



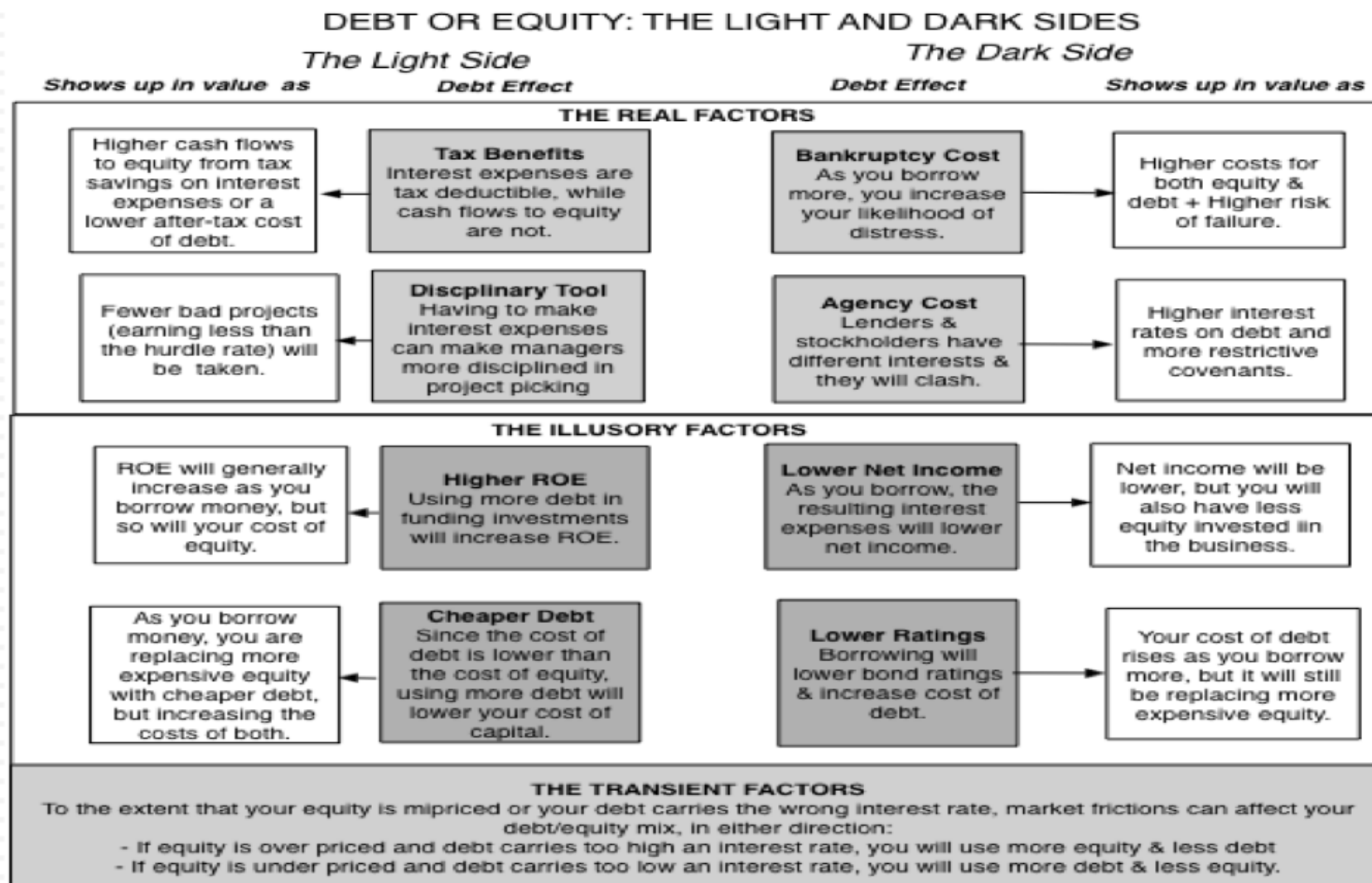
DEBT AND TAXES: JANUARY 2018 DATA UPDATE 8

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The Set Up

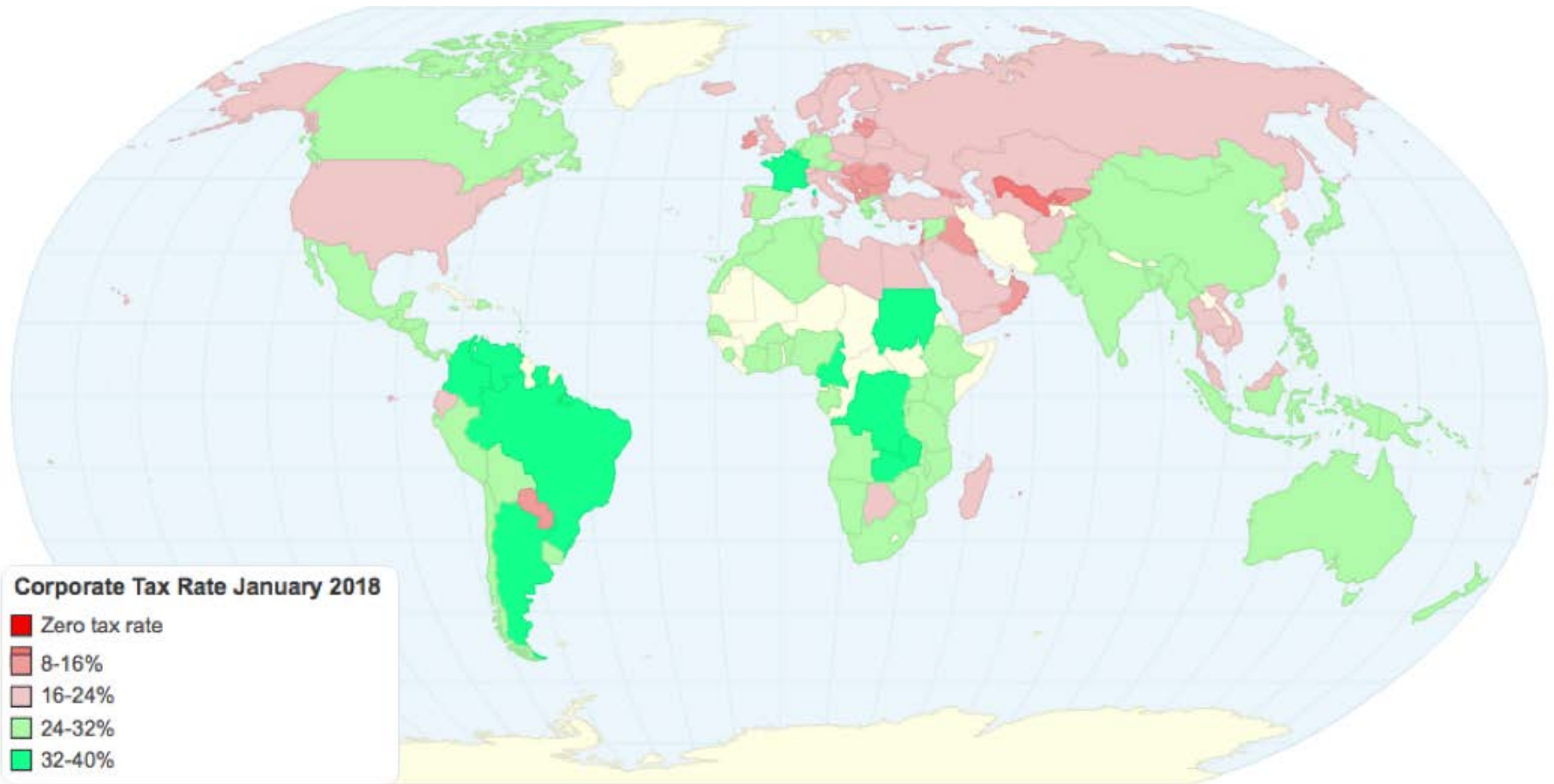
- Tilted Tax Code: In the United States, as in much of the rest of the world, and as has been true for most of the last century, the tax code has been tilted towards debt, rewarding firms that borrow money with tax savings, relative to those that use equity to fund their operations.
- But Change is coming: The most revolutionary component of the US tax reform package that passed at the end of last year is that it reduces the benefits of debt in multiple ways, and by doing so, challenges companies that have long depended on debt to reexamine their financing policies.

The Debt Trade Off



The Tax Code Change: Marginal Tax Rate

US: Marginal Tax Rate = 40% in 2017 -: 24% in 2018



Tax Code Change: Interest Deduction Limits

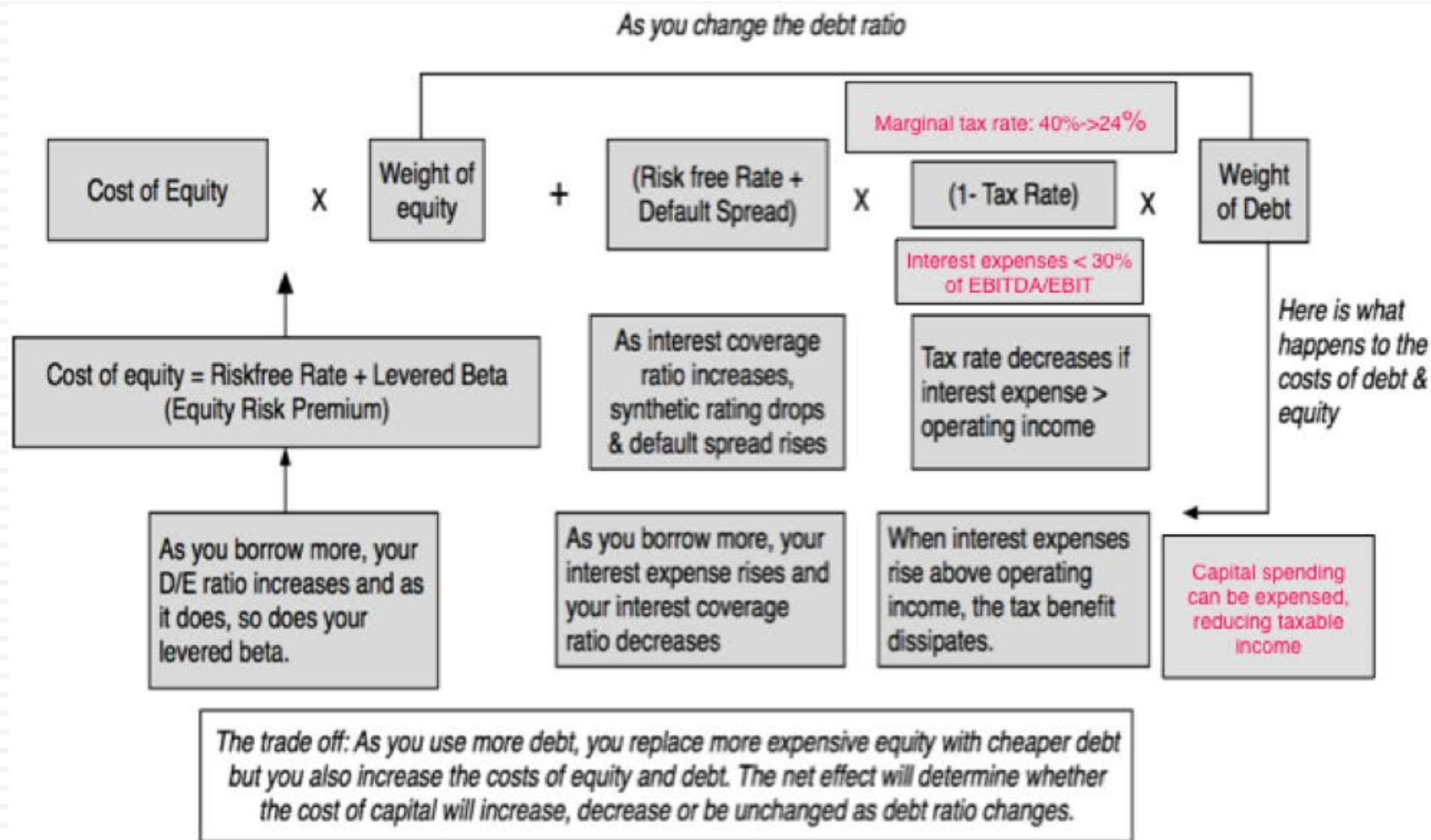
- Until last year, US companies have been able to claim their interest expenses as tax deductions, as long as they have the income to cover these expenses.
- With the new tax code, there is a limit to how much interest you can deduct, at 30% of “operating income”.
- Two details:
 - Any excess interest expenses that cannot be deducted can be carried forward and claimed in future years
 - Congress has chosen to make up its own definitions of operating income, with EBITDA standing on for operating income until 2022 and then transitioning to earnings before interest and taxes (EBIT).

Indirect Effects of other Code Changes

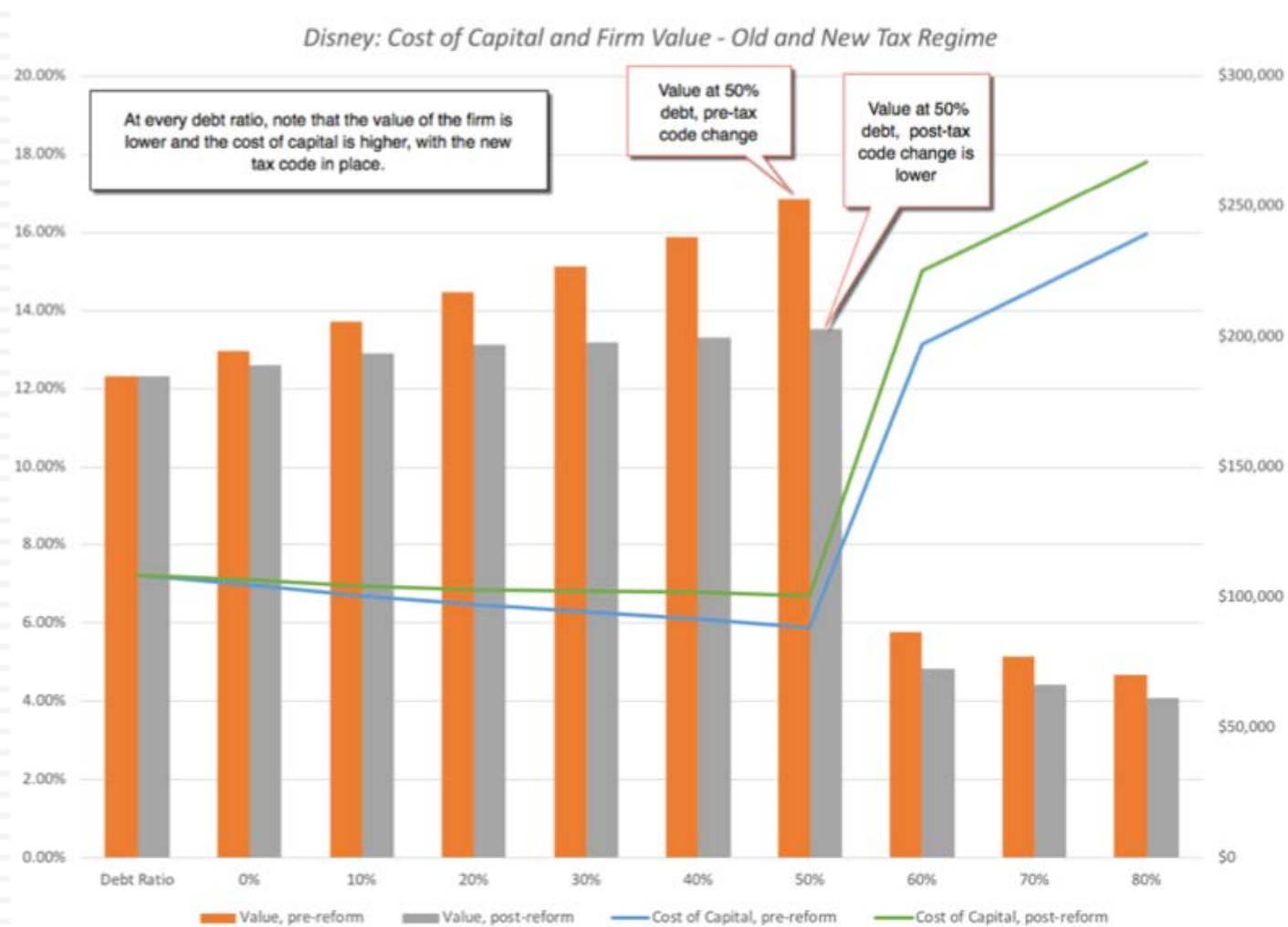
- Capital Expensing: Attempting to encourage investments in physical assets, especially at manufacturing companies, the tax code will allow companies to expense their capital investments for a temporary period. The resulting tax deductions may be large enough to reduce the benefit to having the interest tax deduction.
- Un-trapped Cash: As companies are allowed to pay a one-time tax and bring trapped cash back to the United States, the cash will be now available for other uses and reduce the need for debt as a funding source.

Optimal Debt Ratio – Cost of Capital Approach

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Tax Code Effect : Disney Cost of Capital and Value



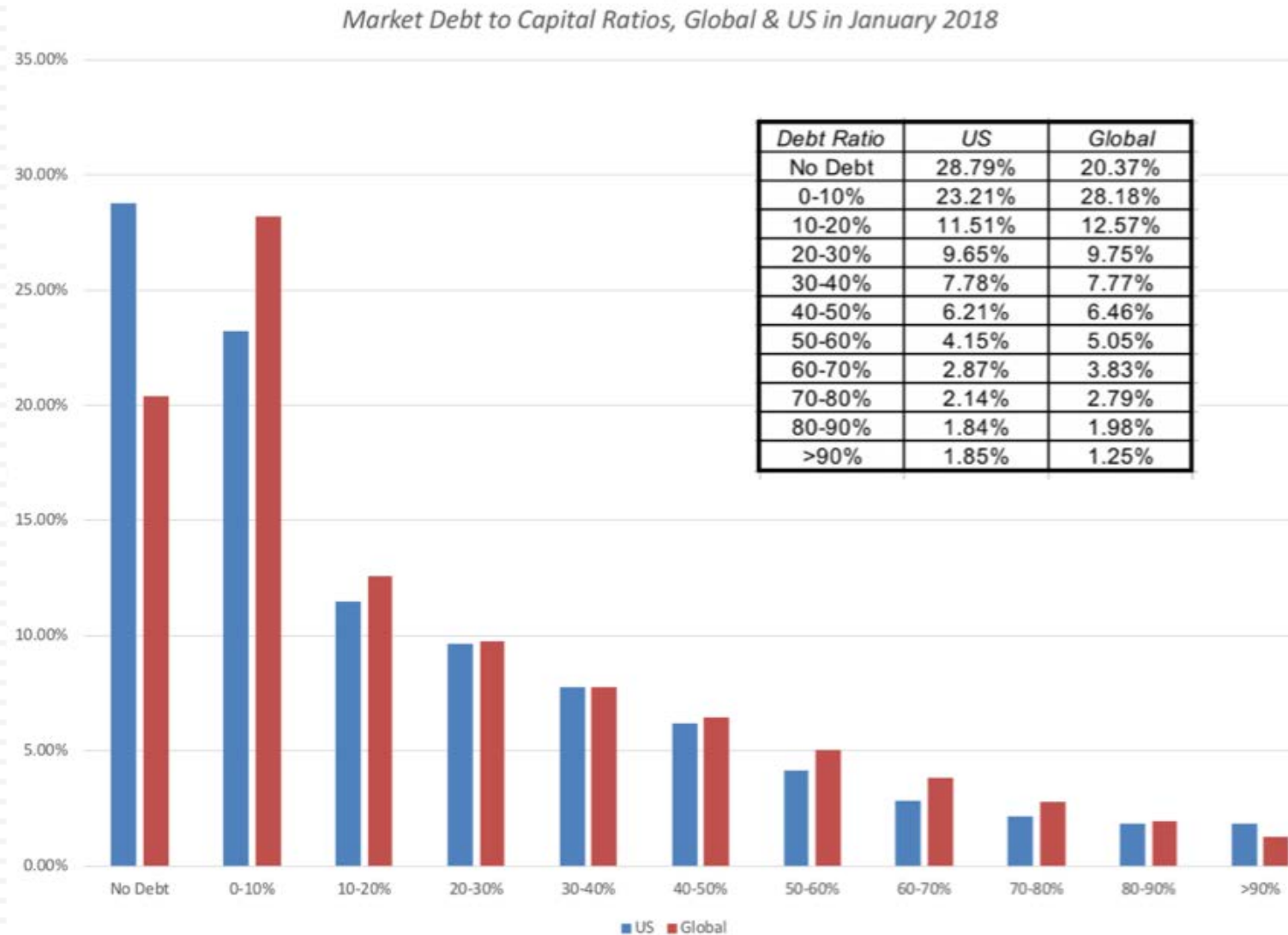
Tax Code Effect on Value

	Disney (Actual Debt Ratio = 13.21%)			Facebook (Actual Debt Ratio = 0.38%)			Ford (Actual Debt Ratio = 26.62%)		
Debt Ratio	Pre-Reform	Post-Reform	Change in Value	Pre-Reform	Post-Reform	Change in Value	Pre-Reform	Post-Reform	Change in Value
0%	\$ 184,639.60	\$ 184,639.60	\$ -	\$ 514,875.63	\$ 515,370.11	\$ 494.48	\$37,516	\$37,516	\$ -
10%	\$ 194,701.45	\$ 188,955.78	\$ (5,745.67)	\$ 543,736.14	\$ 530,101.88	\$ (13,634.26)	\$38,106	\$37,775	\$ (331.44)
20%	\$ 205,977.30	\$ 193,478.58	\$ (12,498.73)	\$ 569,558.65	\$ 538,369.49	\$ (31,189.17)	\$38,715	\$38,036	\$ (678.62)
30%	\$ 217,004.66	\$ 196,726.98	\$ (20,277.68)	\$ 349,718.98	\$ 299,129.28	\$ (50,589.70)	\$39,235	\$38,183	\$ (1,052.10)
40%	\$ 226,843.95	\$ 198,058.99	\$ (28,784.96)	\$ 296,857.97	\$ 259,603.24	\$ (37,254.74)	\$39,695	\$38,251	\$ (1,443.93)
50%	\$ 238,163.34	\$ 199,791.32	\$ (38,372.02)	\$ 257,878.86	\$ 229,303.73	\$ (28,575.13)	\$40,186	\$38,340	\$ (1,845.85)
60%	\$ 253,006.38	\$ 203,125.05	\$ (49,881.33)	\$ 227,948.01	\$ 205,337.80	\$ (22,610.21)	\$32,777	\$30,261	\$ (2,516.61)
70%	\$ 86,528.29	\$ 72,661.86	\$ (13,866.43)	\$ 204,242.50	\$ 185,907.48	\$ (18,335.02)	\$32,104	\$28,773	\$ (3,331.27)
80%	\$ 77,448.80	\$ 66,371.33	\$ (11,077.47)	\$ 147,148.87	\$ 137,893.00	\$ (9,255.87)	\$23,539	\$22,155	\$ (1,384.12)
90%	\$ 70,246.79	\$ 61,083.20	\$ (9,163.59)	\$ 133,783.93	\$ 126,092.90	\$ (7,691.03)	\$22,018	\$20,878	\$ (1,139.61)
Actual	\$ 190,500.00	\$ 184,670.00	\$ 5,830.00	\$ 515,378.00	\$ 515,386.00	\$ (8.00)	\$ 38,208.00	\$ 37,452.00	\$ (756.00)

Generalizing...

1. Value added by debt decreases: The value added by debt drops with the new tax code and the change is larger at higher debt ratios. Taking away 40% of the tax benefits of debt (by lowering the marginal tax rate from 40% to 24%) has consequences.
2. No effect if you are not borrowing: The lost value is almost entirely hypothetical, for Facebook, since it did not borrow money even under the old code and did not have much capacity to add value from debt in the first place.
3. Effect increases with existing debt: It is large, for Disney and Ford, as existing debt becomes less valuable, with the new tax reform.
4. Other benefits may compensate: Note, though, that companies will also benefit from the tax code changes, paying lower taxes on income both domestically, with the lowering of the US tax rate, and on foreign income, from the shift to a regional tax model.

Debt Ratio: Cross Section



Regional Differences on Leverage

Sub Group	Debt/Capital (Book)	Debt/Capital (Market)	Net Debt/ Capital (Book)	Net Debt/ Capital (Market)	Debt/EBITDA
Africa and Middle East	45.23%	34.00%	30.27%	21.31%	5.99
Australia & NZ	61.66%	43.48%	57.82%	39.60%	8.57
Canada	55.35%	42.42%	52.46%	39.60%	7.16
China	51.63%	39.34%	41.83%	30.40%	8.52
EU & Environs	60.75%	47.17%	53.68%	40.07%	7.78
Eastern Europe & Russia	31.02%	38.05%	21.35%	27.05%	2.47
India	54.89%	20.85%	50.58%	18.15%	3.92
Japan	56.16%	49.11%	27.64%	22.35%	7.61
Latin America & Caribbean	51.67%	40.01%	46.23%	34.90%	5.74
Small Asia	44.04%	34.76%	36.01%	27.59%	4.54
UK	63.74%	46.39%	53.68%	36.33%	7.94
United States	64.06%	37.11%	60.86%	33.99%	7.09

Most Highly Levered Sectors

<i>Debt/Capital (Market)</i>			<i>Debt/EBITDA</i>	
<i>Industry Name</i>	<i>Book Debt to Capital</i>	<i>Market Debt to Capital</i>	<i>Industry Name</i>	<i>Debt/EBITDA</i>
Hospitals/Healthcare Facilities	85.24%	63.84%	Real Estate (Development)	9.48
Auto & Truck	75.01%	59.69%	Investments & Asset Management	8.88
Telecom (Wireless)	61.15%	54.54%	Total Market	8.05
Broadcasting	88.55%	52.87%	Oil/Gas Distribution	8.04
Green & Renewable Energy	52.29%	49.55%	Real Estate (General/Diversified)	7.95
Oil/Gas Distribution	59.91%	48.30%	Green & Renewable Energy	7.92
Retail (Grocery and Food)	65.17%	45.56%	Auto & Truck	7.48
Telecom. Services	66.44%	44.30%	Insurance (Life)	6.97
Rubber& Tires	51.28%	43.82%	Oil/Gas (Production and Exploration)	6.76
Power	57.68%	43.30%	Real Estate (Operations & Services)	6.45
Retail (Automotive)	75.29%	43.17%	Hospitals/Healthcare Facilities	5.84

Implications

- Deleveraging at firms that have pushed to their optimal debt ratios, under old tax code: There will be highly levered firms which would have been at the right mix of debt and equity, under the old tax regime, will find themselves over levered and in need of paying down debt.
- Go slow at firms that have held back: For firms like Facebook that have held back from borrowing, under the old tax code, the new tax code reduces the incentive to add to debt, even as they mature. Transactions that derive most of their value from leverage will be handicapped: With highly levered transactions, while one reason was that they were equity constrained (and that reason remains), the bigger reason was that it allowed them to generate added value from recapitalization. For these investors, the new tax code is unequivocally bad news.

In conclusion

- From financial first principles, there is nothing inherently good or bad about debt. It is a source of financing that you can use to build a business, but by itself, it neither adds nor detracts from the value of the business.
- It is the addition of tax benefits and bankruptcy costs that makes the use of debt a trade off between its benefits (primarily tax driven) and its costs (from increased distress and agency costs).
- The new tax code has not removed the tax benefits of debt but it has substantially reduced them, and we should expect to see less debt overall at companies, as a consequence.
- In my view, that is a positive for the economy, since debt magnifies economic shocks to businesses and not only creates more volatile earnings and value, but deadweight costs for society.