacks to companies raising capital in markets.
- Buybacks are funded primarily with debt: It is true that some companies doing buybacks fund them with debt, but the bulk of buybacks in the last decade have come from companies that have not seen dramatic increases in debt.

Lesson 12: The value of your business is a function of these variables...



And behind those numbers, there is a story..



The Story

BHP is a mature company in a business that will struggle to stay at current levels, let alone grow over time. Growth, if it occurs, will come primarily from commodity prices going up, rather than consumption. BHP started 2021 with sky high margins, as iron ore prices bounced back from COVID lows, but will decrease over time to the ten-year average,

The Assumptions

	Base year	Next year	Years 2-5	Years 6-10	After year 10	Link to story
Revenues (a)	\$ 60,817.00	2.0%	2.00%	1.30%	1.30%	Low growth business
Operating margin (b)	50.62%	45.0%	45.00%	35.25%	35.25%	Margins move to ten-year average
Tax rate	39.00%		39.00%	25.00%	25.00%	Converge on global tax rate
Reinvestment (c)		1.10	1.10	1.10	21.59%	Industry average reinvestment, for capital intensive business.
Return on capital	14.85%	Marginal ROIC =	-48.38%		6.02%	Competitive advantages fade over time.
Cost of capital (d)			6.14%	6.02%	6.02%	Cost of capital relatively stable.

The Cash Flows

	Revenues	Operating Margin	EBIT	EBIT (1-t)	Reinvestment	FCFF
1	\$ 62,033.34	\$ 0.45	\$ 27,915.00	\$ 17,028.15	\$ 1,104.56	\$ 15,923.60
2	\$ 63,274.01	\$ 0.43	\$ 27,239.46	\$ 16,616.07	\$ 1,126.65	\$ 15,489.42
3	\$ 64,539.49	\$ 0.42	\$ 27,154.99	\$ 16,564.54	\$ 1,149.18	\$ 15,415.36
4	\$ 65,830.28	\$ 0.41	\$ 27,056.24	\$ 16,504.31	\$ 1,172.16	\$ 15,332.15
5	\$ 67,146.88	\$ 0.40	\$ 26,942.69	\$ 16,435.04	\$ 1,195.61	\$ 15,239.43
6	\$ 68,395.81	\$ 0.41	\$ 28,314.24	\$ 18,064.49	\$ 1,134.15	\$ 16,930.34
7	\$ 69,572.22	\$ 0.40	\$ 27,731.99	\$ 18,469.50	\$ 1,068.29	\$ 17,401.21
8	\$ 70,671.46	\$ 0.38	\$ 27,084.00	\$ 18,796.30	\$ 998.22	\$ 17,798.08
9	\$ 71,689.13	\$ 0.37	\$ 26,372.21	\$ 19,040.74	\$ 924.14	\$ 18,116.60
10	\$ 72,621.09	\$ 0.35	\$ 25,598.93	\$ 19,199.20	\$ 846.31	\$ 18,352.89
Terminal year	\$ 73,565.17	\$ 0.35	\$ 25,931.72	\$ 19,448.79	\$ 4,199.90	\$ 15,248.89

The Value

Terminal value	\$ 323,069.61		
PV(Terminal value)	\$ 178,680.26		
PV (CF over next 10 years)	\$ 120,205.65		
Value of operating assets =	\$ 298,885.91		
Adjustment for distress	\$ -	Probability of failure =	0.00%
- Debt & Minority Interests	\$ 26,470.00		
+ Cash & Other Non-operating assets	\$ 18,828.00		
Value of equity	\$ 291,243.91		
- Value of equity options	\$ -		
Number of shares	5,057.70		
Value per share	\$ 57.58	Stock was trading at =	\$ 55.65

And here is how you can change your value

