# EFCG A/E/C Industry Overview

*ACEC Ohio*
*June 14, 2018*

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*Compiled by EFCG*
*www.efcg.com | (212) 752-2203*

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# Financial & Strategic Advisors to the A/E/C Industry

Founded in 1990, EFCG's mission is to help Architecture, Engineering, and Consulting ("A/E/C") firms become more business and financially efficient, so that they can improve global infrastructure and sustainability, while creating greater value and opportunities for their shareholders and employees.

***Financial & Strategic Consulting***
*Advised majority of ENR Top 500 and 150 Global Design Firms, and serve on a retainer basis to roughly 50 a/e/c firms of all sizes.*

***Peer Benchmarking Analysis***
*Perform ~100 PBAs annually - compares a firm to 20-40 peers across 150+ key financial metrics.*

***Mergers & Acquisitions***
*Advised on over 150 completed transactions, representing cumulative valuation of roughly $9 billion, with client size from $3 million to $10 billion in revenue. We advise both sellers and buyers.*

***Valuations***
*~30 firms use EFCG to provide their annual internal stock valuations, and we perform ~50 additional ad hoc valuations each year.*

***Internal Ownership Transition***
*Specialize in assisting employee-owned e/c firms to meet their internal ownership transition needs, through creation or restructuring of their ownership model, increased profitability, better management of their growth, more efficient balance sheet management, and a more strategic approach to their internal valuation.*

***5 Annual Executive Conferences***
*Address the key financial and strategic concerns of the e/c industry, and corresponding executives in attendance: CEO ($29^{th}$ annual), CFO ($18^{th}$), CHRO ($9^{th}$), CIO ($4^{rd}$), and Rising Leaders ($5^{th}$).*

# Presentation Outline

I. Market Segmentation

II. Growth and Profitability: Snapshot & Trends

III. Key Issues and Survey Insights for A/E/C Firms

IV. Value Creation Strategies:
*Observations Over Last 30 Years*

# Section I:

## Market Segmentation

# Participants in the 2017 EFCG CEO Survey*

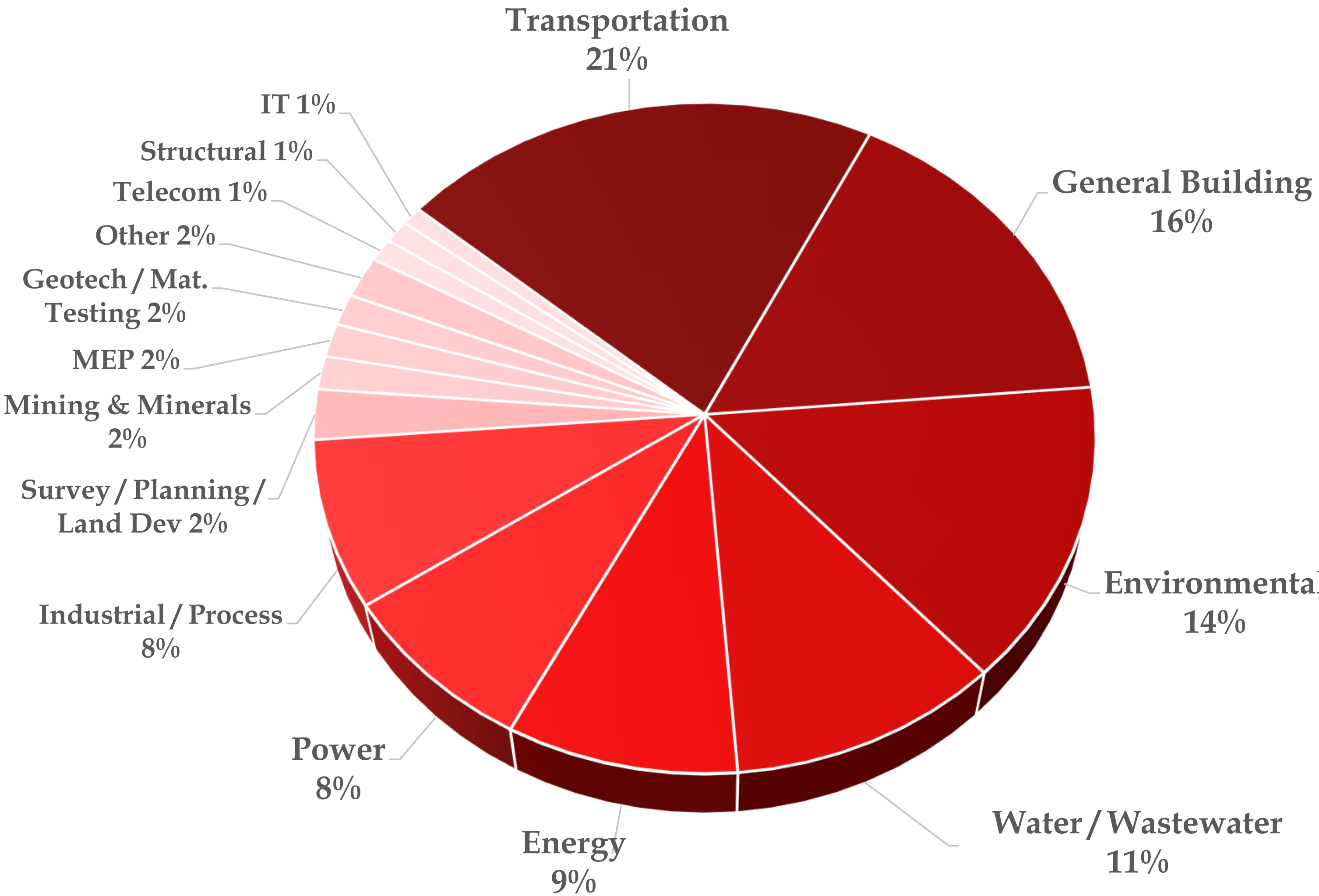
| Gross Revs | # of Firms | '17 Gross Revs ($Bil) |
|---|---|---|
| > $5 Bil | 5 | 53 |
| $1 Bil-$5 Bil | 15 | 28 |
| $250 Mil-$1 Bil | 38 | 18 |
| $100 Mil-$250 Mil | 49 | 8 |
| $50 Mil-$100 Mil | 48 | 3 |
| $25 Mil-$50 Mil | 34 | 1 |
| < $25 Mil | 41 | 1 |
| Total | 230 | 112 |

- The "mega firms" (> $5 Bil revs) generate about half the industry revenues, but industry remains fragmented

**Includes primarily engineering and consulting revenues; ~13% is in construction & EPC*

# Market Segmentation

*(Of $112 Billion in 2017 Gross Revenues)*




*Data from EFCG 2017 CEO Conference*



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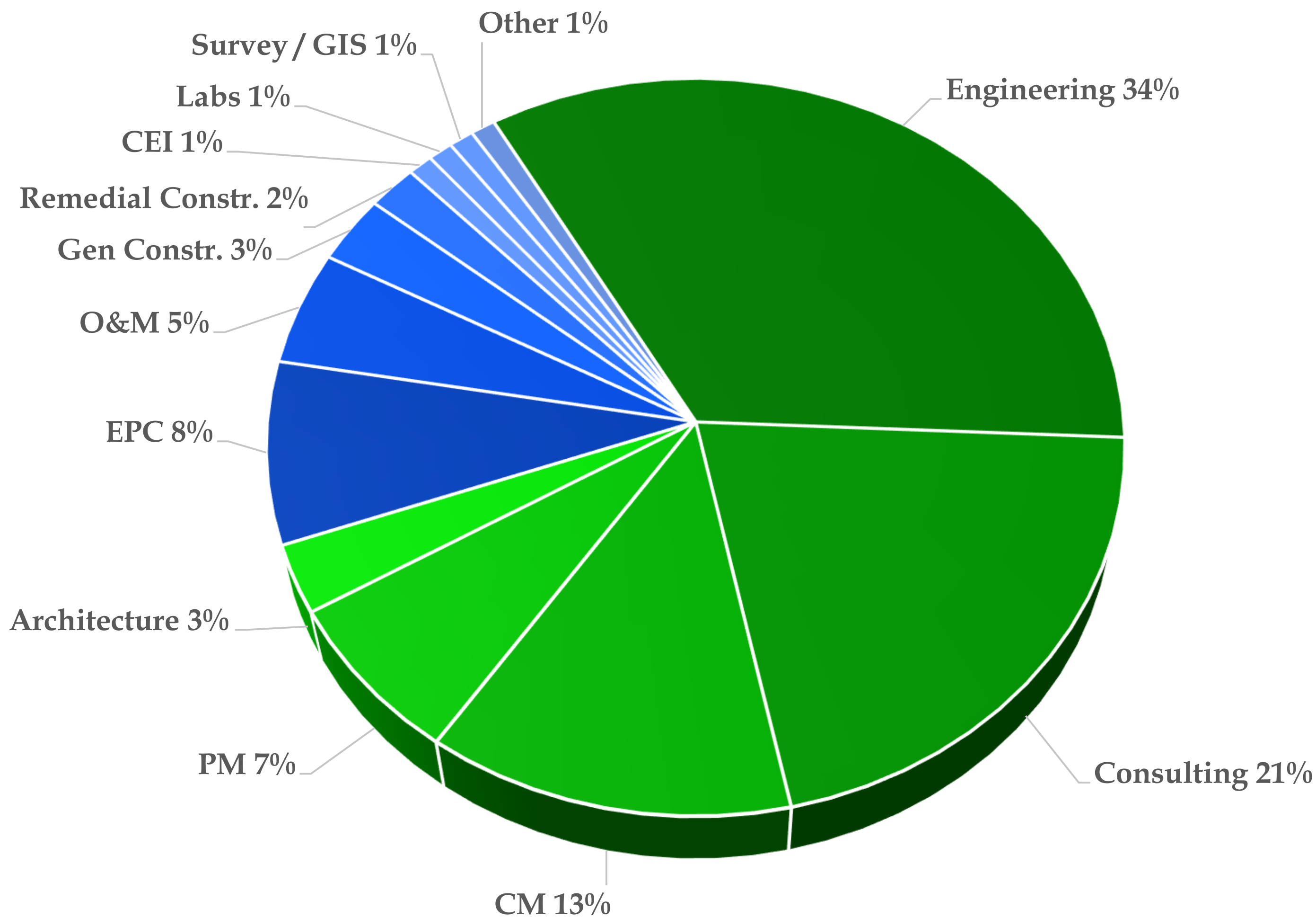
# Functional Segmentation

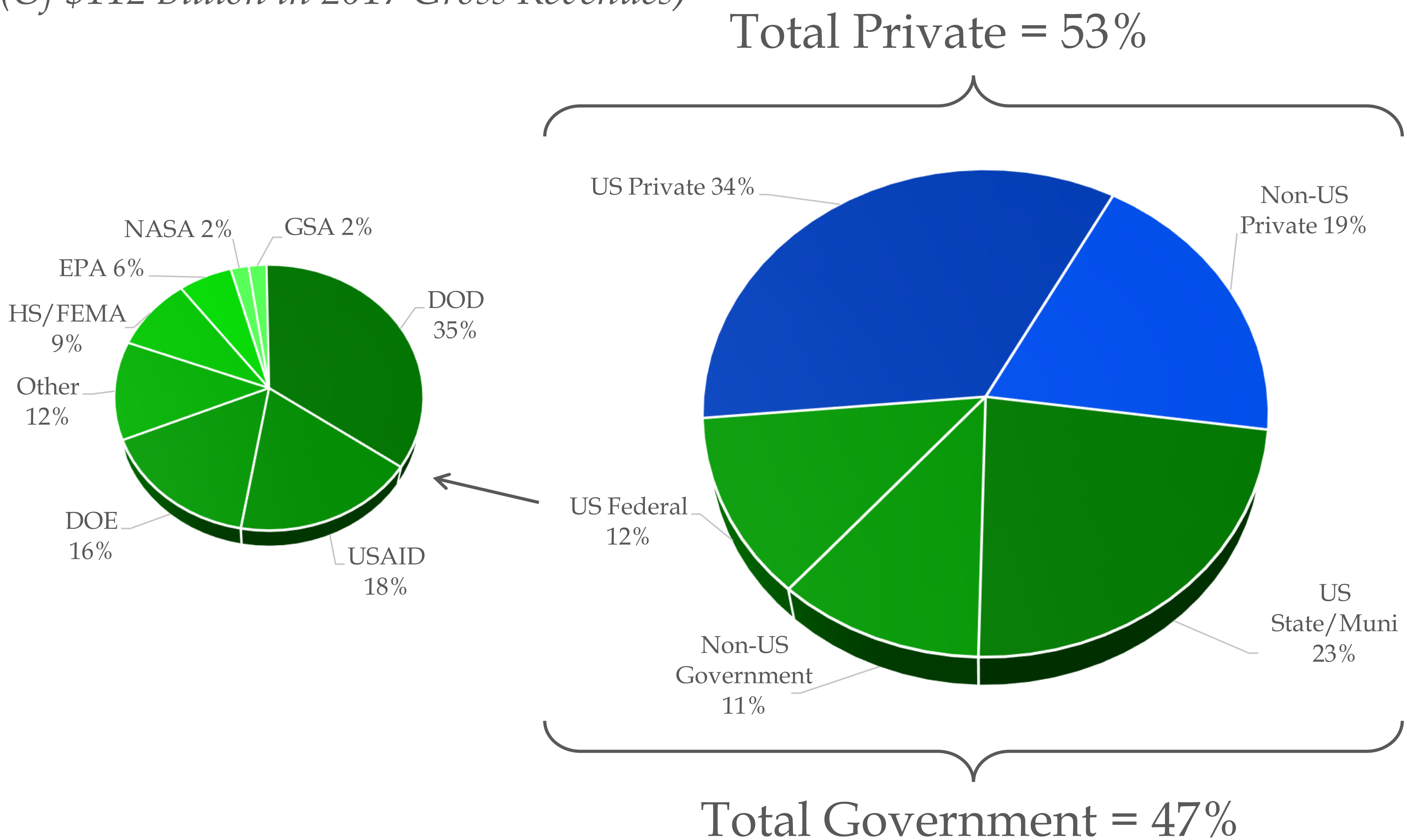
*(Of $112 Billion in 2017 Gross Revenues)*




*Data from EFCG 2017 CEO Conference*

# Customer Segmentation

*(Of $112 Billion in 2017 Gross Revenues)*




*Data from EFCG 2017 CEO Conference*



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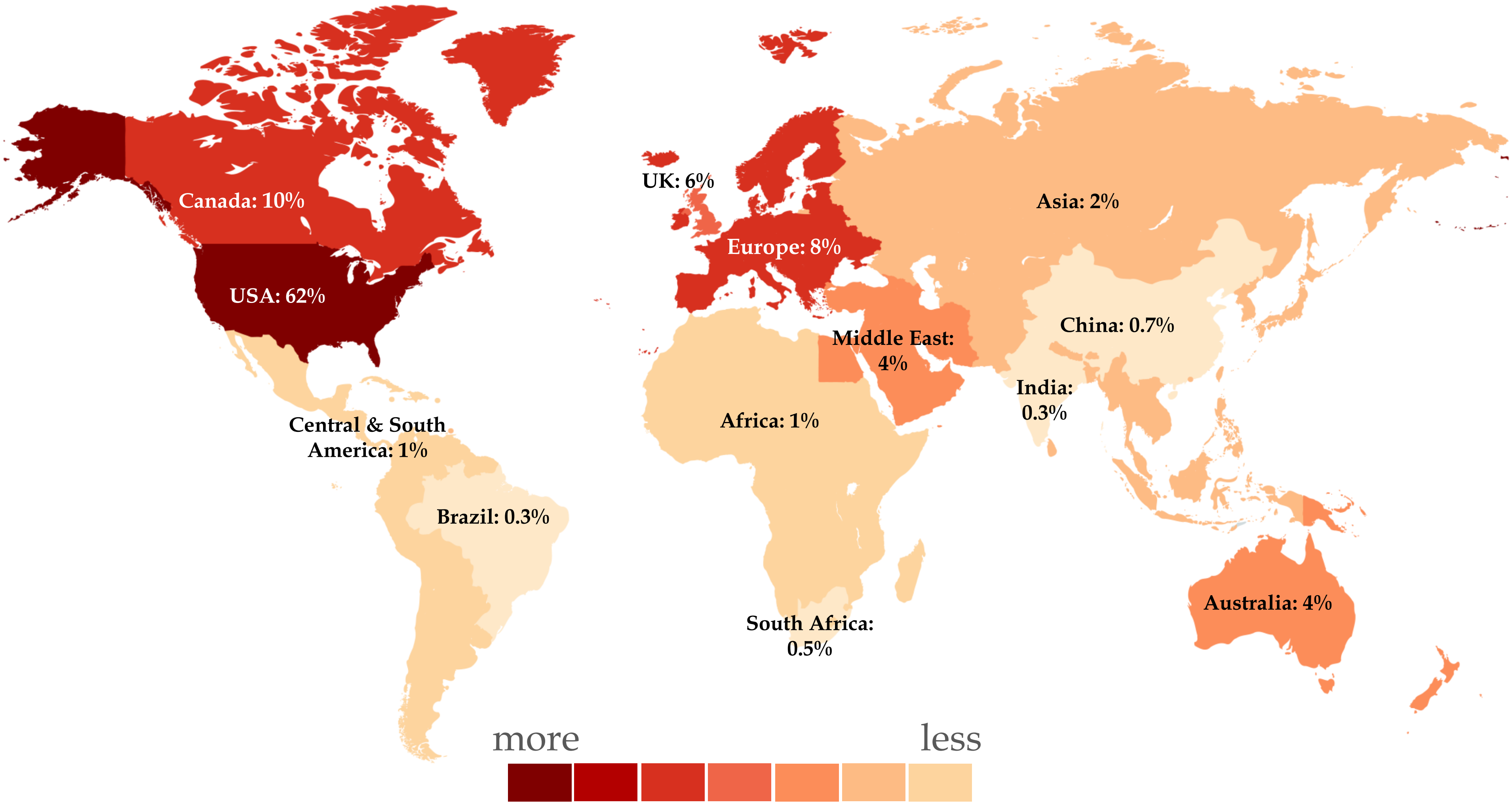
# Geographic Distribution of Projects

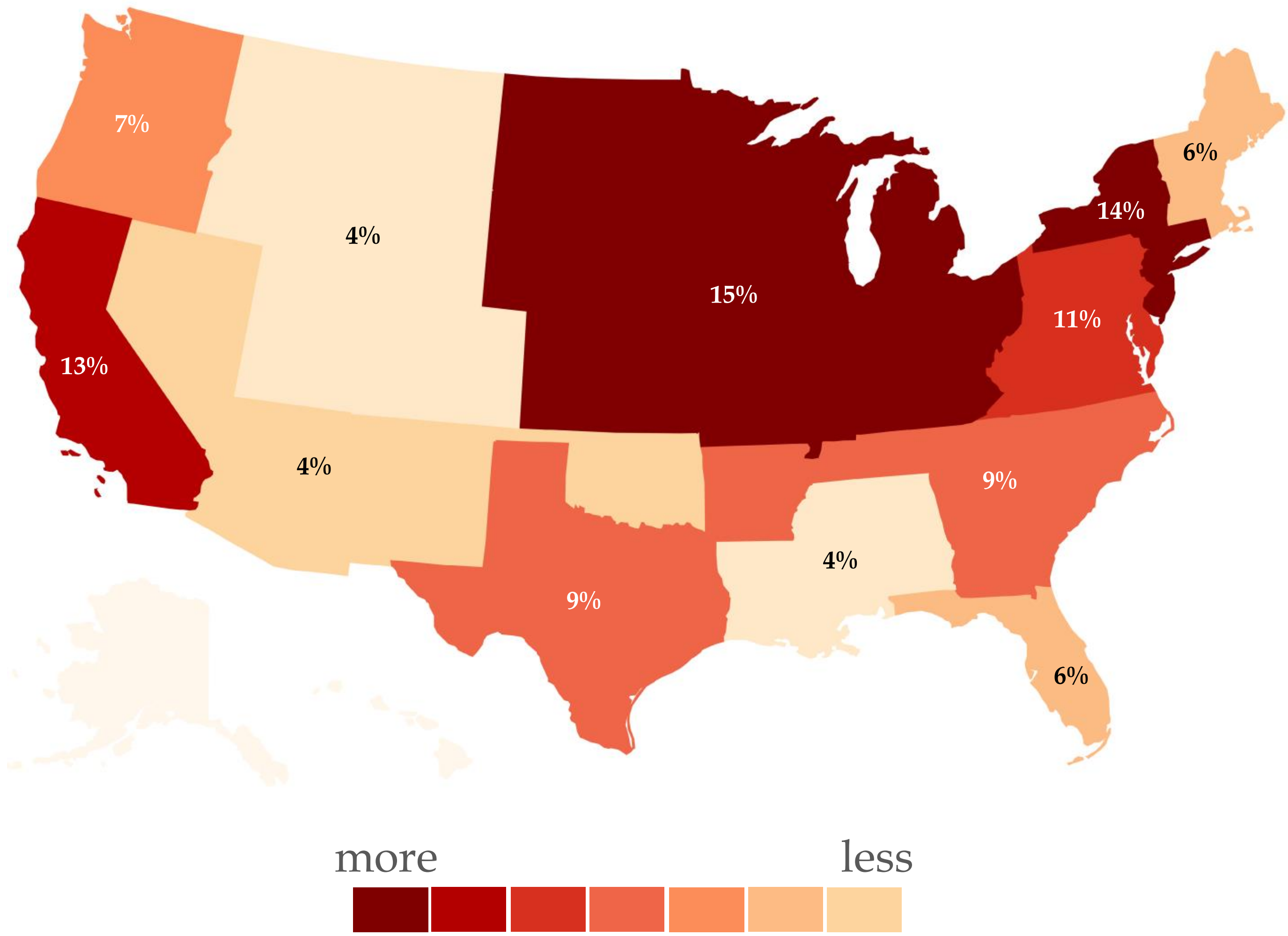
*(Of $112 Billion in 2017 Gross Revenues)*




*Data from EFCG 2017 CEO Conference*

# US Distribution of Projects

*(Of $69 Billion in 2017 US Gross Revenues)*




*Data from EFCG 2017 CEO Conference*



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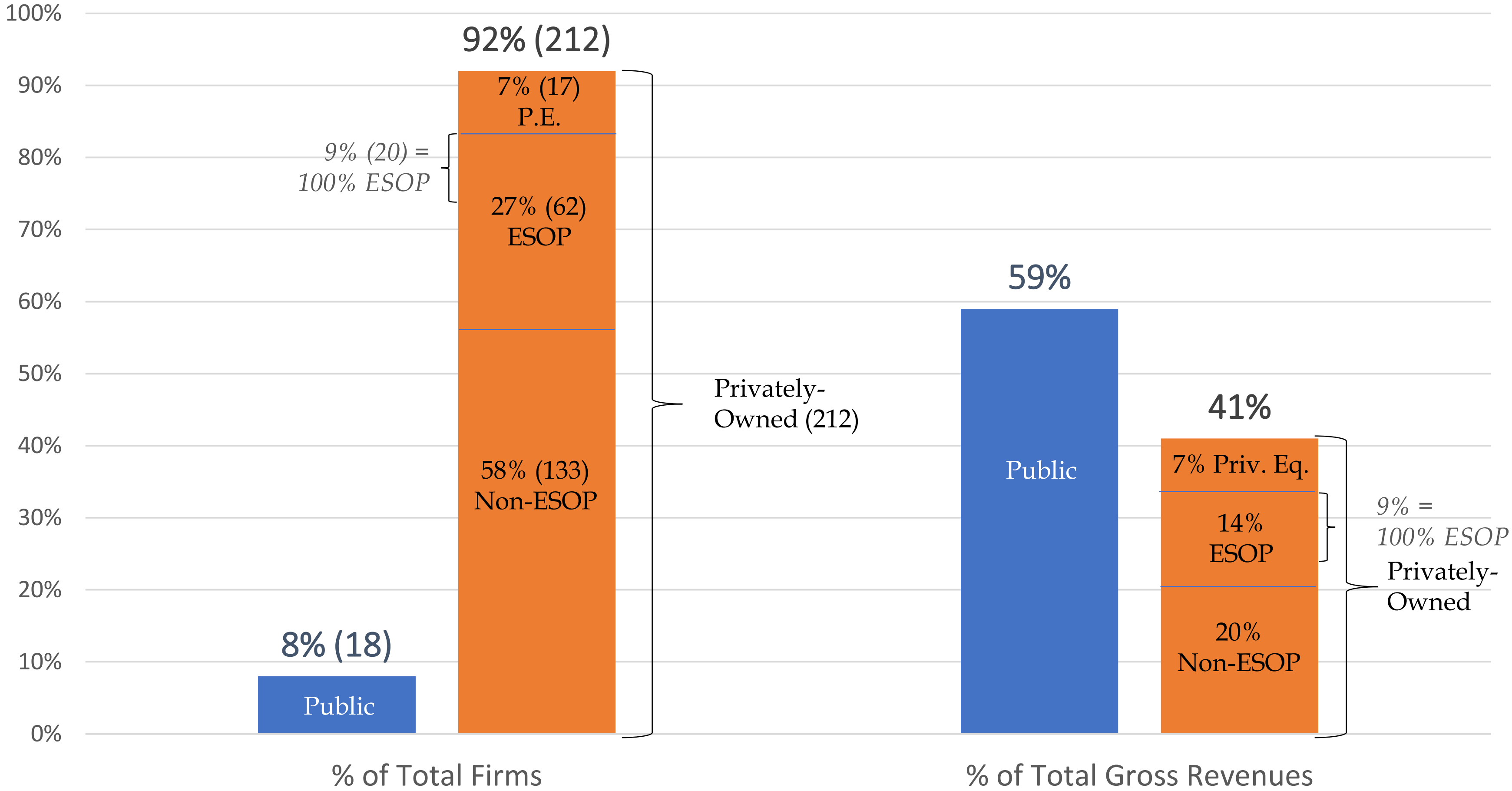
# Current Ownership Snapshot




- Public firms hold outsized share of revenues, as they have been the "consolidators"

*Data from EFCG 2017 CEO Conference*



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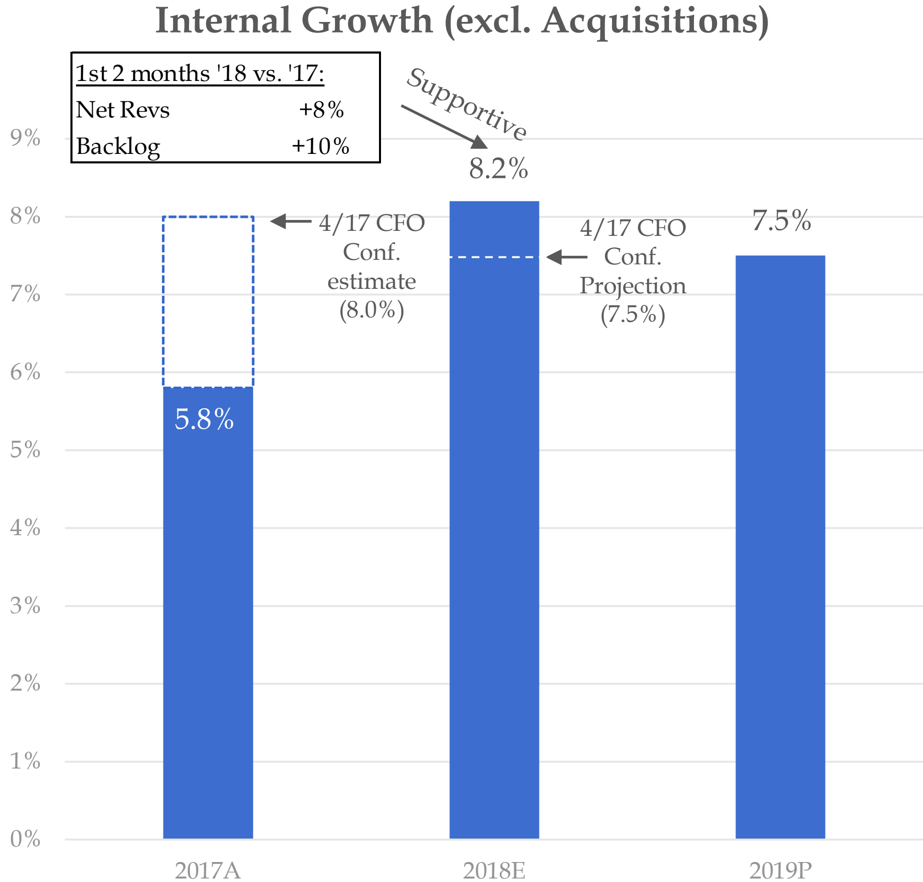
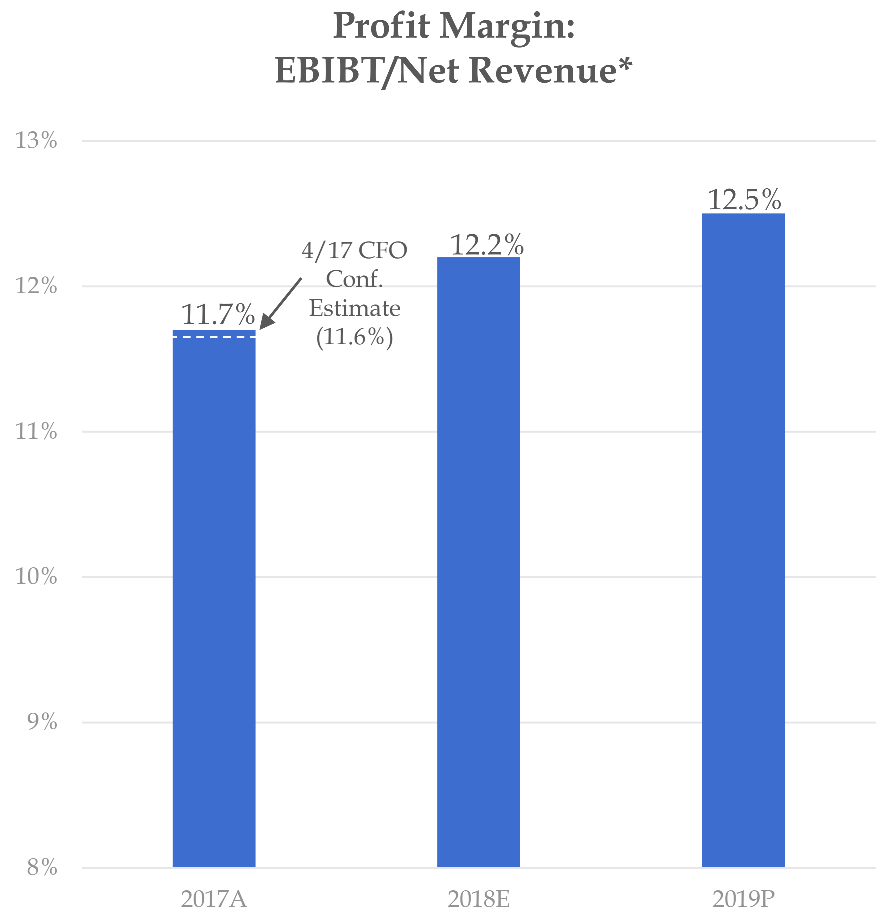
# Section II:

## Growth & Profitability

# Current Internal Growth & Profitability

*(Medians)*



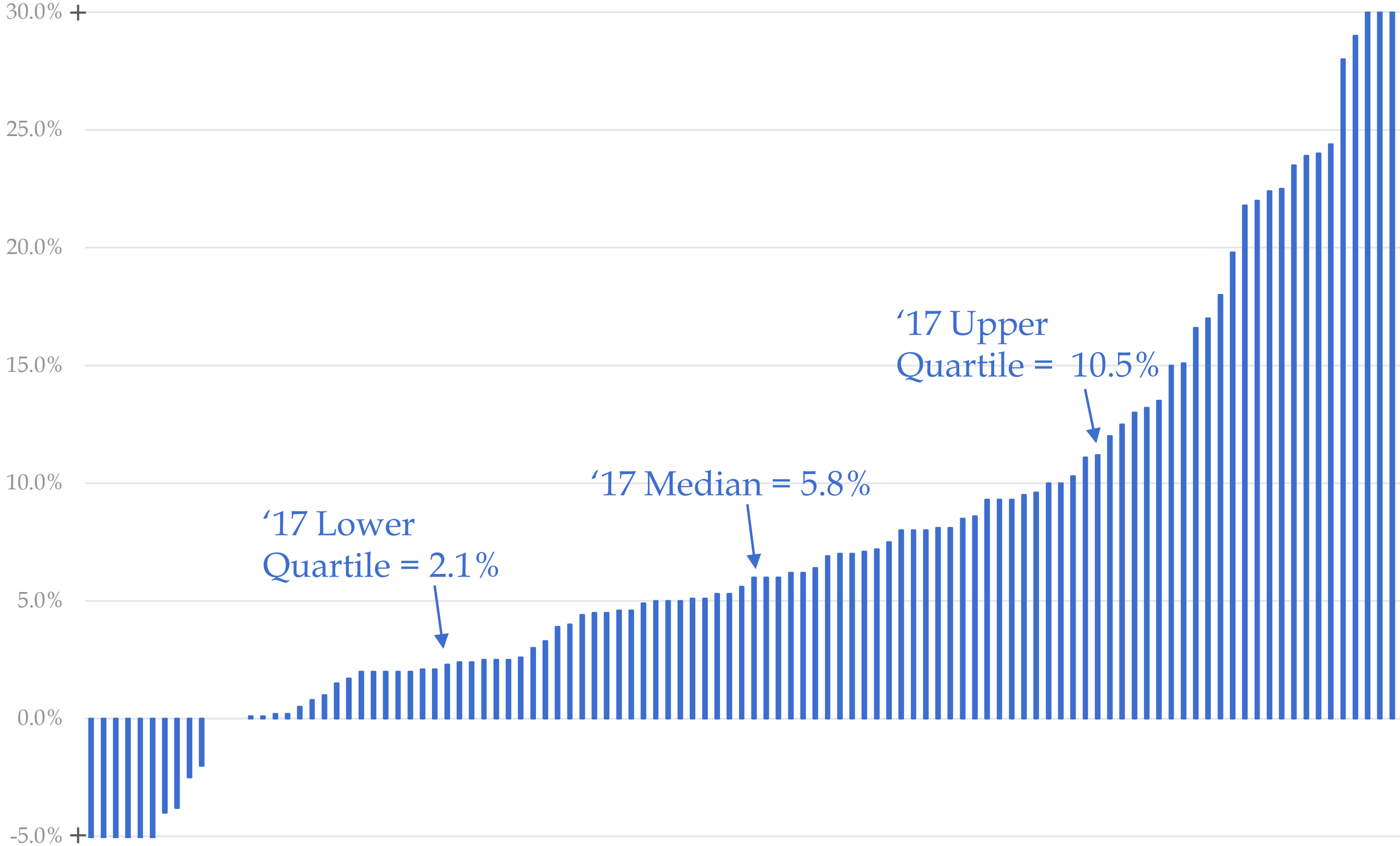




- 2017 growth estimate from a year ago not achieved, but margin was achieved
- 2018 growth est. supported by backlog (+10% over last 12 mos.) and Jan - Feb YoY growth (8%)
- 2019 outlook strong

*Data from EFCG 2018 CFO Conference*

**EBIBT = Earnings Before Interest, Bonuses and Tax; Net Revenues = Gross Revenues less pass-thrus (reimbursable expenses & subcontractors)*

# 2017 Actual Internal Growth Distribution




- Only 10 firms shrunk in 2017.
- Median doesn't tell the whole story: huge range; where is your firm? where should it be?

*Data from EFCG 2018 CFO Conference*



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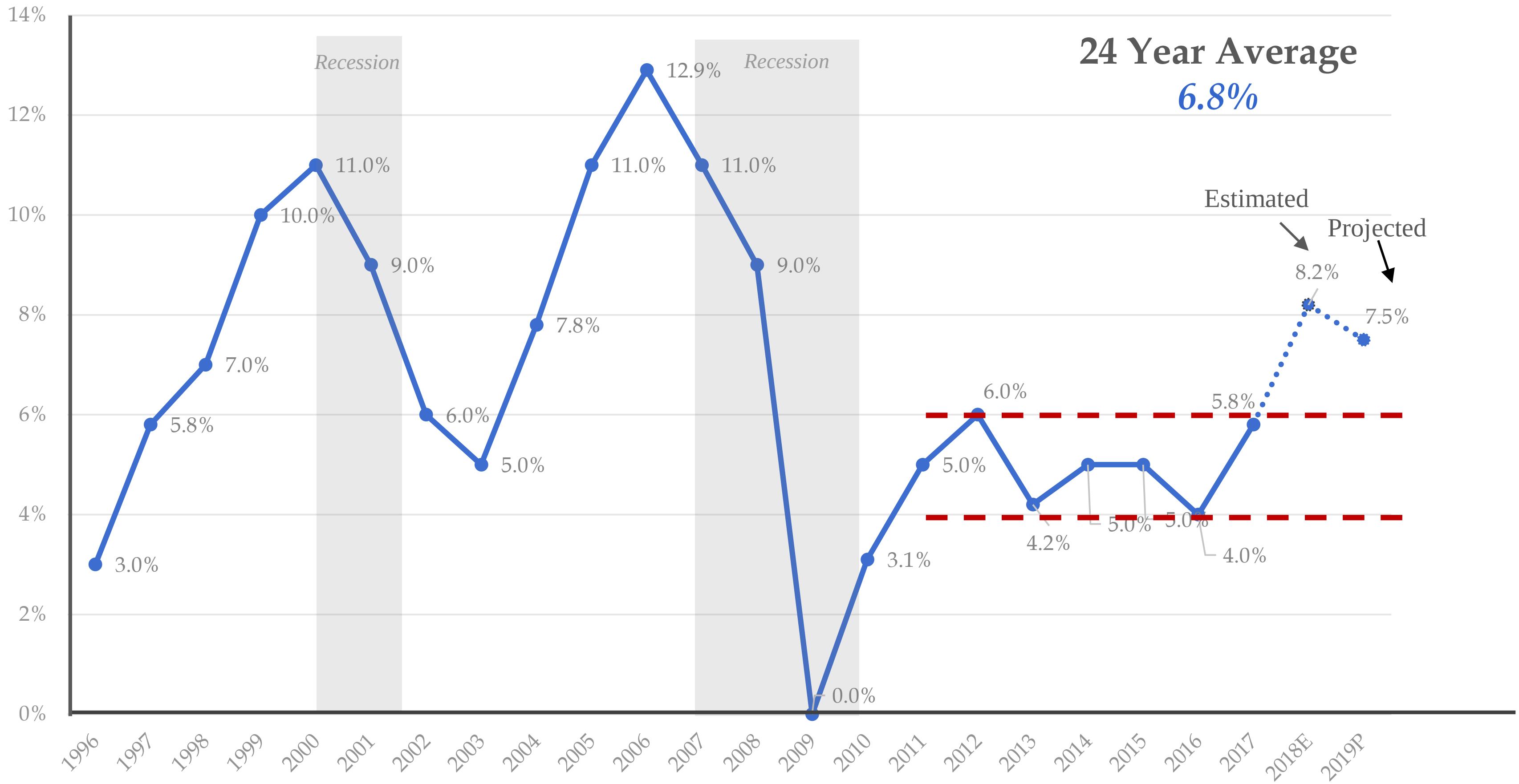
# Internal Growth: *Median*




- Growing industry, even in recessionary times
- Attractive industry for public & private equity investors clamoring for consistent growth
- Is 4% - 6% growth the "new normal"? Or are we finally breaking out? Or is this a sign of impending downturn?

*1996 – 2016 from CEO Conference Surveys*
*2017 – 2019P from 2018 CFO Conference Survey*



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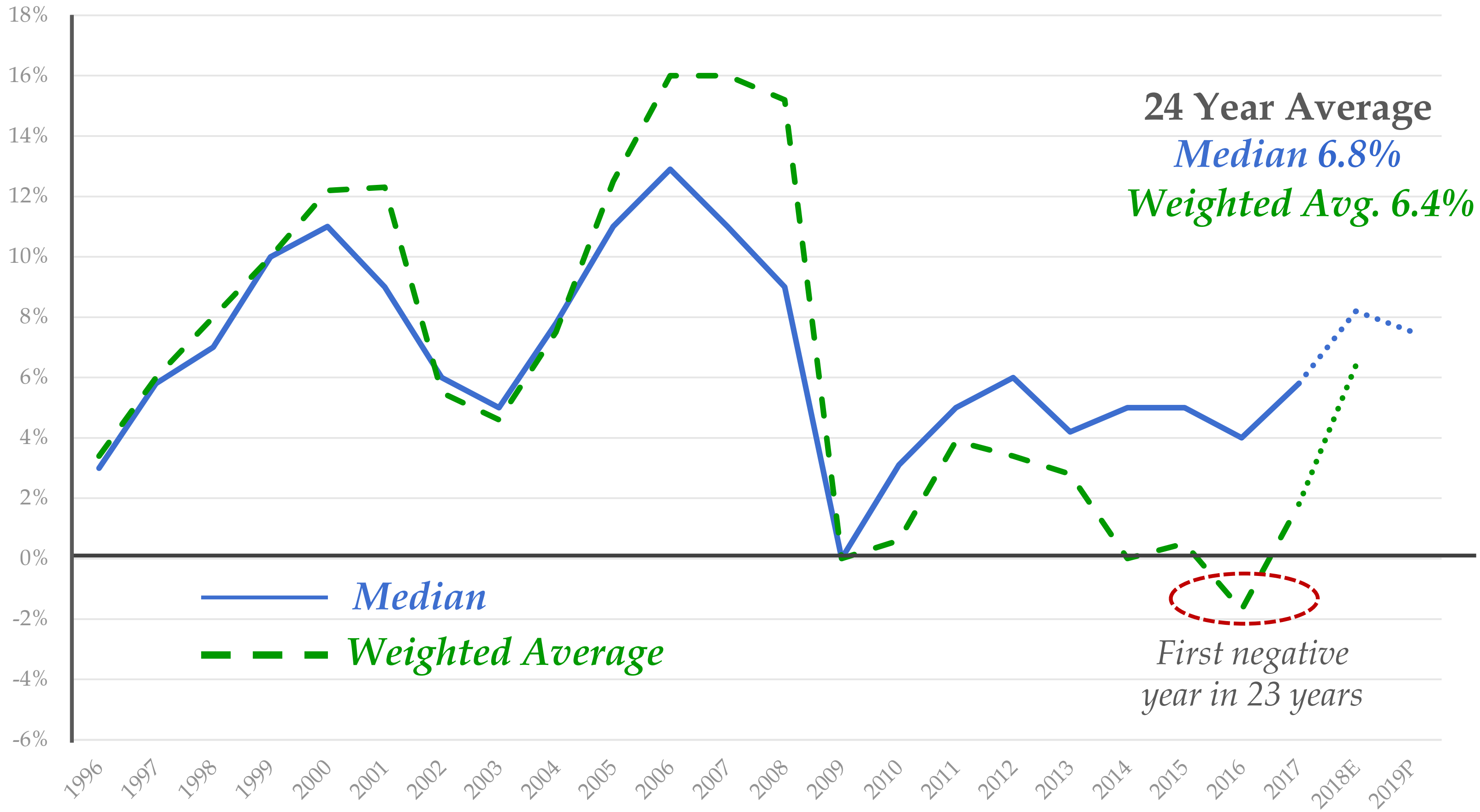
# Internal Growth: *Median vs. Weighted Average*

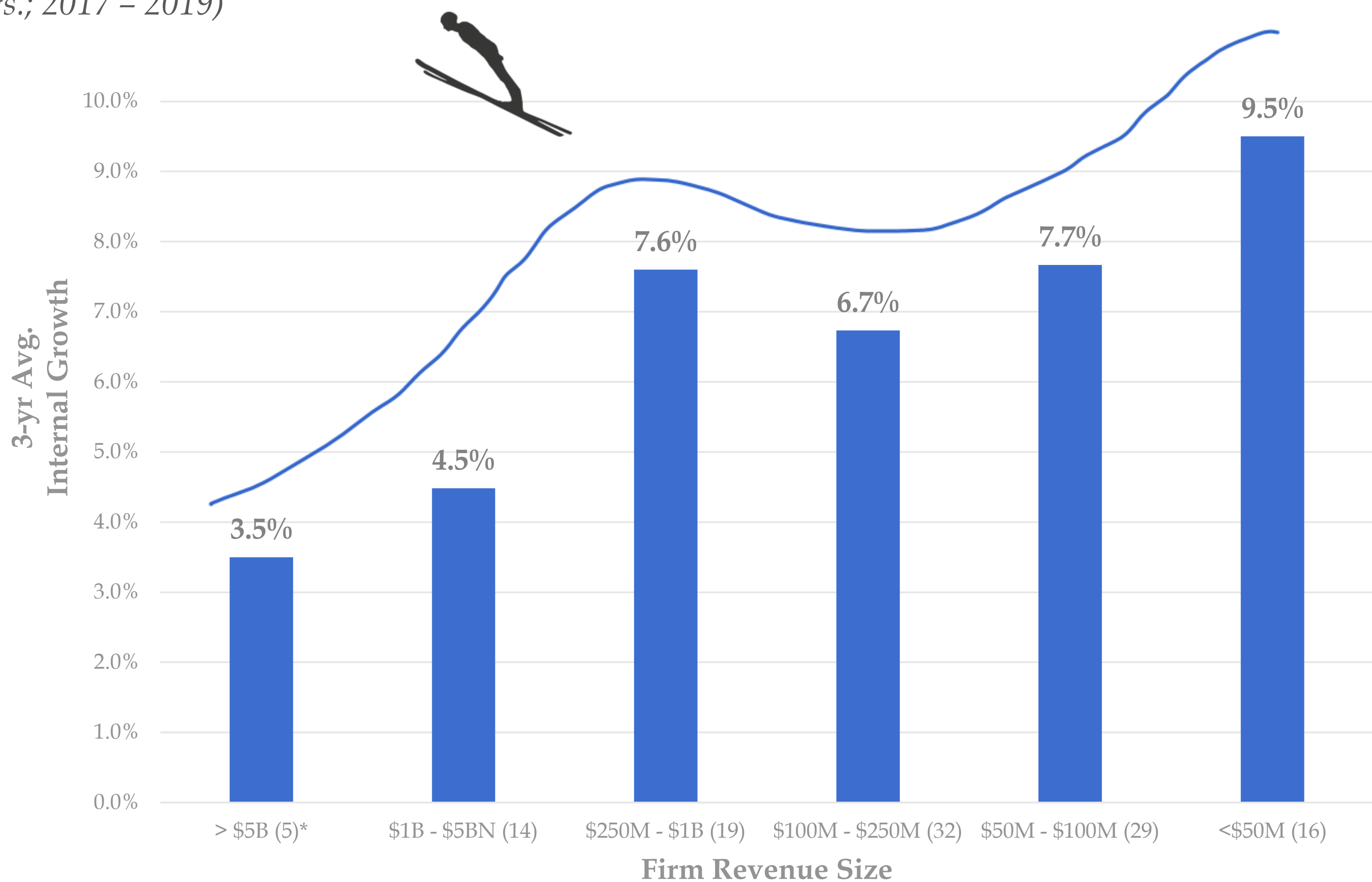



- Weighted Avg. (large firms) was above median 1996 – 2008; but below since 2009. Why?
  - Focus on acquisitions
  - Greater exposure to slower energy & mining markets, and non-U.S. geographies
  - Harder to grow fully-diversified business
- Weighted Avg. better represents overall industry growth; Median better individual firm benchmark

*Median: 1996 – 2016 from CEO Conference Surveys; 2017 – 2019P from 2018 CFO Conference Survey*
*Weighted Average: from CEO Conference Surveys*

# Internal Growth by Size

*(3-Yr Avgs.; 2017 – 2019)*




- Ski jump of size on internal growth
- Why are largest firms growing slower internally? Diversification? Harder to grow at that size?

**Data from EFCG's 2018 CFO Conference, except for >$5 Bil firms, which comes from EFCG's 2017 CEO Conf. Survey*



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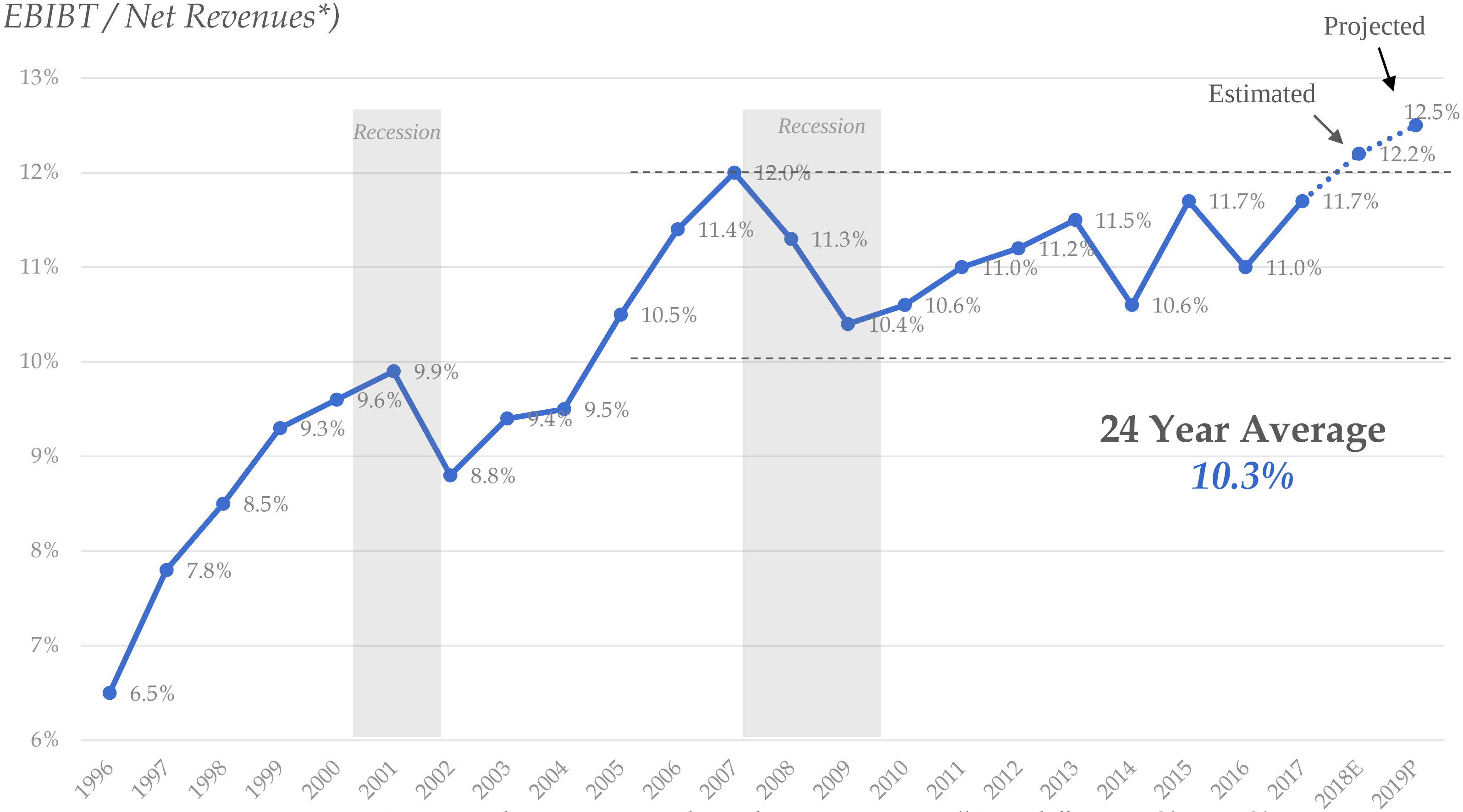
# Profitability

*(Median EBIBT / Net Revenues*)*

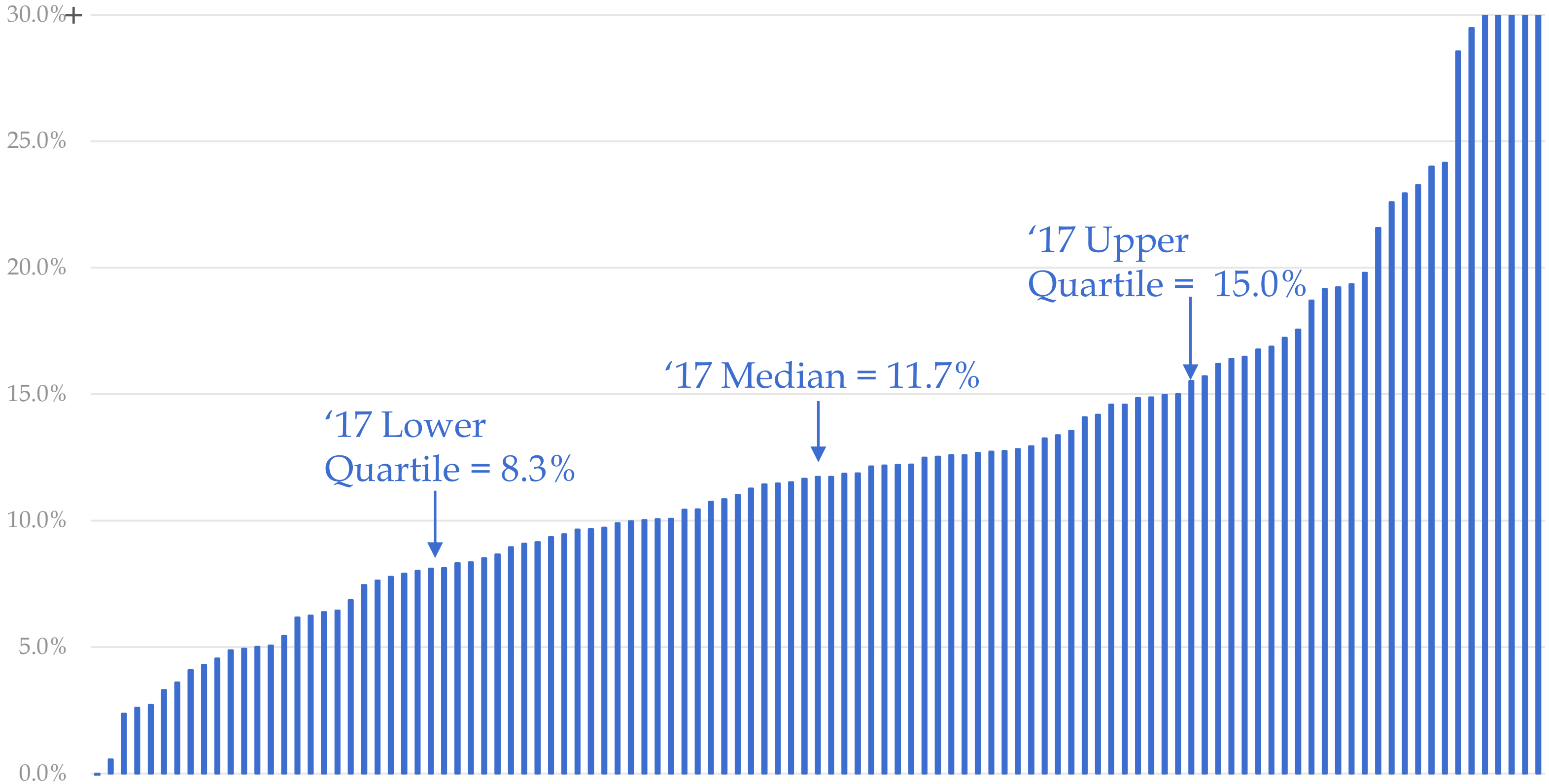



- Significant improvement over 20 years, but not much in last 10 years. "Stuck" at 10% - 12% margins? Why?
  - Where are the benefits of consolidation? Or do we need more consolidation?
  - Impact of globalization?
  - Is this a 10% - 12% margin industry if we continue to "bill hours" vs. "value-added" pricing?
  - Do we need a disruptive technology, or would that reduce margins?
  - Improvement in operating efficiencies?
- Profit margins only decline slightly during recessions – this is a <u>resilient industry</u>!

**EBIBT = Earnings Before Interest, Bonuses and Tax; Net Revenues = Gross Revenues less pass-thrus (reimbursable expenses & subcontractors)*

*1996 – 2016 from CEO Conference Surveys; 2017 – 2019P from 2018 CFO Conference Survey*

# 2017 Actual Profitability Distribution

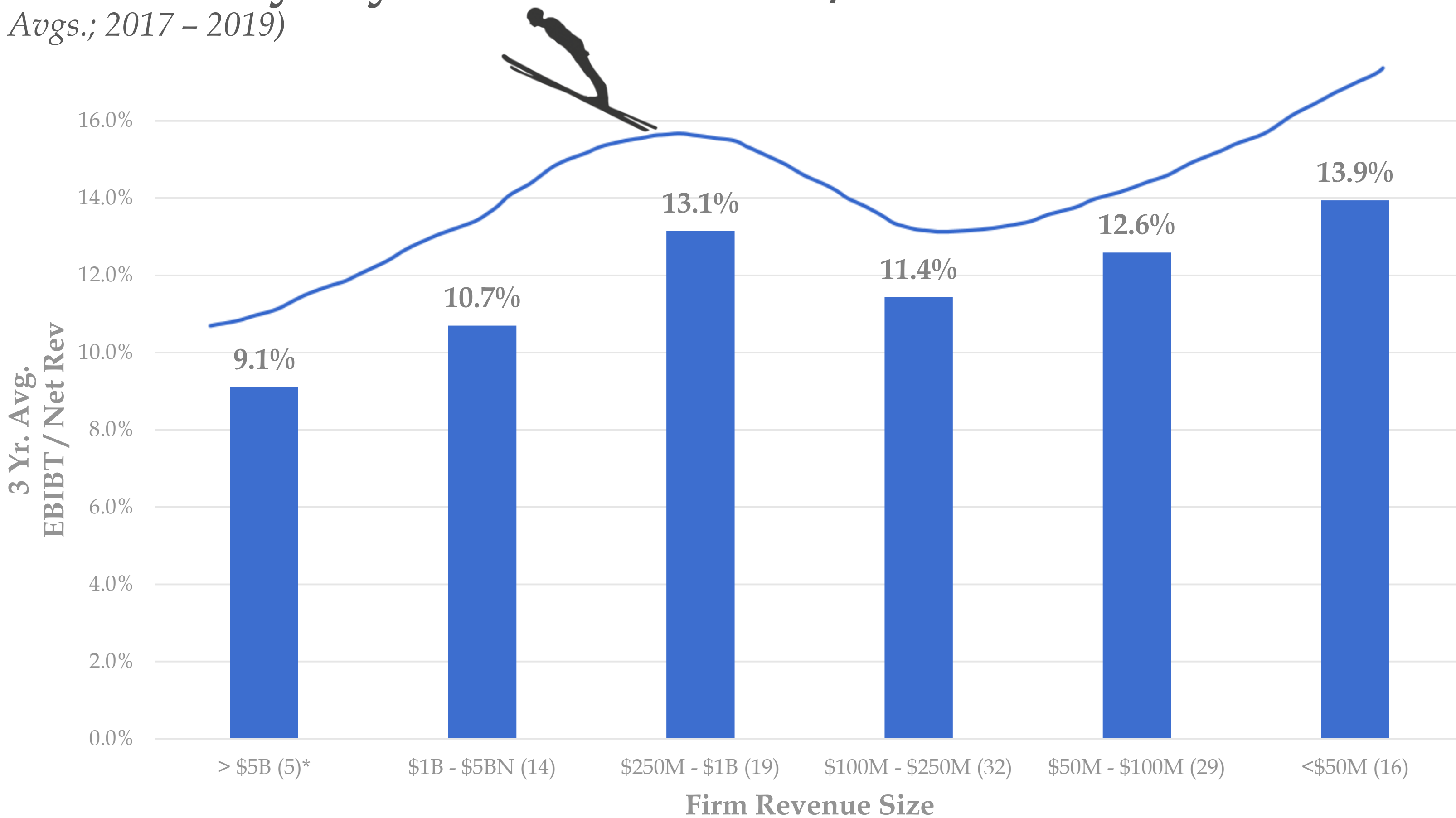



- No one lost money in 2017!
- Median, again, doesn't tell the whole story; is it even the best benchmark?
- When we ask CEOs where their firms' profitability lies vs. peers, 80% say above median!
- Probably not appropriate to compare your firm vs. all firms
  - Better to compare by size, business, customer, geography & ownership (Peer Benchmarking Analysis)

*Data from EFCG 2018 CFO Conference*

# Profitability by Size: **EBIBT** / Net Revs

*(3-Yr Avgs.; 2017 – 2019)*

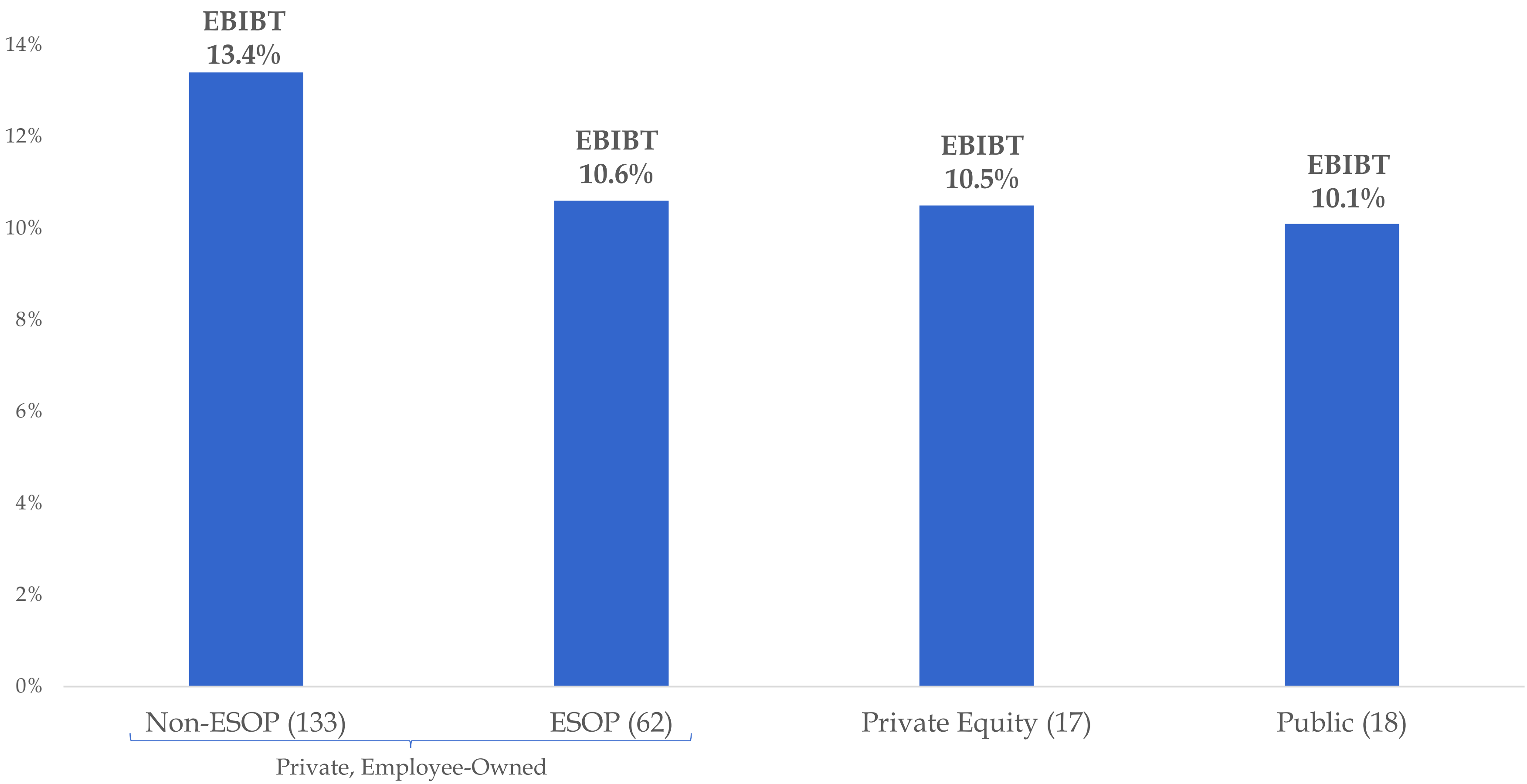



- Ski jump effect on margins as well
- The largest firms continue to have lower margins. Why?
- Where are the benefits of consolidation? Or, are there benefits to specialization/niche strategy?

**Data from EFCG's 2018 CFO Conference, except for >$5 Bil firms, which comes from EFCG's 2017 CEO Conf. Survey*

# Profitability by Ownership*: **EBIBT** / Net Revs

*(3-Yr Avgs.; 2016 – 2018*)*

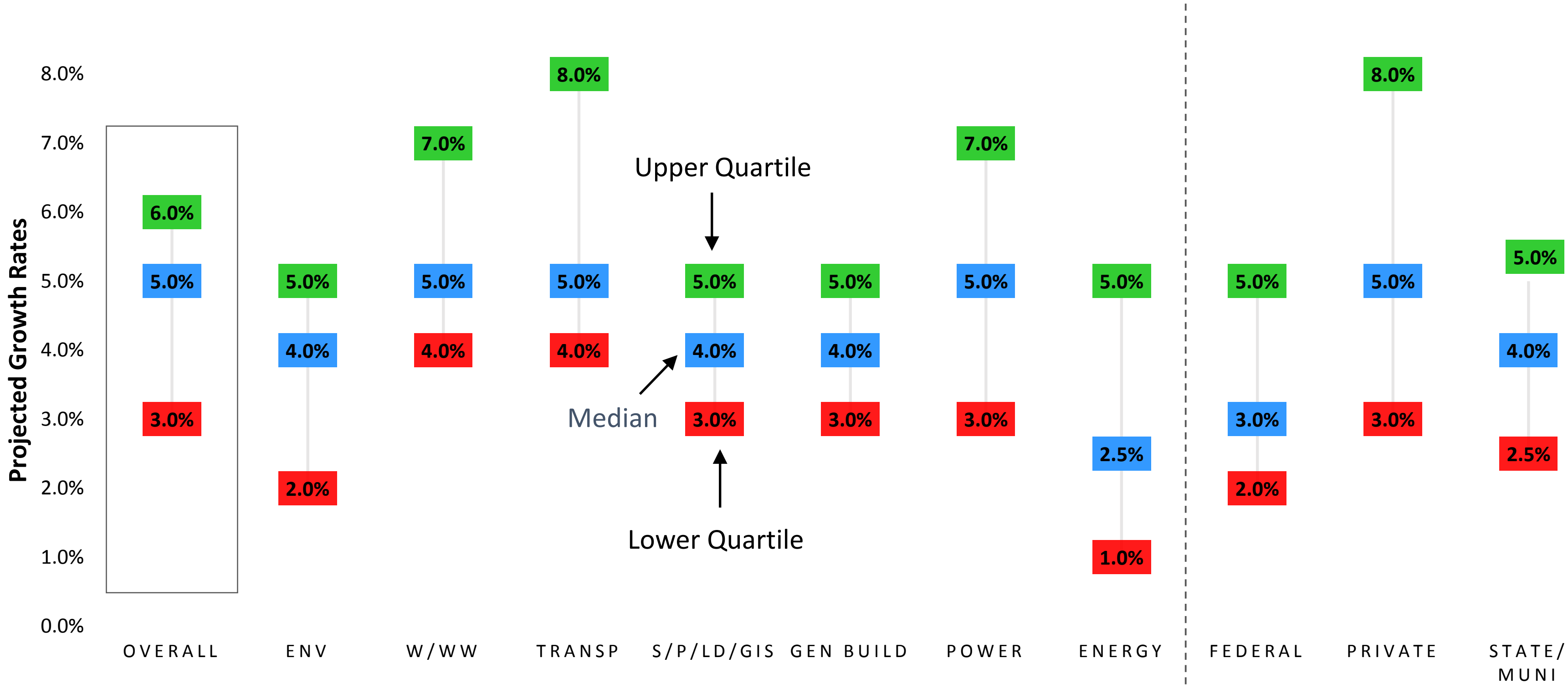



- Non-ESOP, Private Employee-Owned firms most profitable

*Data from 2017 CEO Conf. Survey*

# Sector Growth Rate Expectations for Next Few Years

*(<u>**All**</u> firms reporting for all sectors)*



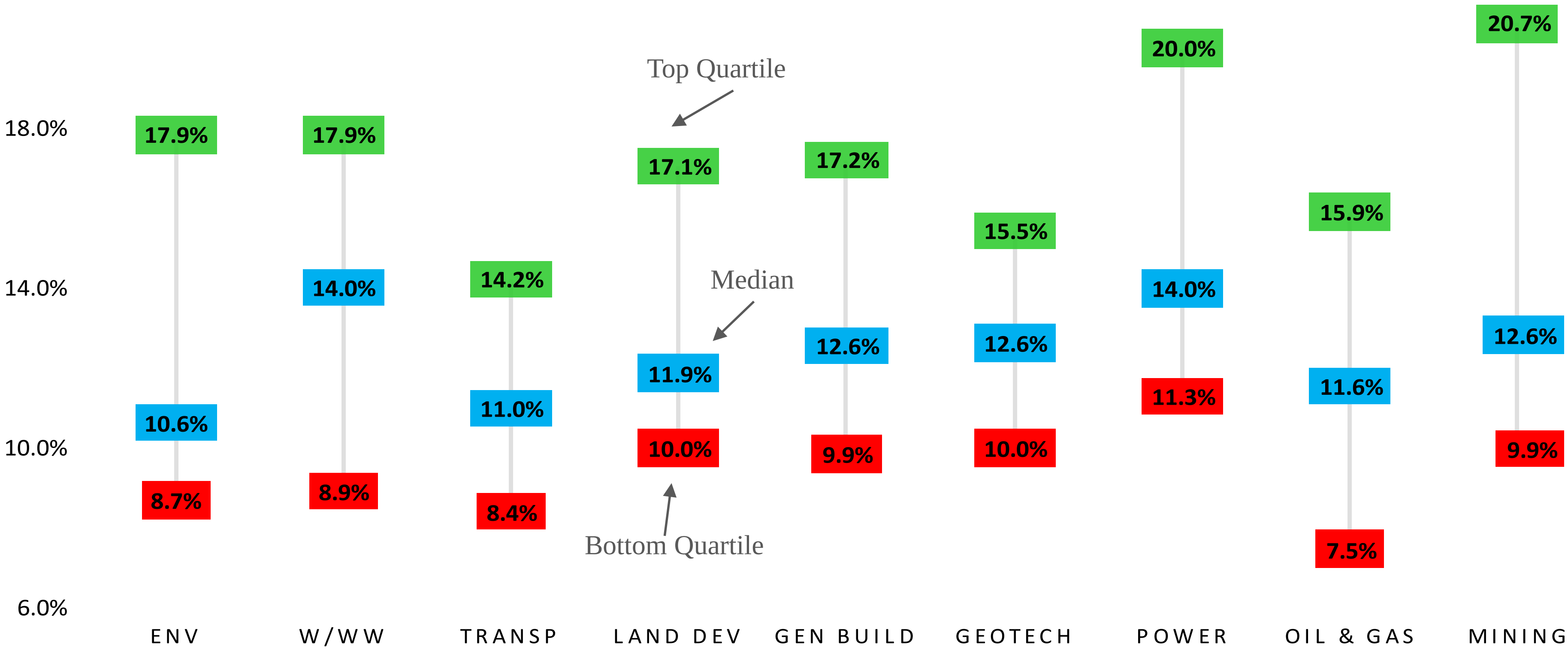

- Not much difference in median growth expectations between sectors (3% - 5%)
- W/WW, Transportation, Power, and Private sectors have a bit stronger expectations than Environmental, Energy, and US Federal

# Profitability Differential by Business Sector*

*(<u>**All**</u> firms reporting for all sectors)*

*EBIBT/Net Revs of your business sectors?*

*[Note: some data may be before allocation of corporate overhead]*




- Difference between top and bottom quartiles <u>within</u> sectors (8%) > difference <u>between</u> sector medians (1.2%)
  - *Better off striving for top quartile performance within a sector than chasing a "hot" sector*
  - *Who should make that argument to gung-ho ("unthinkingly enthusiastic and eager") CEOs?*

**Data from EFCG's 2017 CFO Conf. Survey*

# Hot & Cold Analysis*

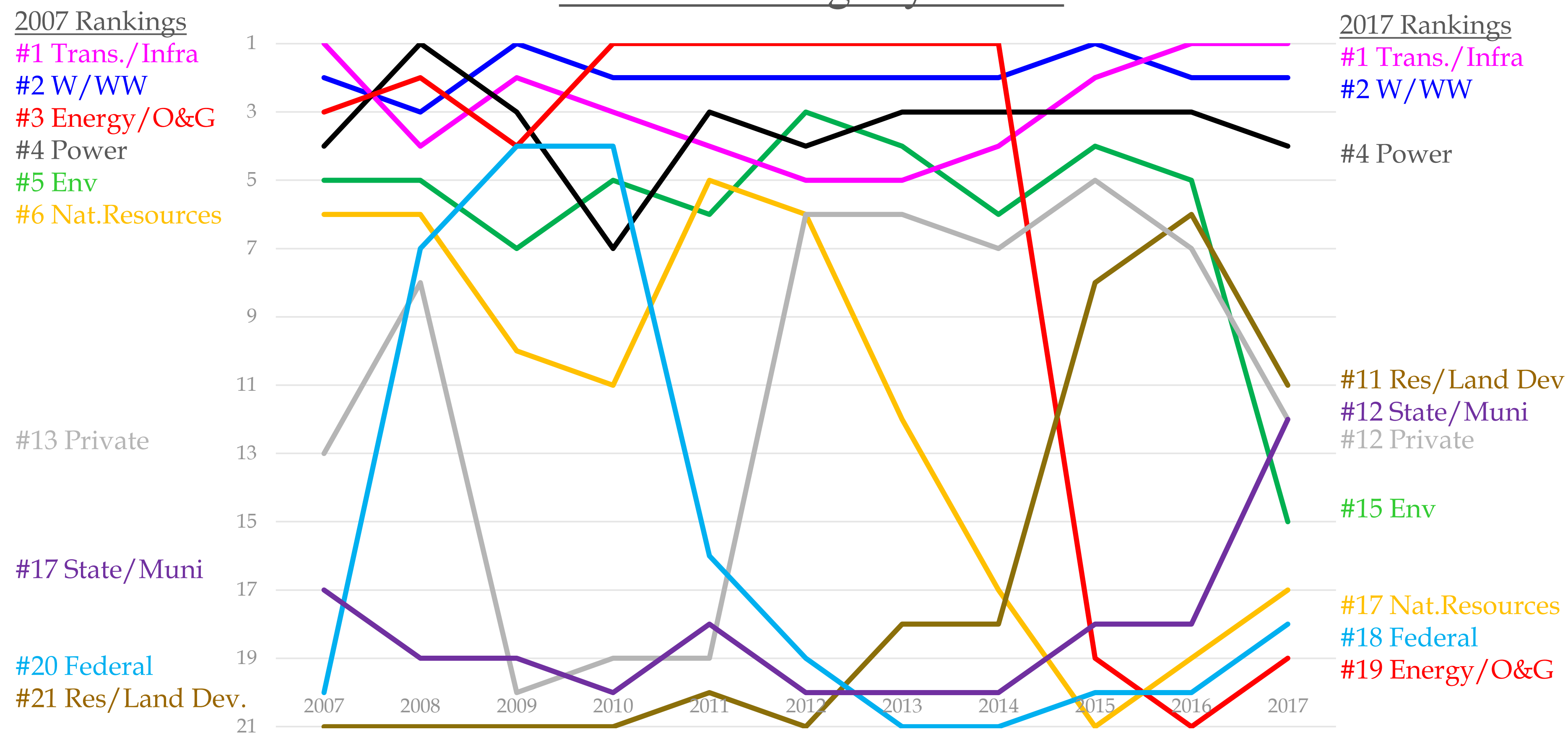
## *CEO Opinion Poll* *(sorted by 2017 "Net Positive Votes")*

| | 2017 | | | |
|---|---|---|---|---|
| | **Best** | **Worst** | **Net Positive** | **Change from 2016** |
| Transport/Infrastructure | 111 | 6 | **105** | **27** |
| Water/WW | 59 | 1 | **58** | **15** |
| Healthcare/Pharmaceutical | 11 | 1 | **10** | 3 |
| Power | 12 | 6 | 6 | **-19** |
| CM / PM | 7 | 1 | 6 | **5** |
| Sustainability/Resiliency | 6 | 0 | 6 | **3** |
| Technology | 5 | 0 | 5 | **5** ← **New** |
| Renewable / Clean Energy | 6 | 2 | 4 | **-9** |
| P3 | 4 | 0 | 4 | **1** |
| Industrial/Commercial Development | 2 | 0 | 2 | **4** |
| Residential/Land Development | 8 | 7 | 1 | **-9** |
| Municipal | 6 | 6 | 0 | **5** |
| Private Customer | 1 | 1 | 0 | **-9** |
| Buildings | 6 | 11 | -5 | **-12** |
| Remediation | 2 | 8 | -6 | **-7** |
| Environmental | 19 | 24 | -5 | **-17** |
| Retail | 0 | 10 | **-10** | **-10** |
| Nat. Resources/Mining | 3 | 15 | **-12** | **1** |
| Federal | 1 | 20 | **-19** | **-2** |
| Energy / O&G | 23 | 63 | **-40** | **11** |

**Data from EFCG's 2017 CEO Conf. Survey*

# Hot & Cold Analysis: 10-Year Perspective*

## Sector Rankings by CEO's




## Top 5 Sectors Over Last 10 Years

| #1 | #2 | #3 | #4 | #5 |
|---|---|---|---|---|
| W/WW | Transport./Infra | Power | Env | Energy/O&G |

*Data from previous EFCG CEO Conference Surveys



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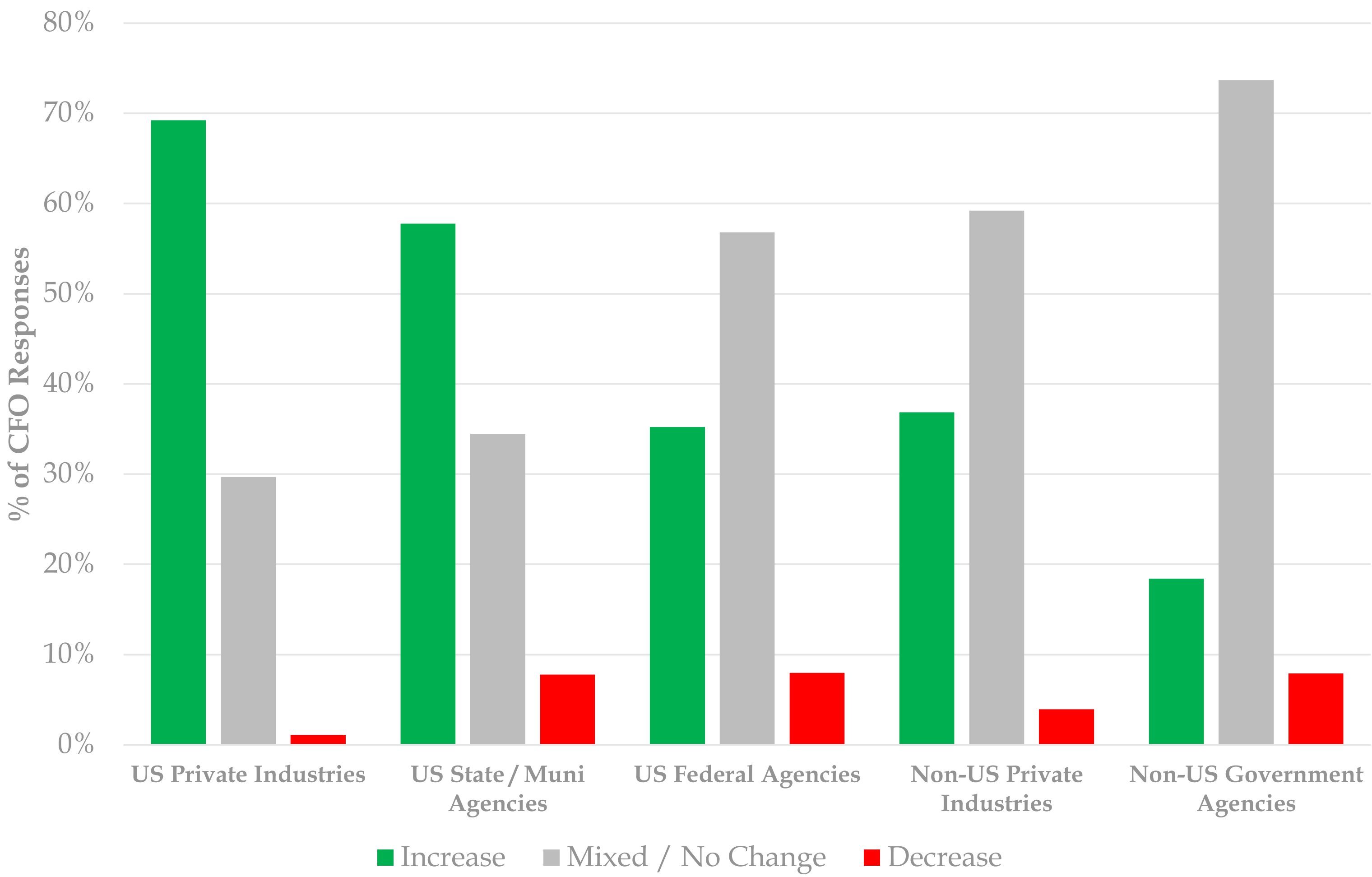
# Client Spending Expectations




- Very positive outlook for US private sector and state / muni agencies



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# Growth & Profitability Takeaways

1. **Internal Growth**: Median firm growing @ **4%-6%** since great recession (New Normal?), but **8%** estimate for '18 and '19. Pretty strong performance compared to economy, and if achieved, would return growth to pre-great recession levels; **Ski-Jump effect of size** with largest firms growing at half the rate of mid-size and smaller firms

2. **Total Growth Outlook**: **More positive** total growth projection over next 5 yrs. (~11%) vs past 5 yrs. (~8%). Just an over-projection? Or better market conditions ahead?

3. **Profit Margins**: **Levelling off at 10%-12%** with **Ski-jump effect of size**; with largest firms having lower margins—where are consolidation economies of scale? How do we improve from here?

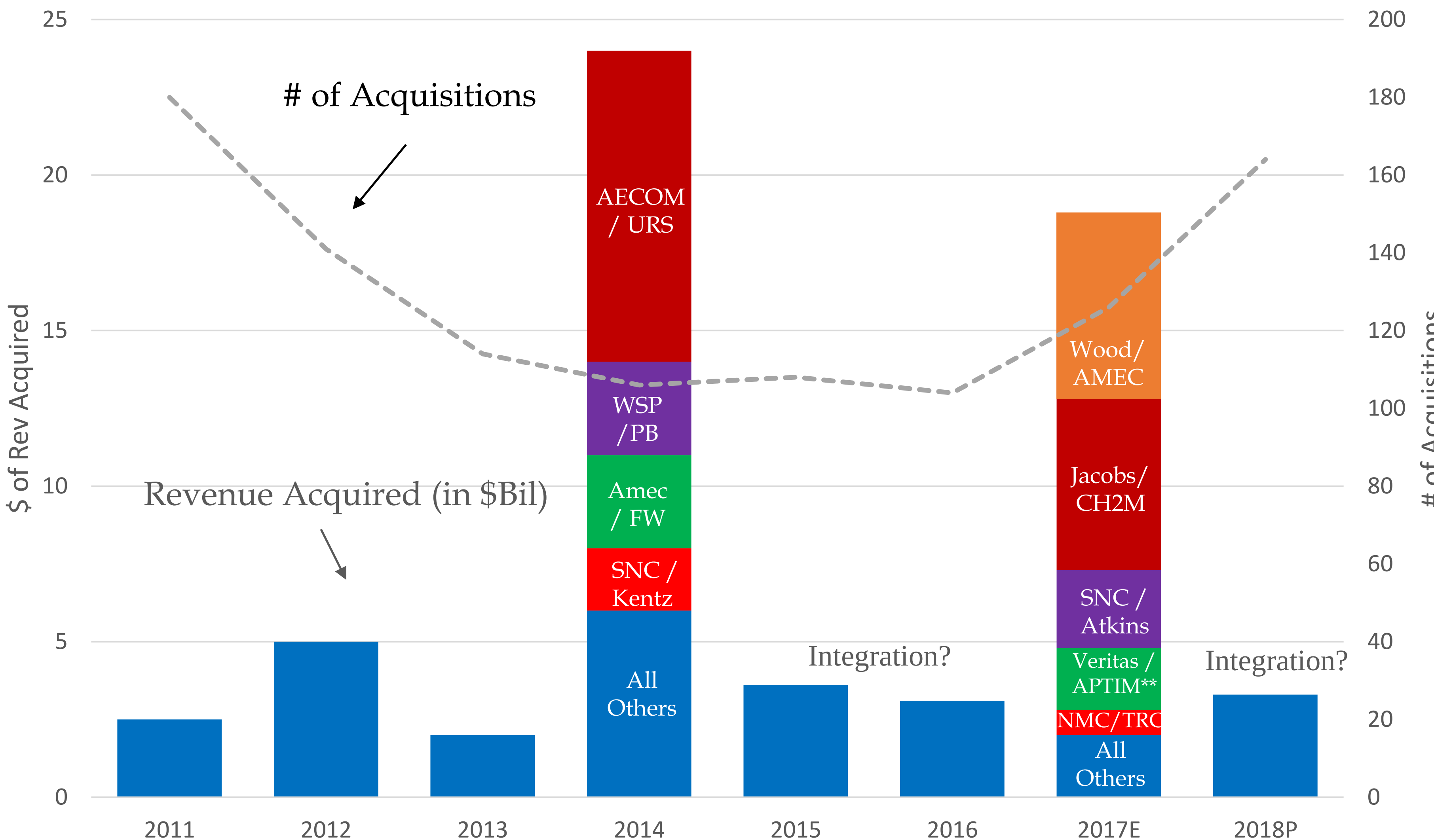
4. **Best/Worst Sectors**: Perception of **Transportation** & **Water/Wastewater** as strongest; Oil & Gas/Mining & Environmental comparatively weaker, but sector conditions can shift quickly.

# Section III:

## Key Issues and Survey Insights

1. *Consolidation / M&A*
2. *Internal Ownership Transition Challenge*
3. *US Tax Reform*
4. *Employee Turnover and Diversity*
5. *Technology*
6. *Risk Management*
7. *Profitability Management: Productivity & Overhead*
8. *Balance Sheet Management*
9. *Balancing Growth & Profitability*

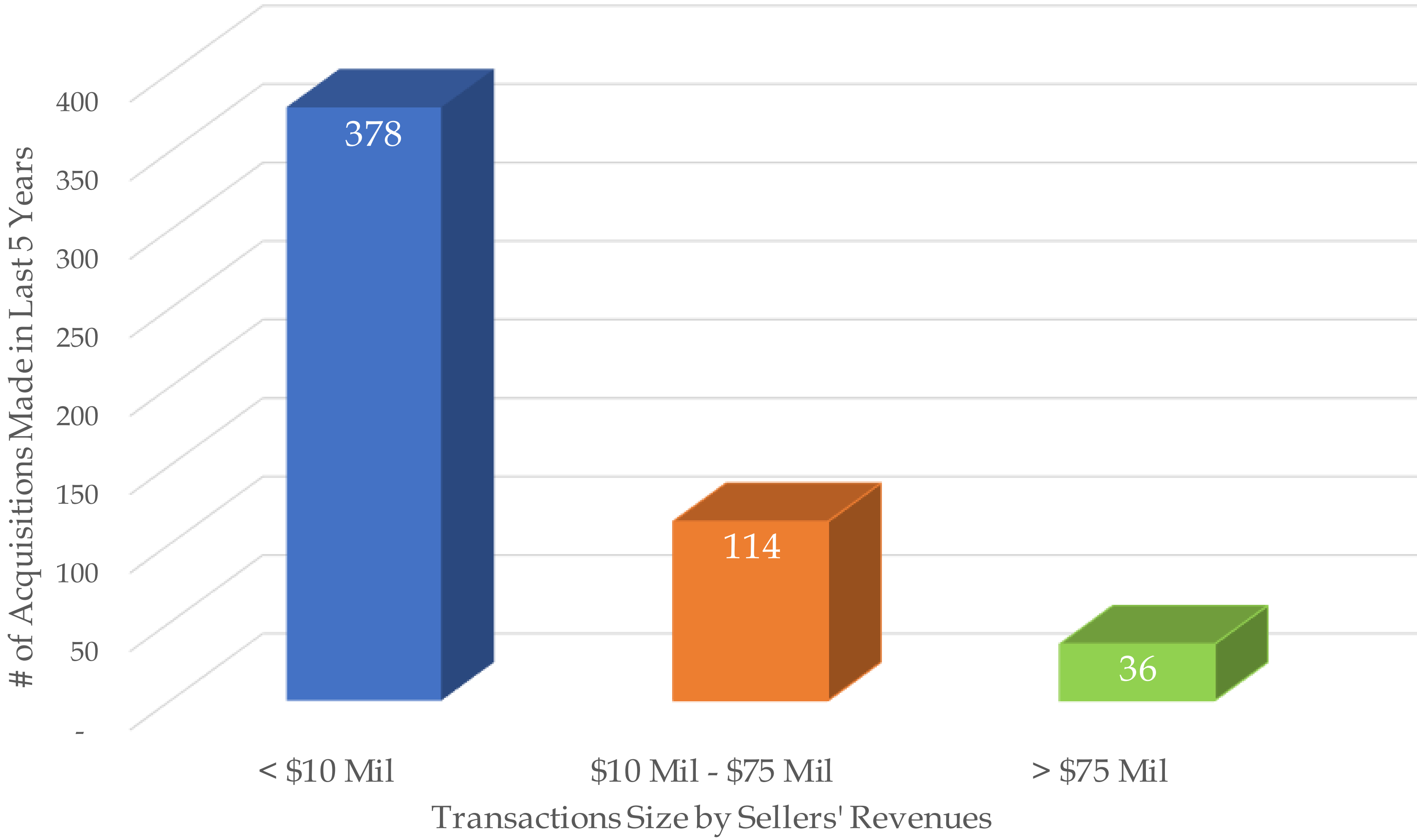
# M&A Activity*




- Lots of activity and increasing: 2017 a major year, like 2014

**Based on 230 firms attending EFCG's 2017 CEO Conference; **CB&I's spinoff of ex-Shaw and Stone & Webster businesses (now called APTIM) to Veritas Capital*

# Size of M&A Transactions *(528 transactions by ~200 firms over 5 years)*

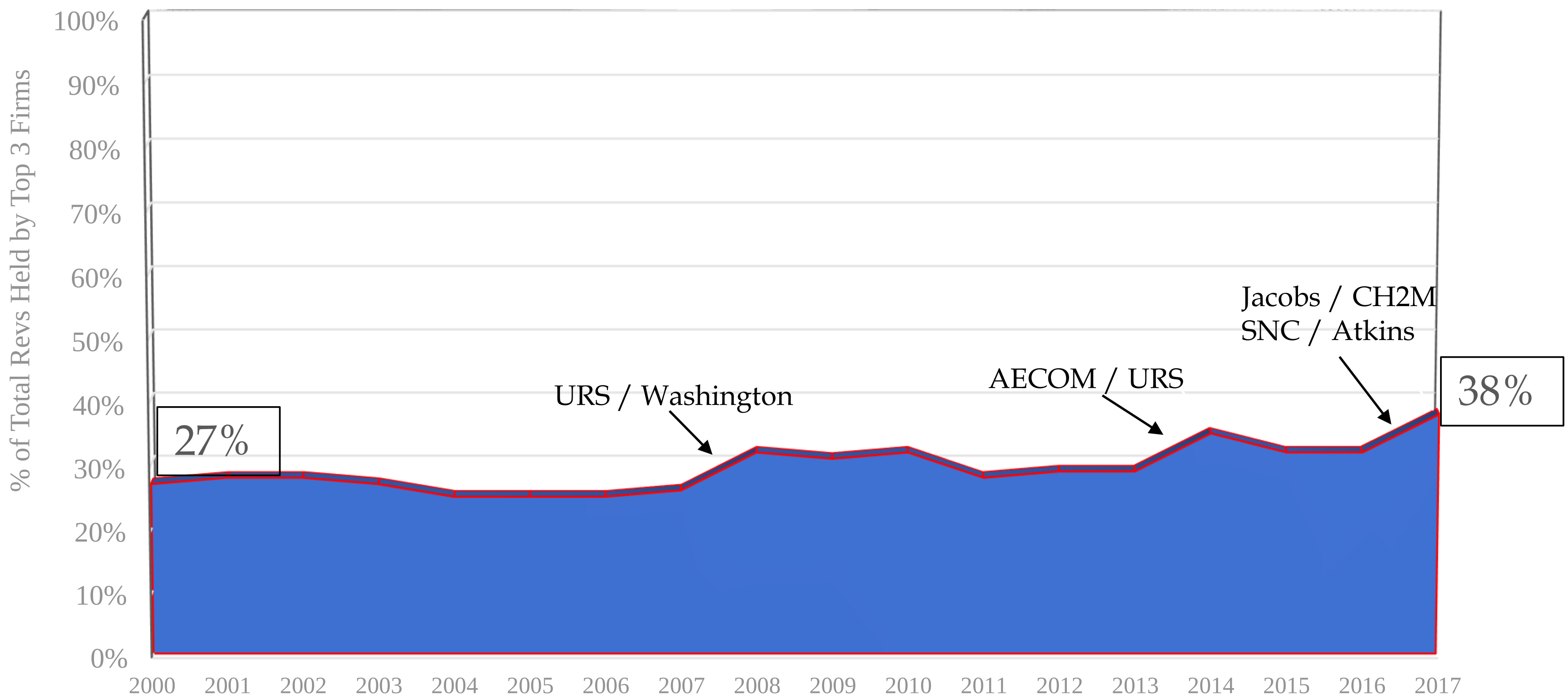



- Mega-deals get the headlines, but ~3/4 of M&A transactions in a/e/c industry involve sellers with $10 Mil or less in revenues; still a fragmented industry at "bottom end"

*Data from EFCG 2016 CEO Conference*

# Industry Consolidation since 2000:

## *Top 3 Market Share**

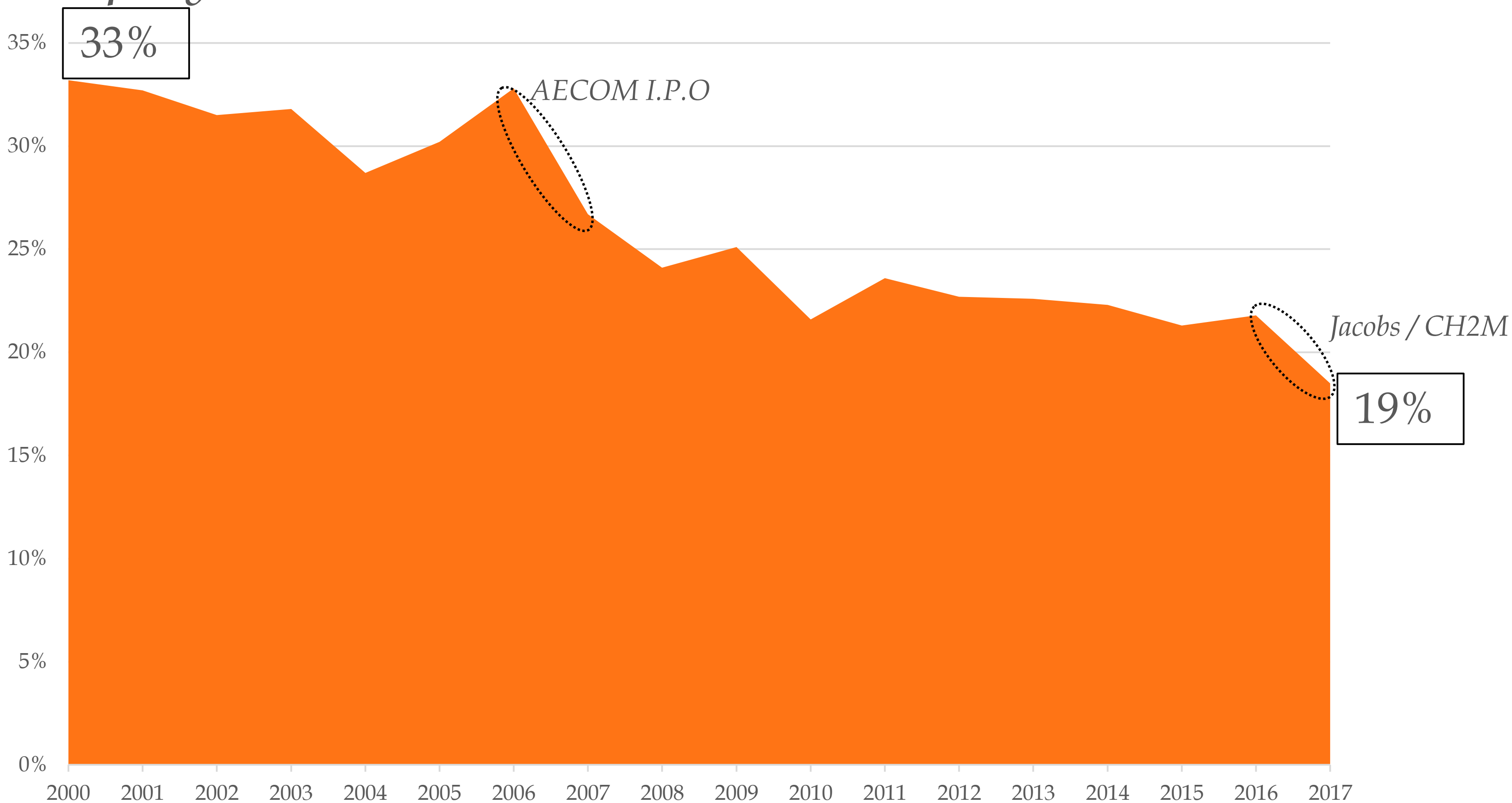



- Some consolidation since 2000 (~11-% pts. for Top 3); again, still a fairly fragmented industry even at "top end"
- Mega firms: lots of acquisitive growth, but not much internal growth since 2009
- How to define A/E/C industry? Vertically integrated major players; data is very "noisy"!!

**Represents % of total revenues at respective EFCG CEO Conferences*

# Industry Consolidation since 2000:

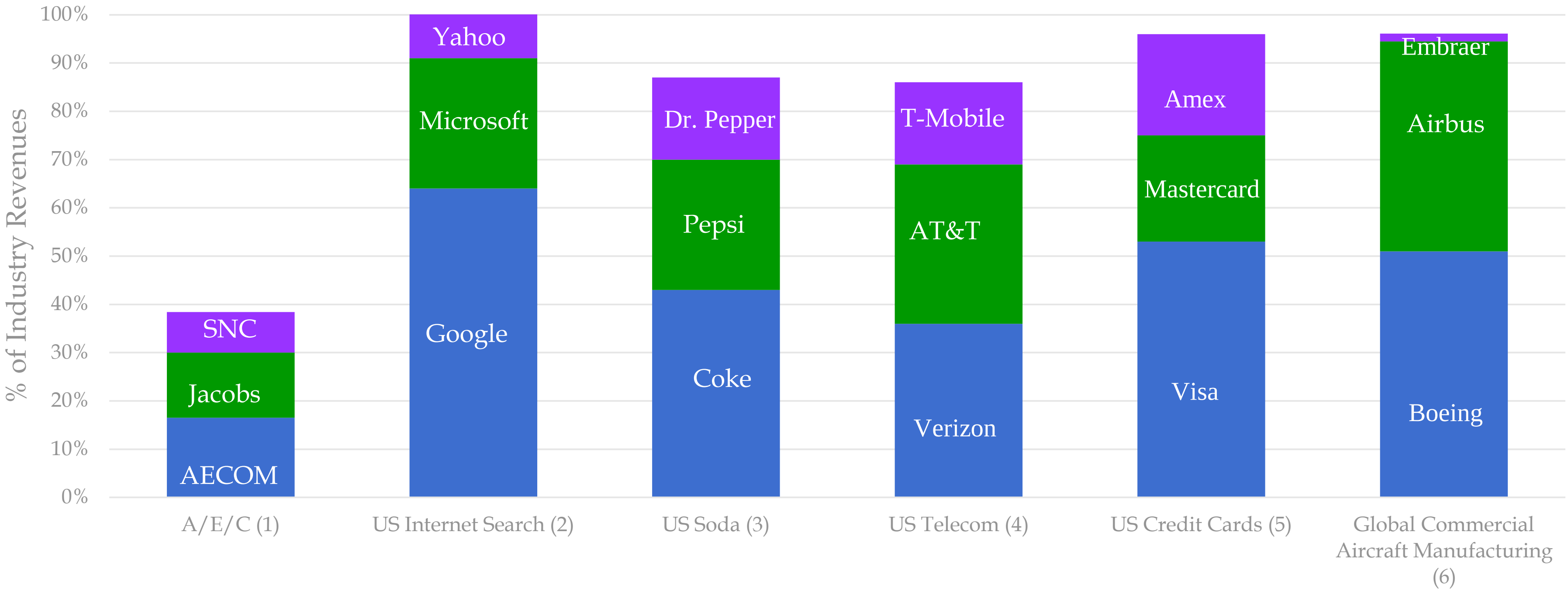
## *Top 10 Employee-Owned / Private Firms' Market Share**




- Market share of top 10 employee-owned firms has declined by ~14-% pts. since 2000
  - ➢ Appears that consolidation has mostly come "at the expense" of large, Employee-Owned firms – are they an "endangered species"?

**Represents % of total revenues at respective EFCG CEO Conferences*

# What Do "Consolidated" Industries Look Like?



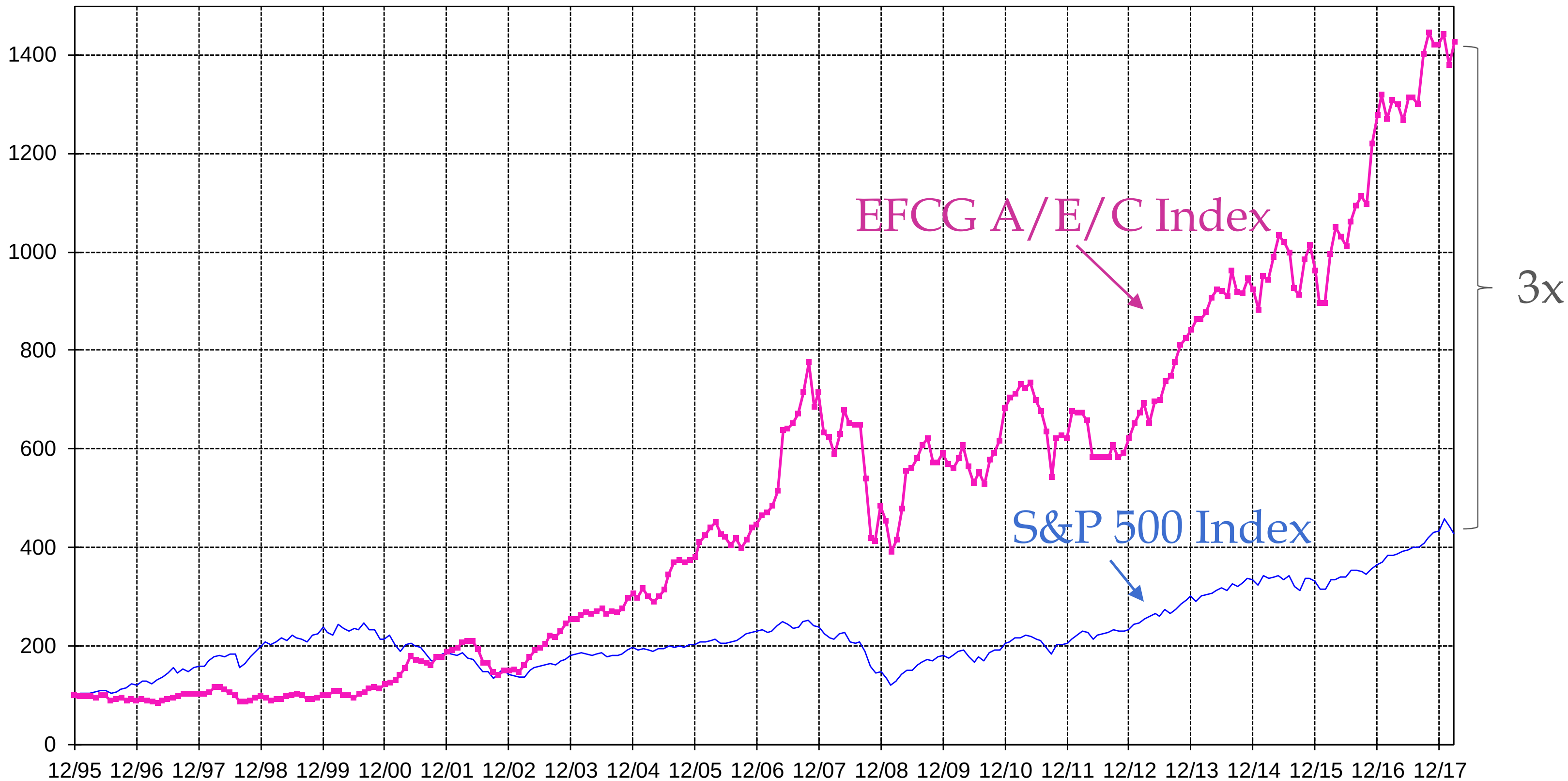

- In "consolidated" industries, the top 3 firms typically control 80% - 100% of the market share
- On the other hand, the A/E/C industry remains fairly "fragmented". Possible reasons include:
  - ➢ Low barriers to entry
  - ➢ Difficulties of scaling up (e.g. high employee turnover at the largest firms)
  - ➢ Lack of apparent economies of scale in terms of current performance metrics

*(1)Per EFCG's 2017 CEO Conf. Survey; (2) Per comScore; (3) & (4) Per Statista ; (5) Per Forbes; (6) Per Aviation Week*

# Public Market Stock Prices

## EFCG A/E/C Index vs. S&P 500

*(through March 31, 2018)*



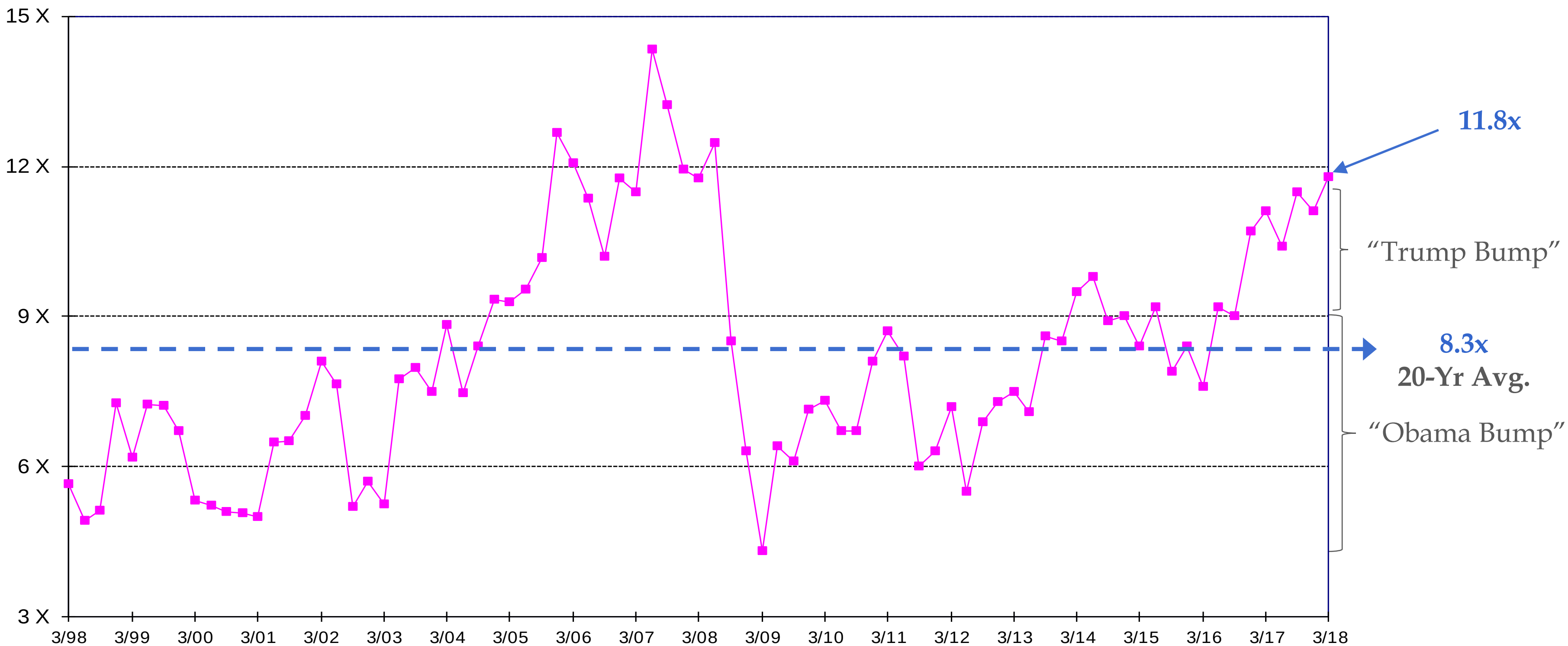

**The EFCG Index is currently made up of 17 Firms: Arcadis, AECOM, Ecology & Environment, ENGlobal, Exponent, Fluor, Hill Int'l, IBI Group, ICF Int'l, Jacobs, KBR, NV5, SNC Lavalin, Stantec, Tetra Tech, Willdan, WSP.*

- Up, up and away!

# Public Markets Valuations

## EFCG A/E/C Index*: *Enterprise Value (EV) / TTM EBITDA*

*(through March 31, 2018)*



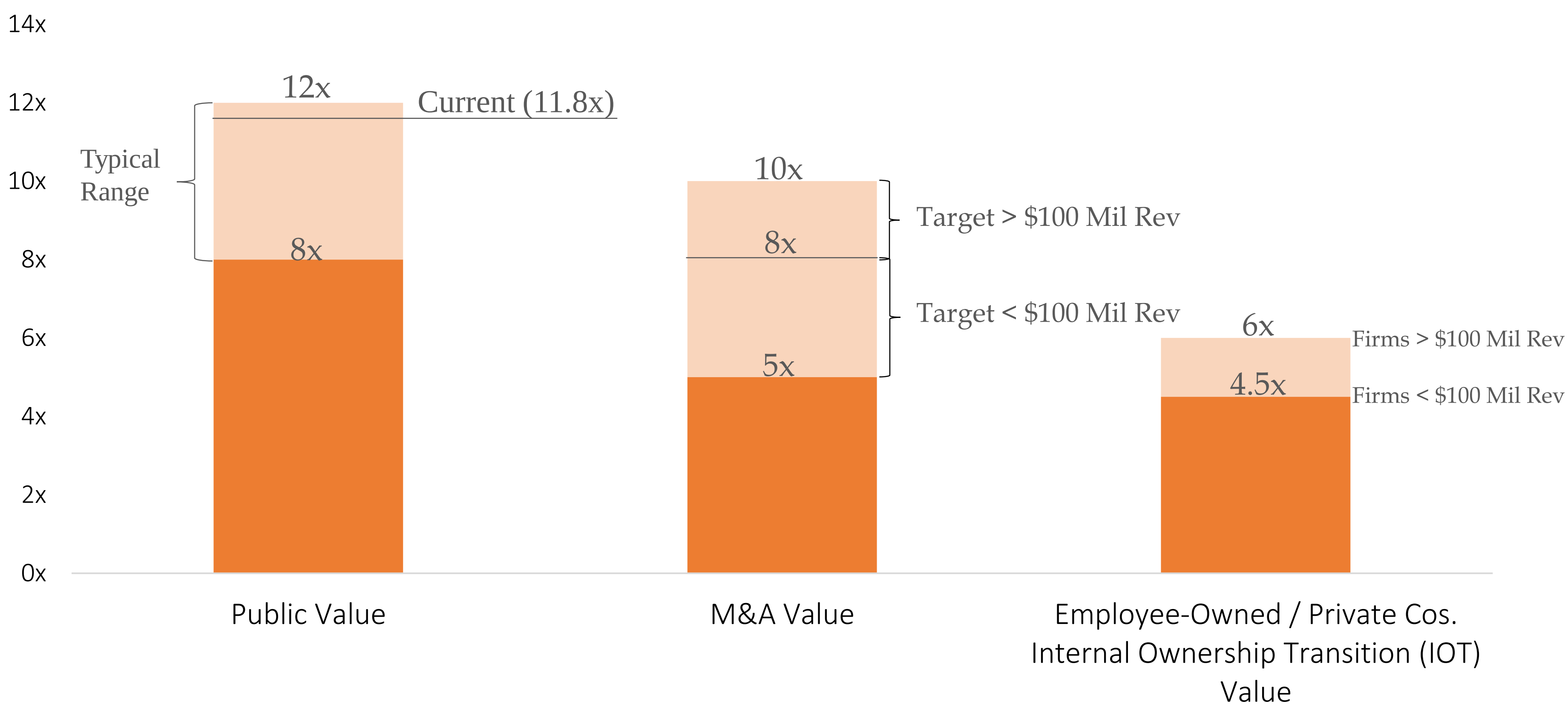

**The EFCG Index is currently made up of 17 Firms: Arcadis, AECOM, Ecology & Environment, ENGlobal, Exponent, Fluor, Hill Int'l, IBI Group, ICF Int'l, Jacobs, KBR, NV5, SNC Lavalin, Stantec, Tetra Tech, Willdan, WSP. The P/E Ratios calculated using trailing twelve months' of earnings as of Dec. 31, 2017*

- **Valuations near 10-year high**: a major driver of recent M&A activity. Is there more downside than upside from here?

# A/E/C Firm Valuation Ownership "Arbitrage"

## Conservative Internal Values of Private Firms Make Them Accretive Acquisition "Targets" for Public Companies

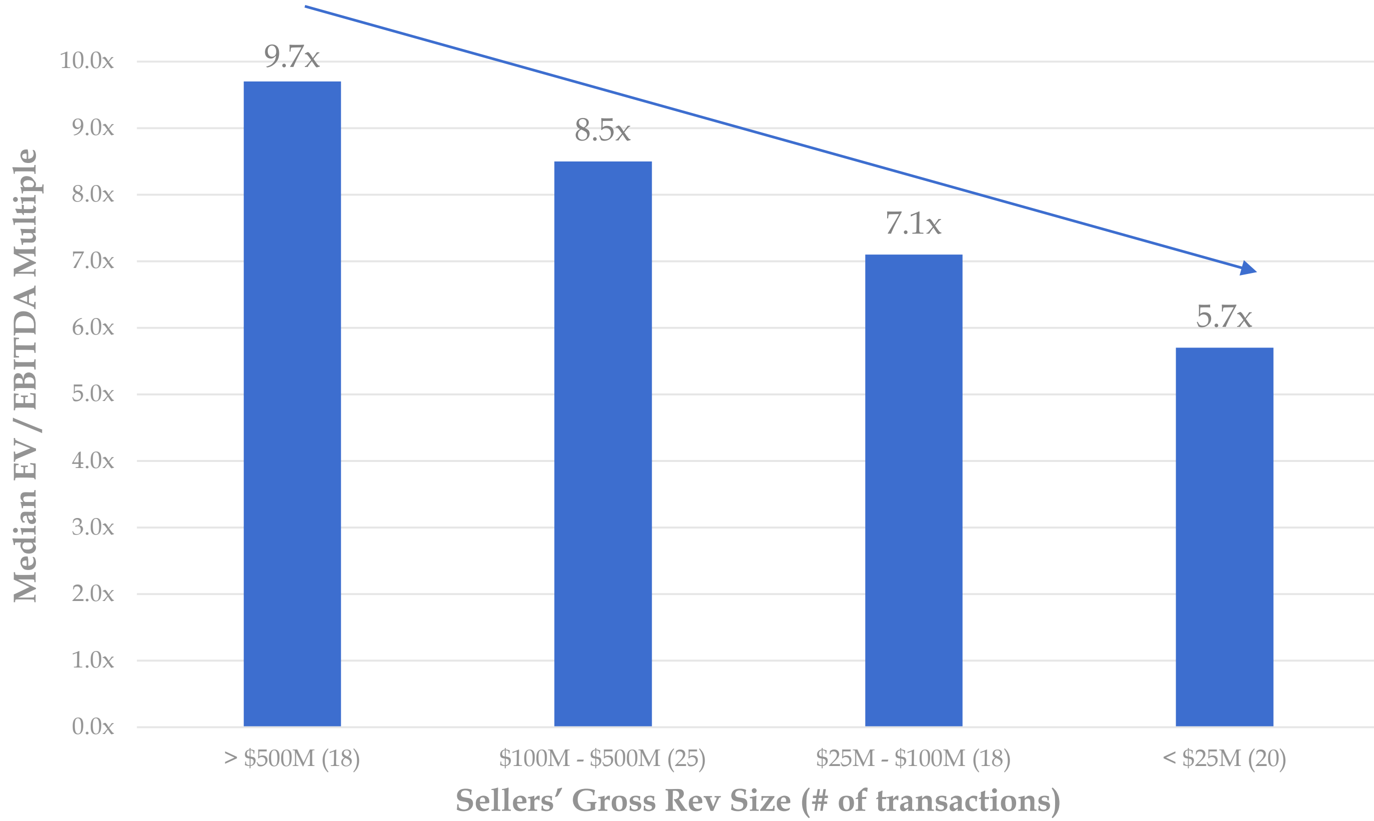
*(Multiples of EV/"Normalized" EBITDA)*




- Valuation arbitrage is before any value creation from M&A synergies ("1+1=3")

# A/E/C Firm Valuation Size "Arbitrage"

*(Multiples of EV/"Normalized" EBITDA; data from 81 transactions over last 4 years)*




- Valuation arbitrage by size enables larger firms to make accretive acquisitions of smaller firms before any synergies
- *Note: there are many factors besides size that influence valuations, including: strategic and cultural fit, historical and projected earnings growth, attractiveness of services & end markets, strength of management team, etc.*
- *Note also: these are the median multiples of EBITDA, but there is a very wide range!*



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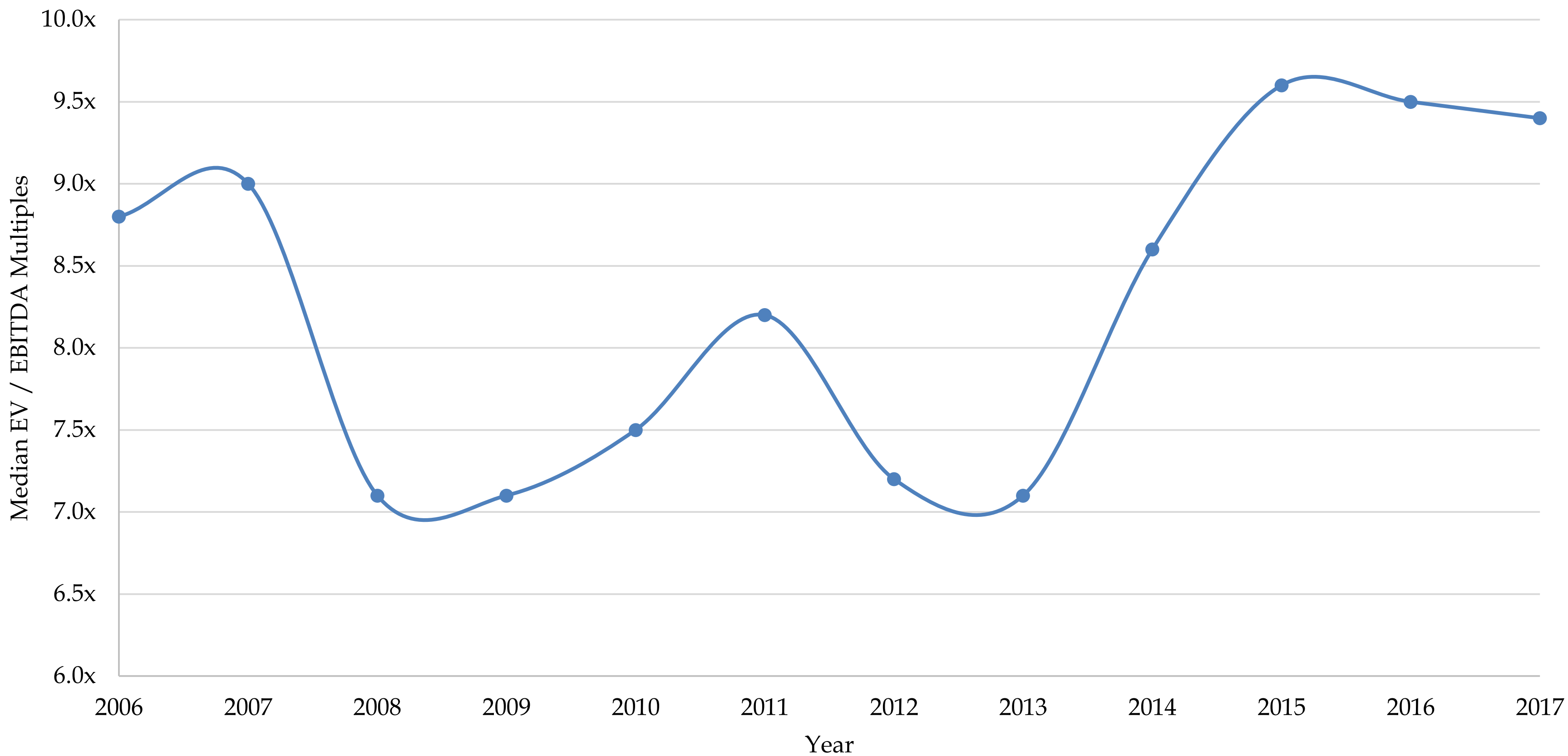
# M&A Valuations Peaking?

*(Median EV / "Normalize" EBITDA Multiples* for Sellers' with* ***Gross Rev > $100 Mil****)*




- M&A Valuations near historic highs, but have we hit a peak?

**Disclaimer: The above data points are medians. M&A EBITDA Multiples are reflective of numerous factors beyond just size of firm, such as: cultural and strategic fit, growth & profitability profile, management team quality and longevity, sector/geography attractiveness, etc.; therefore, the "right" M&A Valuation Multiple for your firm will depend on many variables and will require further inquiry.*

# M&A: "Success" of Deals

## *CEO Opinion Poll*

| | | | Success of Acquisitions over last Five Years | | |
|---|---|---|---|---|---|
| Rev Size of Buyer | # of firms | # of Deals | Successful | Marginally Successful | Poor |
| > $1 Bil | 22 | 233 | 161 | 47 | 25 |
| $250 Mil - $1 Bil | 30 | 123 | 80 | 30 | 13 |
| $100 Mil- $250 Mil | 46 | 108 | 72 | 26 | 10 |
| $50 Mil - $100 Mil | 48 | 42 | 31 | 8 | 3 |
| $25 Mil - $50 Mil | 29 | 15 | 7 | 6 | 2 |
| < $25 Mil | 49 | 7 | 5 | 2 | 0 |
| Sum | 224 | 528 | 356 | 119 | 53 |
| % | | | 67% | 23% | 10% |

90%

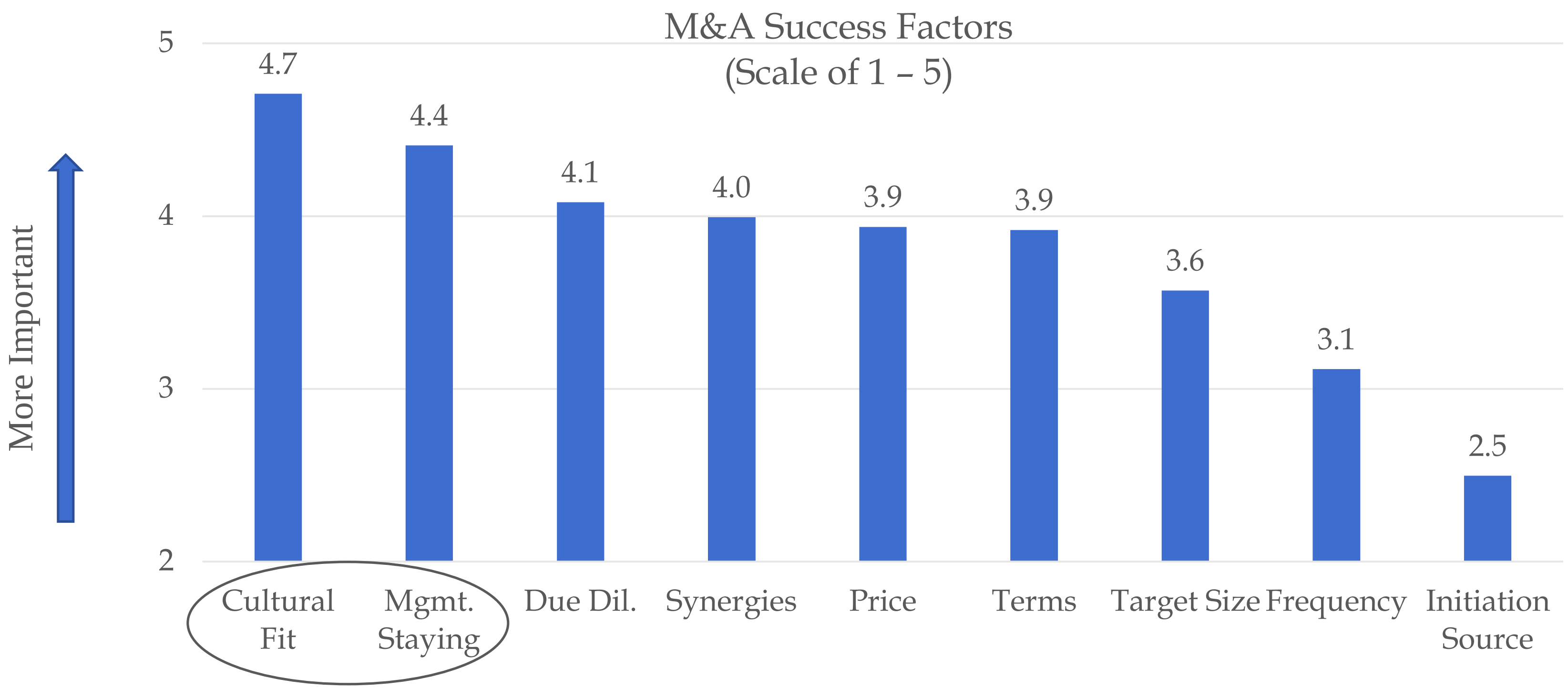
•~90% of transactions Successful or Marginally Successful over last 5 years

•If CEOs perceive so much M&A success, M&A likely to continue

*Data from EFCG 2016 CEO Conference*

# M&A: "Success" Factors

*CEO Opinion Poll (Averages)*



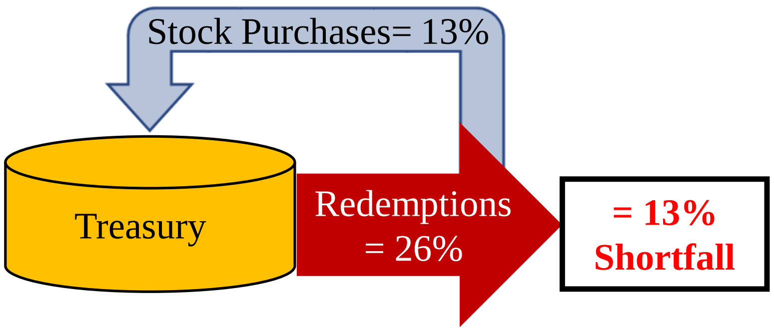

- Since people are the key assets firms acquire, culture and management retention most important
- Price and terms, within reason, not as important to success

*Data from EFCG 2017 CEO Conference*

# Internal Ownership Transition (IOT)

*A major challenge for employee-owned firms. Why?*

## 1 Redemptions Exceed Purchases

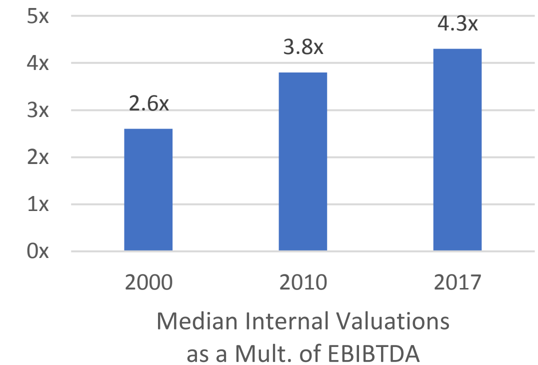



**Data expressed in % of outstanding shares. From 2016 CFO Survey; projected averages for "next 5 years"*

## 2 Capital Constraints

- ✓ Lower profit margins for a/e/c firms vs. other industries
- ✓ Significant working capital needs
- ✓ Other key expenditures (e.g. M&A)

## 3 Valuations Increased Over Time




## Valuation Conundrum

**"Fairness" vs. "Affordability"**

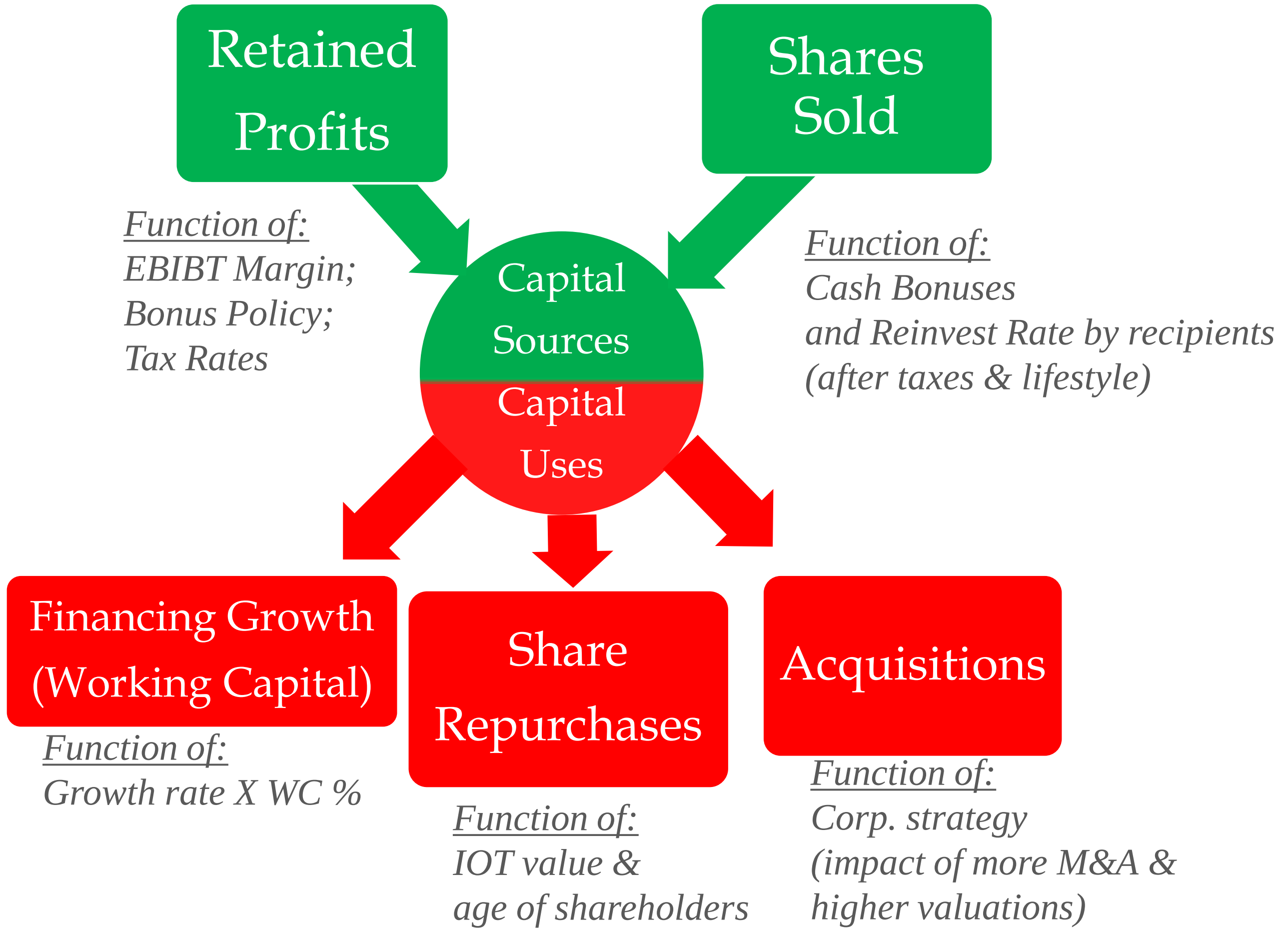
*(Higher vs. Lower)*

- Lower may be "unfair", incentivize a sale, and make acqs less financially efficient
- Higher make share repurchase more difficult
- Getting the right balance
- No "right" answer: Your approach to valuation needs to be strategic

- The biggest reason private/e-o firms "sell out" is because they can't fund their IOT

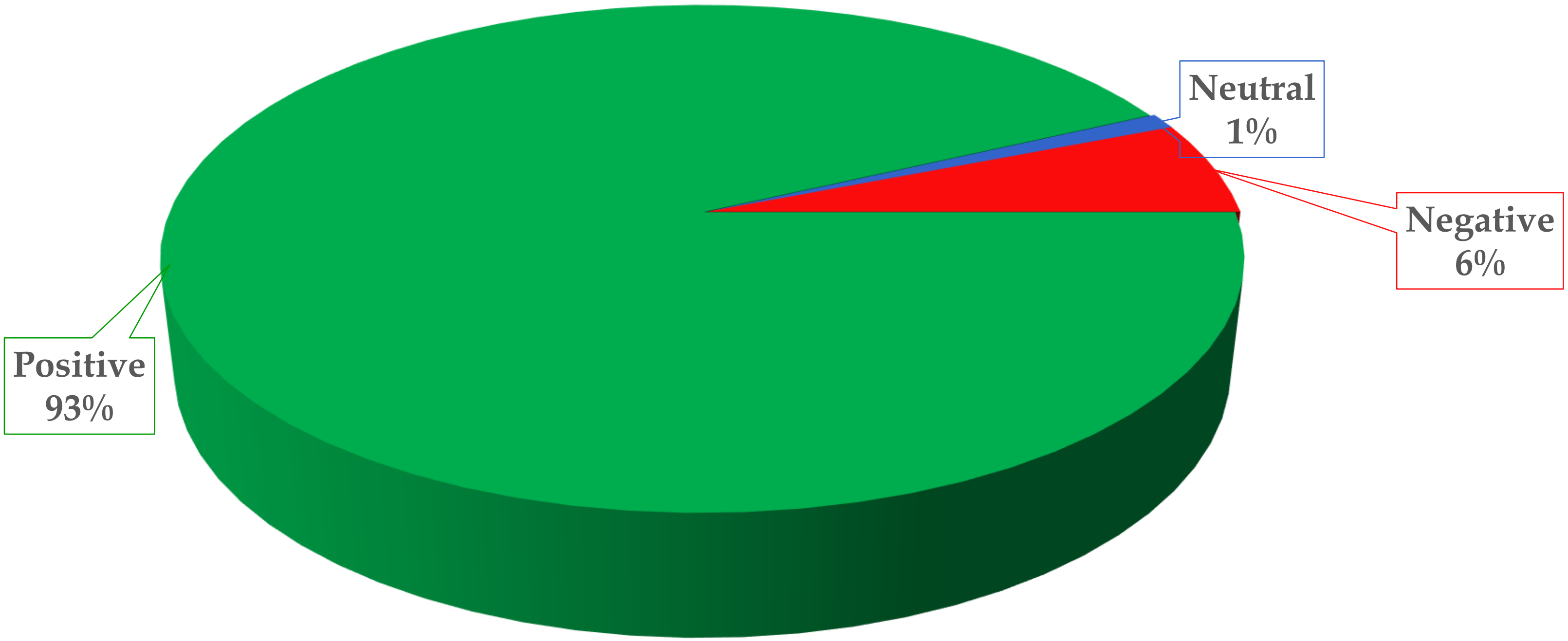
# IOT Planning Tool: "Capital Flows" Model

## The balance of Sources of Capital and Uses of Capital




- Recommend: Cumulative 5-Year "Capital Flows" Analysis as part of your Ownership, Capitalization and Compensation Plan ("OCCP")
- Key is not just "profit," but whether Capital Sources cover Capital Uses

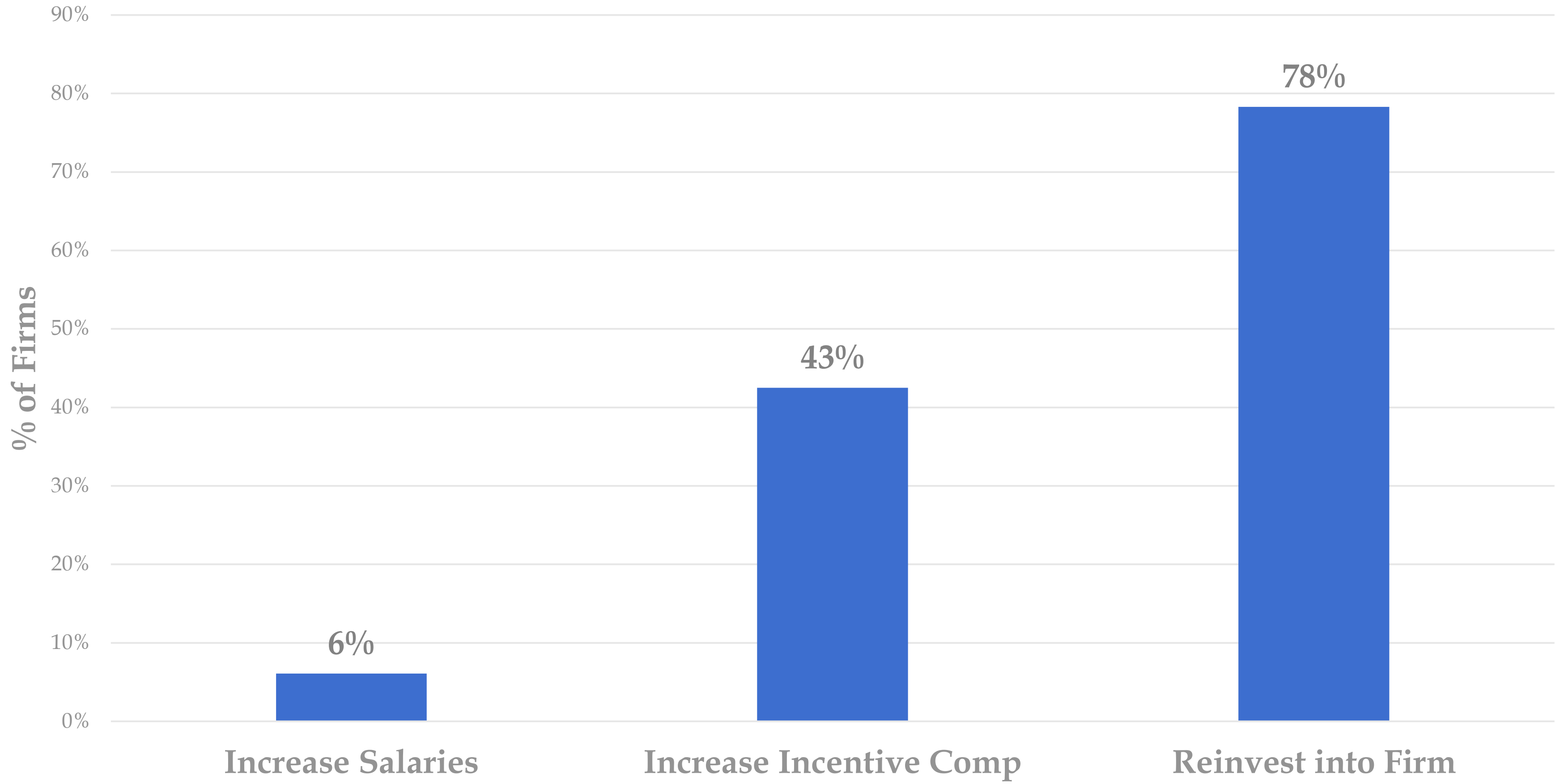
# Impact of US Tax Reform on A/E/C Firms




- Overwhelming positive view of US Tax Reform
    - Lower tax rates and immediate expensing of capital assets expected to increase earnings / cash flow for most a/e/c firms, and increase client spending
- Not much on the negative side, but…
    - Lower tax rates may lessen ESOPs tax advantage; internal stock prices may increase (?!); may be less investment in renewables; BEAT tax; transition tax; elimination of 199 deduction
- 6 Firms considering a change to C-Corp from S-Corp

*Data from EFCG 2018 CFO Conference*

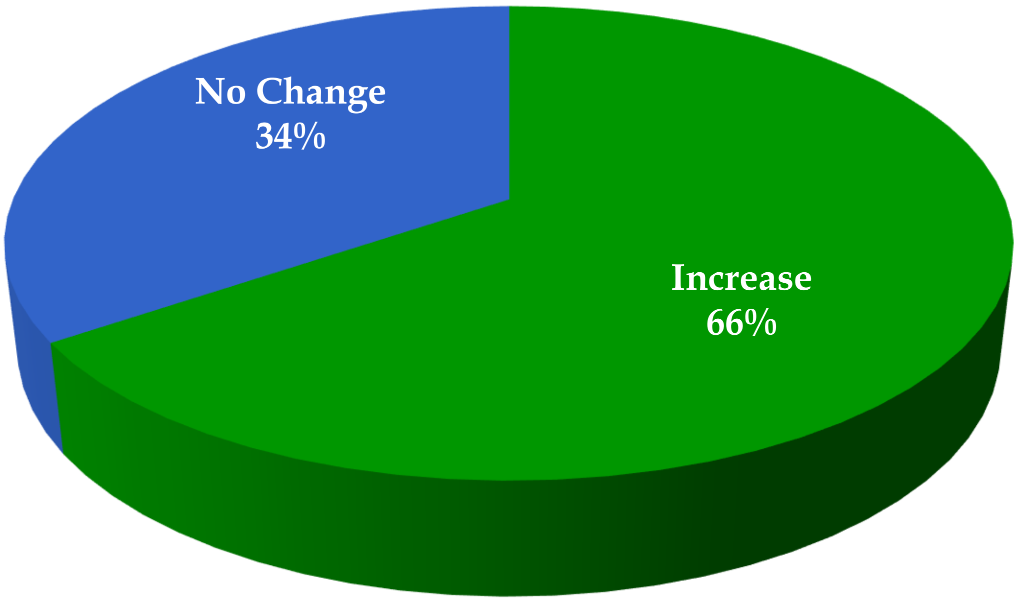
# What will A/E/C Firms do with Tax Savings?




- Firms are planning to reinvest though M&A (22 firms), new offices (10), R&D / Technology (5), strategic hires (4), general recruiting (3), and capital investments (3).
- So, it sounds like we should expect even more M&A activity!

*Data from EFCG 2018 CFO Conference*

# Impact of US Tax Reform on A/E/C Firms' Internal Stock Prices

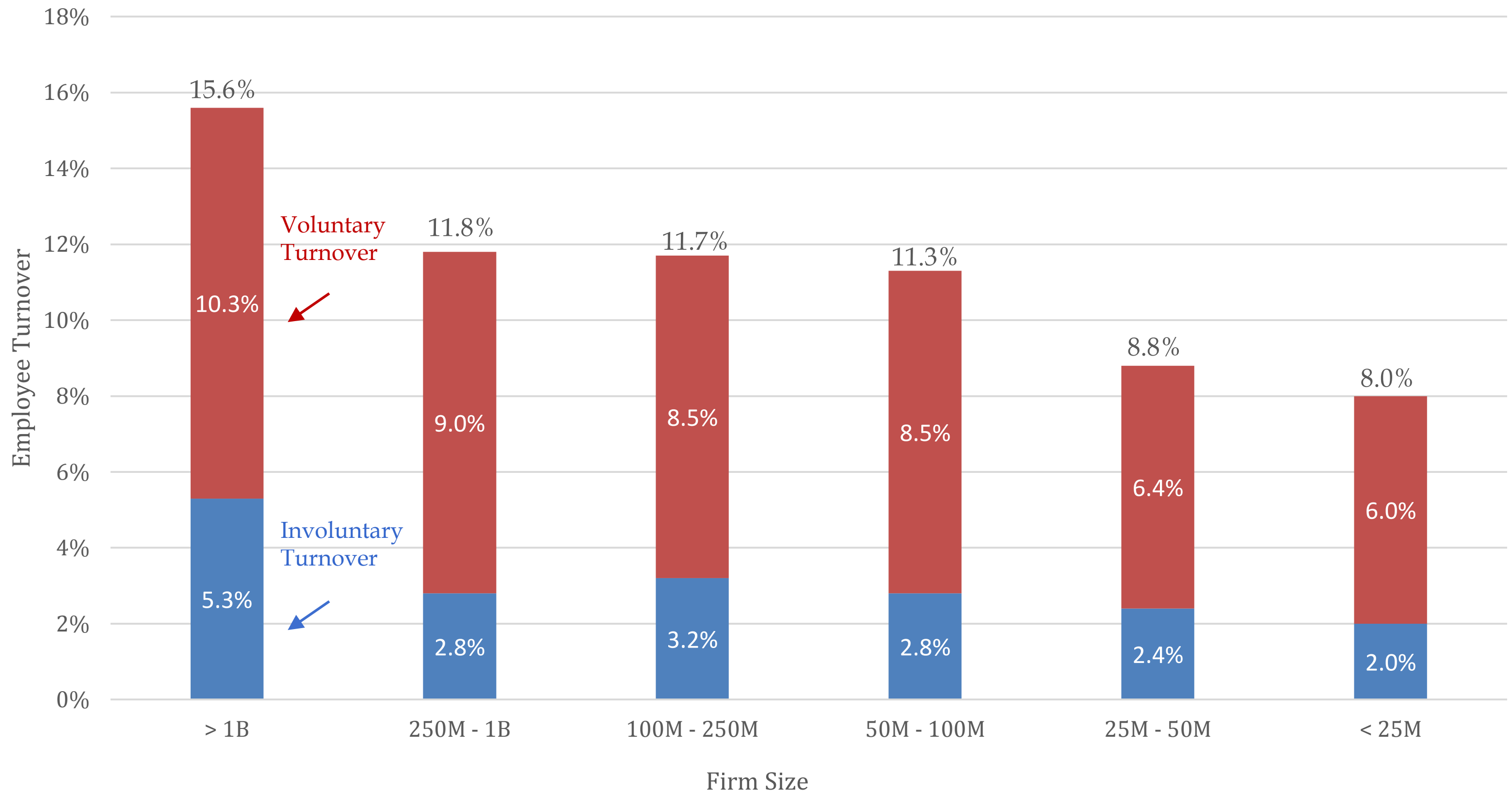



- Positive impact on stock prices due to the following:
  - Reduction in deferred tax liability from cash-basis accounting for taxes (11 votes)
  - Increase in after tax income (11)
    - Increase in DCF Value (5)
  - Increase in M&A multiples (6)
  - Increase in book value due to higher retained earnings (6)
  - Increased investment in growth should lead to higher revenues / earnings (6)

*Data from EFCG 2018 CFO Conference*

# Employee Turnover Analysis by Firm Size

*Over the Last 12 Months**




- Advantage of smaller size?

**Data from EFCG's 2017 CEO Conf. Survey*



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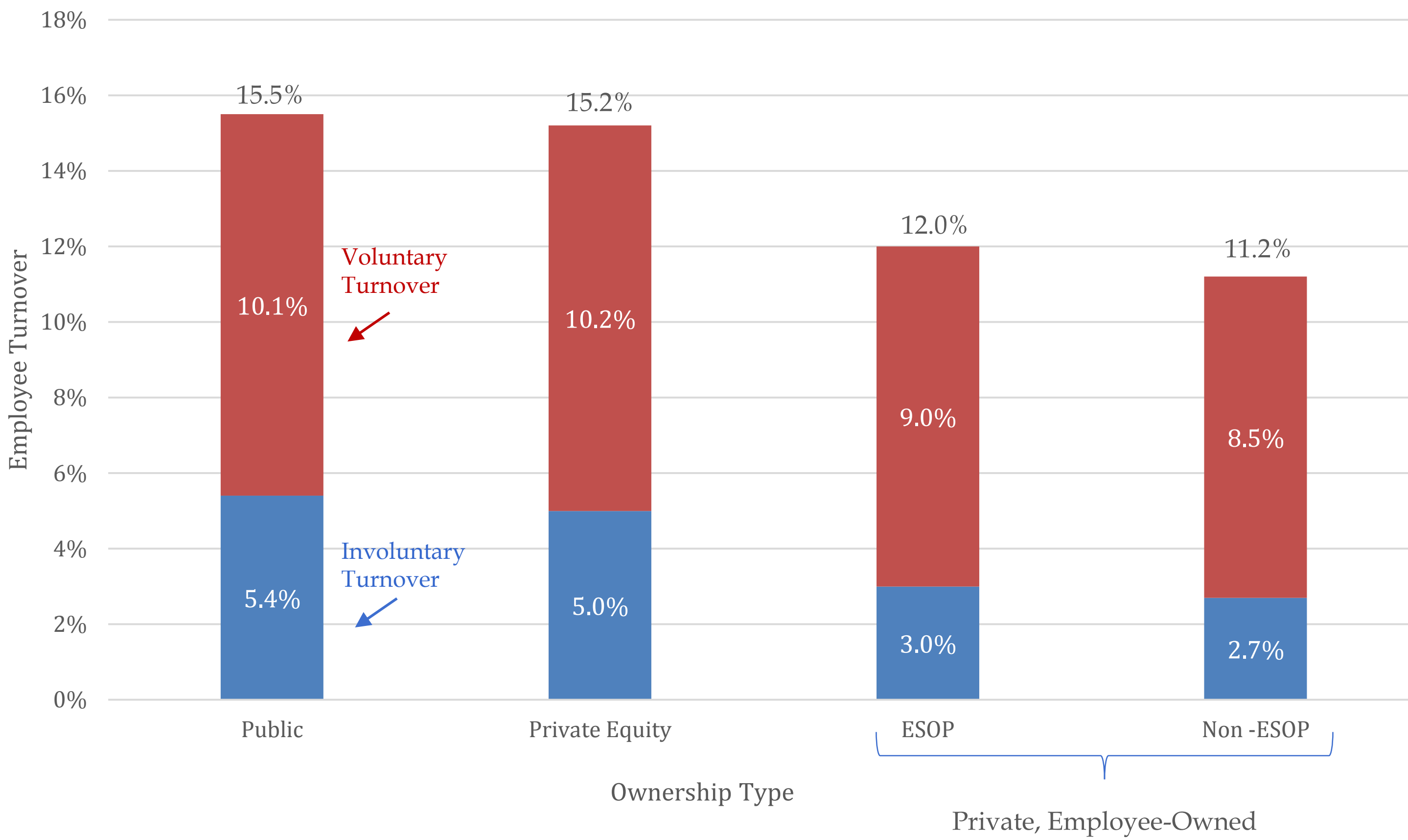
# Employee Turnover Analysis by Ownership*

*Over the Last 12 Months*

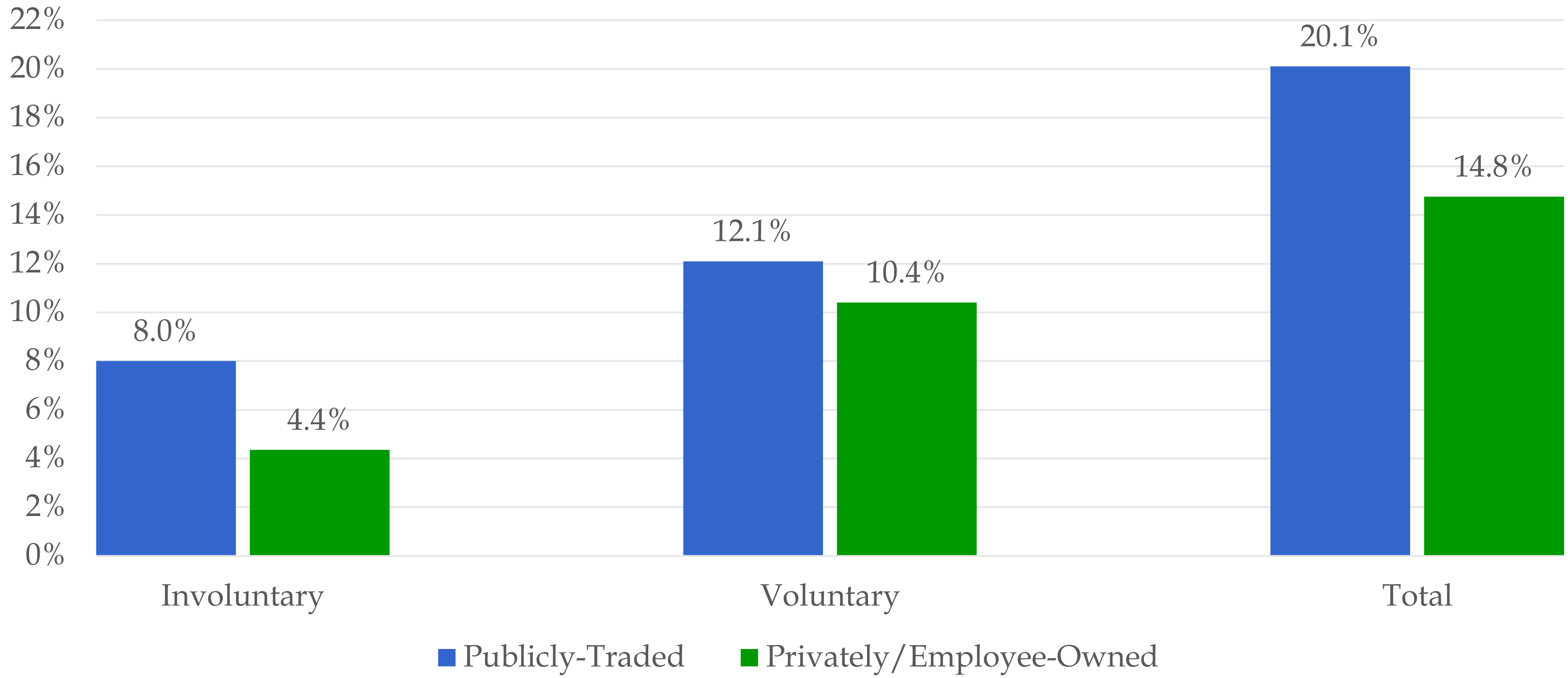



- Why do <u>public</u> firms and <u>private equity-owned</u> firms have higher turnover?
- Advantage of employee-ownership? Or, is firm size the driver?

*Data from EFCG's 2017 CEO Conf. Survey*

# >$1 Bil Firm Employee Turnover*:

## *Publicly-Traded vs. Privately-Owned*

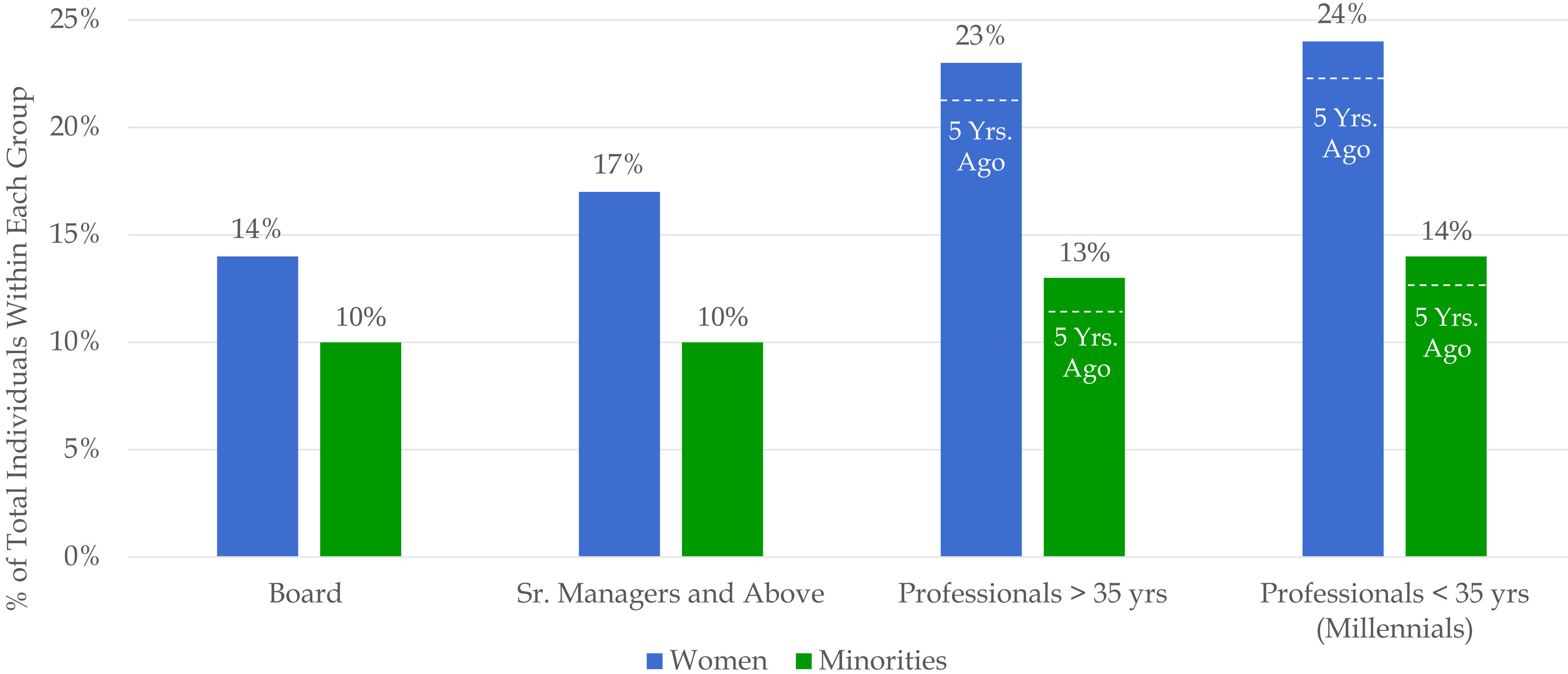



- Large publicly-traded firms have higher total turnover than privately-owned large firms--is there a "cultural advantage" to private/employee ownership
- "Involuntary" is biggest reason for differential--perhaps due to public companies doing more and larger acquisitions leading to more redundancies? (But, voluntary turnover also higher, though not as much)
- High cost of turnover: estimated at $50k / person at CHRO Conf.

**Data from EFCG's 2017 CEO Conf. Survey*

# Employee Diversity*

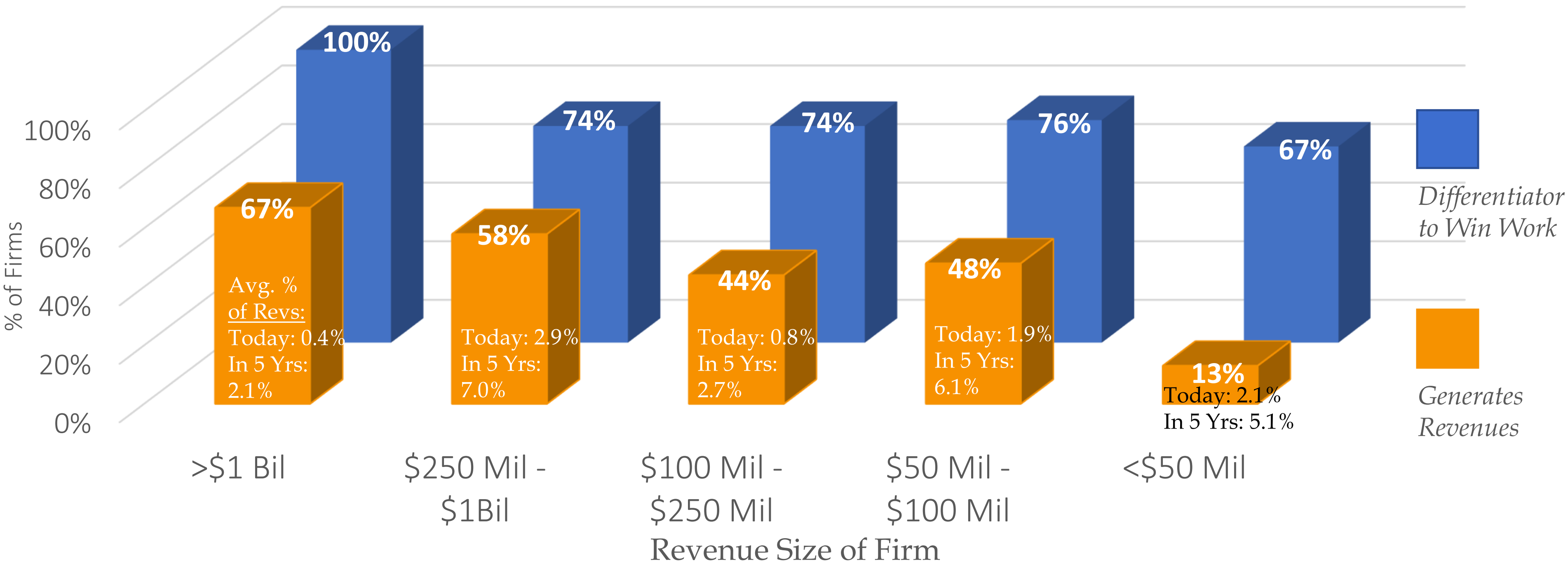
*(Averages)*




- Lack of diversity, and little progress over last 5 years
- Only ~20% of recent US engineering graduates are women**, so difficult to improve significantly without changes at the university level
- But, ~24% of recent engineering majors are minorities*, so opportunity for improvement
- What can we do to improve? EFCG is looking to develop diversity improvement metrics – you can only manage what you can measure

**Per EFCG's 2017 CEO Conf. Survey; **Per the National Science Foundation*

# Technology as Differentiator to Win Work & Generate Revs



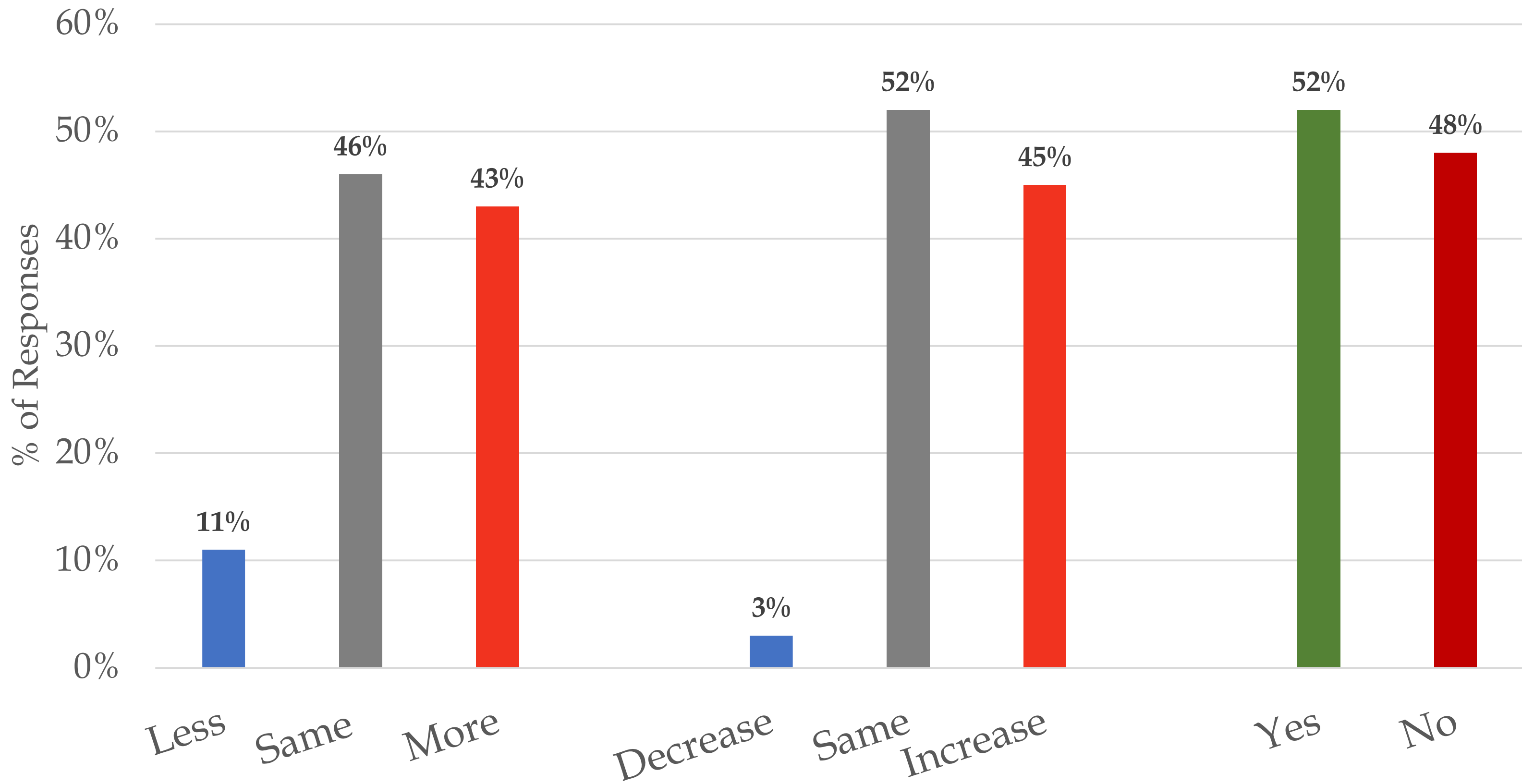

- Majority of firms believe technology is as differentiator to win work
- But more likely to generate revenues for larger firms. Advantage with larger technology budgets?
- If competitive advantage for larger firms, not apparent in relative profitability (yet?)
- Today, technology generates ~0.5% - 3% of revs., depending on firm size, and plan to double or triple in 5 years

*Data from EFCG 2018 CFO Conference*



EFCG

# Alternative Delivery: @ Risk Work




**@ Risk Work:** **Doing More or Less Today vs. 5 Yrs Ago** | **Expect @ Risk Work in 5 Yrs vs. Today** | **Paid Commensurately for Added Risk?**

- Clear trend towards more @ Risk work, and yet only half of firms are paid commensurately for additional risk!
- Imbalance of Risk / Reward = Threat to our industry *(existential threat to several firms recently,e.g. CH2M)*

*Data from EFCG 2018 CFO Conference*



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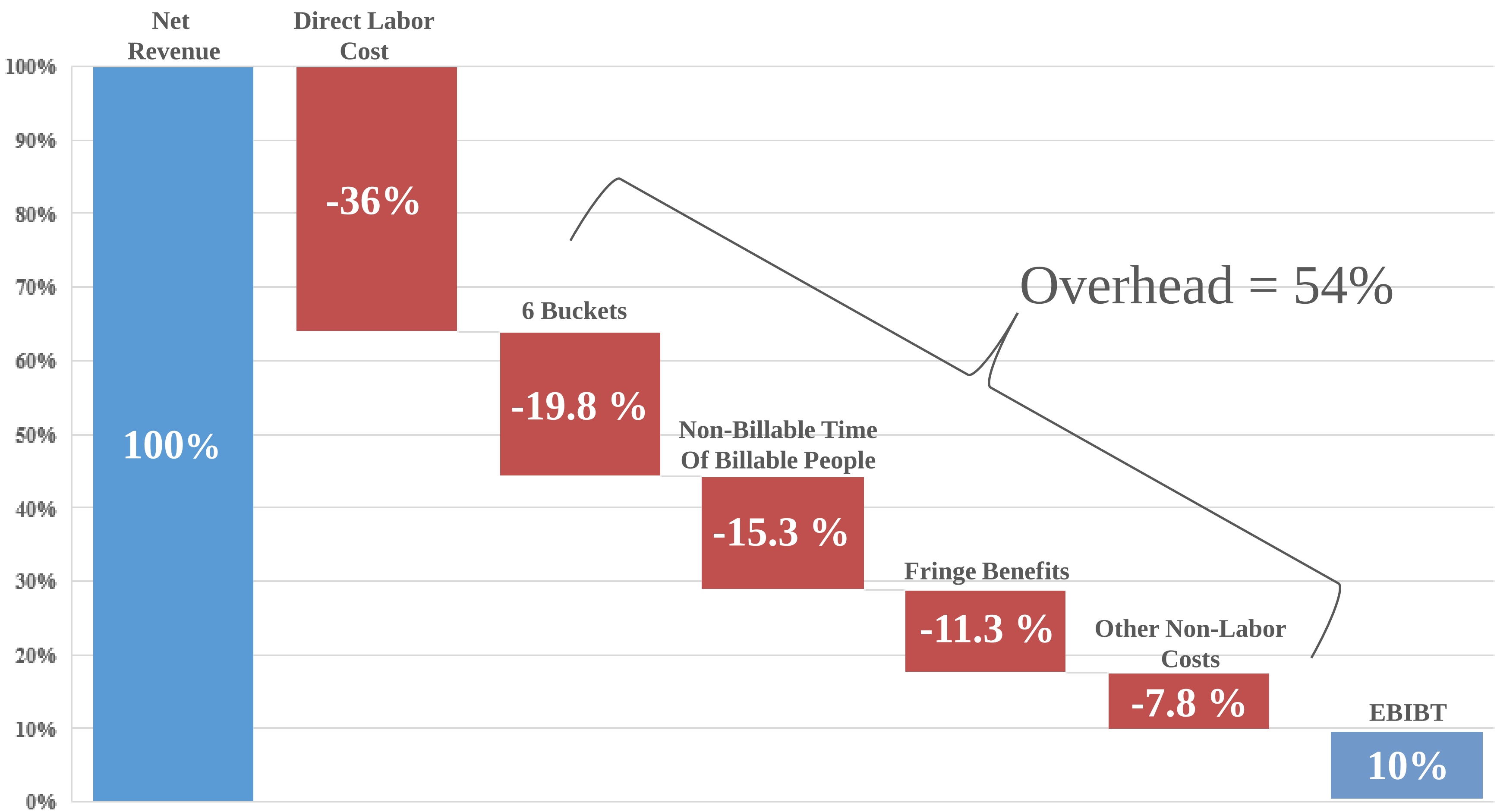
# EFCG Overhead Analysis Summary

*(Data from 2017 CFO Conference; as % of Net Revs)*




- Common Size Income Statement

# Profitability Mgmt: Common Size Income Statement

## *EFCG's Overhead Benchmarking Tool*

*(Data from 2017 CFO Conference; as % of Net Revs)*

| | % of Net Revs | |
|---|---|---|
| Net Revenues | **100** | |
| Direct Labor Costs (excl. fringe & bonus expense) | **36** | |
| Gross Profit | | **64** |

| | Indirect Labor | + | Non-Labor | = | Total | | |
|---|---|---|---|---|---|---|---|
| **I. "6+ Buckets" (Indirect** and Non-Labor)** | | | | | | | |
| 1- Risk Management | 0.4 | + | 1.5 | = | 1.9 | | |
| 2- MIS/Communication/IT | 1.1 | + | 2.4 | = | 3.5 | | |
| *As a subset, Annual Software Maintenance Fees* | | | *0.9* | | | | |
| 3- Finance/Treasury/Accounting | 1.5 | + | 0.6 | = | 2.0 | | |
| 4- Human Resources | 0.7 | + | 0.7 | = | 1.4 | | |
| *As a subset, Training / Leadership Development* | *0.1* | | *0.4* | | | | |
| 5- Business Development/Marketing | 1.9 | + | 1.2 | = | 3.1 | | |
| *As a subset, Bid & Proposal* | *0.9* | | *0.3* | | | | |
| 6- Occupancy | 0.3 | + | 4.8 | = | 5.1 | | |
| 6+ Office of CEO / Chair / Board | 1.3 | + | 0.5 | = | 1.8 | | |
| 6+ Health & Safety | 0.2 | + | 0.2 | = | 0.5 | | |
| 6+ Other | 0.2 | + | 0.2 | = | 0.5 | | |
| Subtotal: "6+ Buckets" | 7.7 | + | 12.1 | = | | 19.8 | |
| **II. Non-Billable Time of Billable Personnel** | | | | | | | |
| 1- PTO (Paid Time Off) | 4.9 | | | | 4.9 | | |
| 2- Accounting | 0.9 | | | | 0.9 | | |
| 3- Business Development/Marketing | 3.9 | | | | 3.9 | | |
| 4- HR / Professional Development | 1.0 | | | | 1.0 | | |
| 5- "Admin Time" & Other | 4.7 | | | | 4.7 | | |
| Subtotal: Non-Billable Time | 15.3 | | | | | 15.3 | |
| **III. Fringe Benefits** | | | | | | | |
| 1- Payroll Tax | | | 4.3 | | 4.3 | | |
| 2- Medical Costs | | | 4.6 | | 4.6 | | |
| 3a- Retirement Costs (401k, pension) | | | 0.8 | | 0.8 | | |
| 3b- Retirement Costs (ESOP Exp in lieu of 401k) | | | 0.8 | | 0.8 | | |
| 4- Other Fringe | | | 0.9 | | 0.9 | | |
| Subtotal: Fringe Benefits | | | 11.3 | | | 11.3 | |
| **IV. Other Non-Labor Cost (non-reimbursable)** | | | | | | | |
| 1- Travel / Entertainment / Auto | | | 1.7 | | 1.7 | | |
| 2- Supplies / Office Equipment | | | 1.2 | | 1.2 | | |
| 3- Deprec. & Amort. | | | 2.5 | | 2.5 | | |
| 4-Bad Debt | | | 0.3 | | 0.3 | | |
| 5- Relocation Costs (should not be included in HR Bucket) | | | 0.1 | | 0.1 | | |
| 6- Civic Activities, Charities, Political Contributions | | | 0.2 | | 0.2 | | |
| 7- Other Non-Labor | | | 1.7 | | 1.7 | | |
| Subtotal: Other Non-Labor | | | 7.8 | | | 7.8 | |
| **Total Overhead = I-IV** | 23.0 | + | 31.2 | = | | | **54** |
| **EBIBT = Gross Profit - Total Overhead** | | | | | | | **10** |

- **Mapping the Overhead Genome**
- **Overhead = all expenses between Gross Profit and EBIBT**
- **How does your firm compare to peers?**
- **Significant differences by Customer sector, Size, Market Sector, Ownership, etc.** *(not shown)*
- **Recommend: EFCG Overhead Peer Analysis ("OPA")**

# Balance Sheet Mgmt: Common Size Balance Sheet

## Large Firm Advantage

(Medians) (Gross Revs = 100)

| Assets | < $1 Bil* | > $1 Bil* | Capital | < $1 Bil* | > $1 Bil* | |
|---|---|---|---|---|---|---|
| **Cash** | 5 | 4 | **Payables**<br>Trade & Sub Payables<br>Customer Advances<br>Billings in Excess | -12 | -21 | ("Free Capital") |
| **Receivables** incl. WIP | 24<br>88 (DSO)** | 27<br>98 (DSO)** | | | | |
| **Fixed Assets** | 3 | 4 | **Debt** | 4 | 10 | (Expensive) |
| **Intangibles** | 1 | 25 | **Other** | 1 | 4 | |
| **Other** | 3 | 5 | **Equity** *("Book Value")* | 19 | 30 | (Most Expensive) |
| **Total Assets** | 36 | 65 | **Total Capital** | 36 | 65 | |

**"Working Capital"**
<$1 Bil = 12
>$1 Bil = 6

"Invested Capital"

*What is Balance Sheet Management?:*

- *Squeeze Assets: particularly Receivables (& Cash)*
- *Maximize "Free Capital" (Payables, Accruals)*
- *Manage appropriate percentage of Debt/Equity*

Minimize your investment in Working Capital (WC)

- Large firms do not collect AR faster, but they have more "free capital," leading to a 50% lower investment in Working Capital!

*Median size <$1 bil = $73 mil; median size > $1 bil = $2.2 bil; ** DSO = Days Sales Outstanding; data from 2017 CEO Conf. Survey*

# ROWC Benchmarking

*(Best measurement of Return on Capital)* *[Top of each column = good!]*

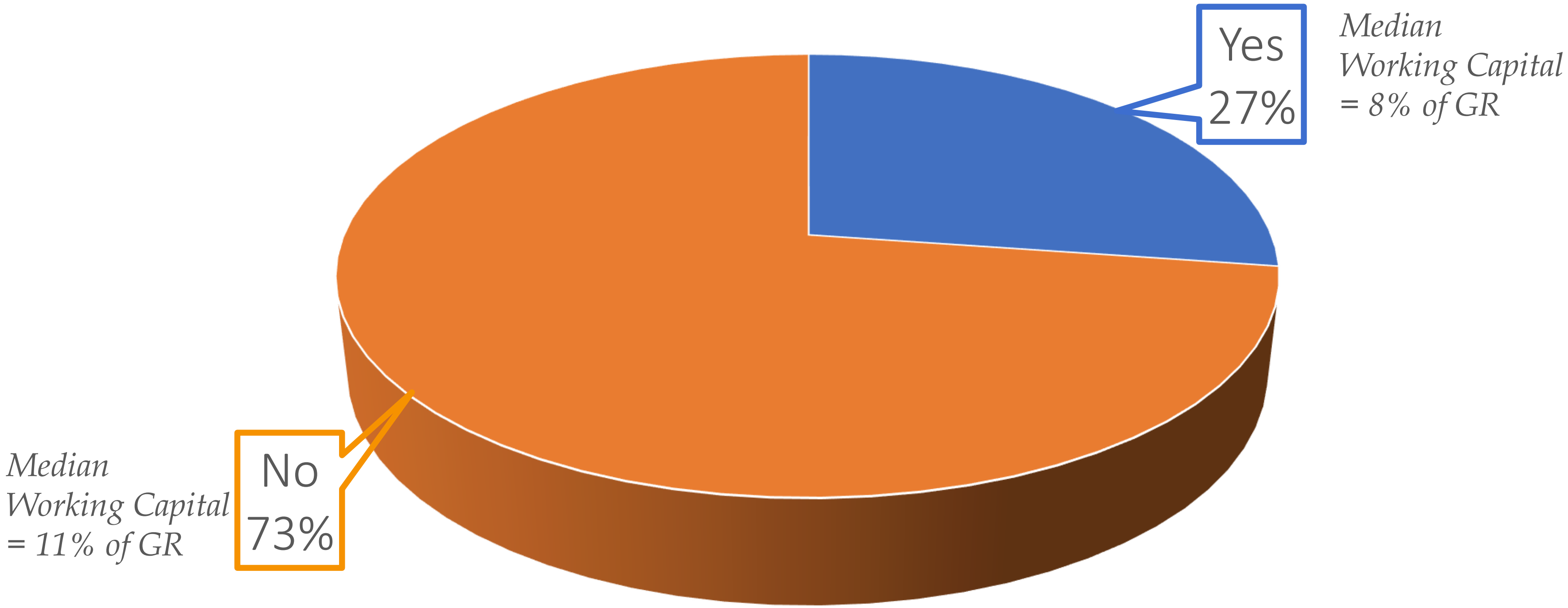
- Larger firms have lower Return on Revenue (Profit Margin by ~35%), but higher Return on Capital (ROWC by ~40%)
- Which is better?
- EFCG thinks Return on Capital is more important

| | Profit Margin (EBIBT/ Gross Revs) | | / Working Capital (WC / Gross Revs) | | = ROWC (EBIBT/ WC) | |
|---|---|---|---|---|---|---|
| 1 | 16.4% | | Neg WC | | Neg WC | |
| 2 | 16.0% | | 2.5% | | 271% | |
| 3 | 15.4% | | 3.1% | | 196% | |
| 4 | 14.0% | | 4.8% | | 175% | |
| 5 | 12.9% | | 5.2% | | 170% | |
| 6 | 12.3% | | 5.6% | | 166% | |
| 7 | 11.5% | | **6.1%** | > $1 Bil Revs | 158% | |
| 8 | 10.8% | | 6.7% | | 149% | |
| 9 | **9.3%** | < $1 Bil revs | 6.8% | | 127% | |
| 10 | 9.3% | | 7.2% | | 116% | |
| 11 | 8.8% | | 7.3% | | **113%** | > $1 Bil Revs |
| 12 | 7.5% | | 7.5% | | 98% | |
| 13 | 7.3% | | 8.8% | | 97% | |
| 14 | 7.0% | | 8.8% | | 93% | |
| 15 | **6.9%** | > $1 Bil Revs | 8.8% | | 80% | |
| 16 | 6.8% | | 9.4% | | **80%** | < $1 Bil revs |
| 17 | 5.9% | | 10.0% | | 76% | |
| 18 | 5.8% | | 10.0% | | 70% | |
| 19 | 5.7% | | 10.1% | | 55% | |
| 20 | 5.7% | | 10.3% | | 54% | |
| 21 | 5.6% | | 10.5% | | 45% | |
| 22 | 5.5% | | **11.6%** | < $1 Bil revs | 44% | |
| 23 | 5.4% | | 12.0% | | 43% | |
| 24 | 5.2% | | 12.3% | | 40% | |
| 25 | 5.2% | | 12.6% | | 38% | |
| 26 | 4.6% | | 14.4% | | 28% | |
| 27 | 2.5% | | 16.7% | | 28% | |
| 28 | 2.5% | | 17.7% | | 15% | |
| 29 | 0.3% | | 20.0% | | 4% | |
| 30 | 0.0% | | 26.4% | | 0% | |

**Illustrative example of EFCG's Peer Benchmarking Analysis*

*[Example]*

# Working Capital Incentives for PM's?

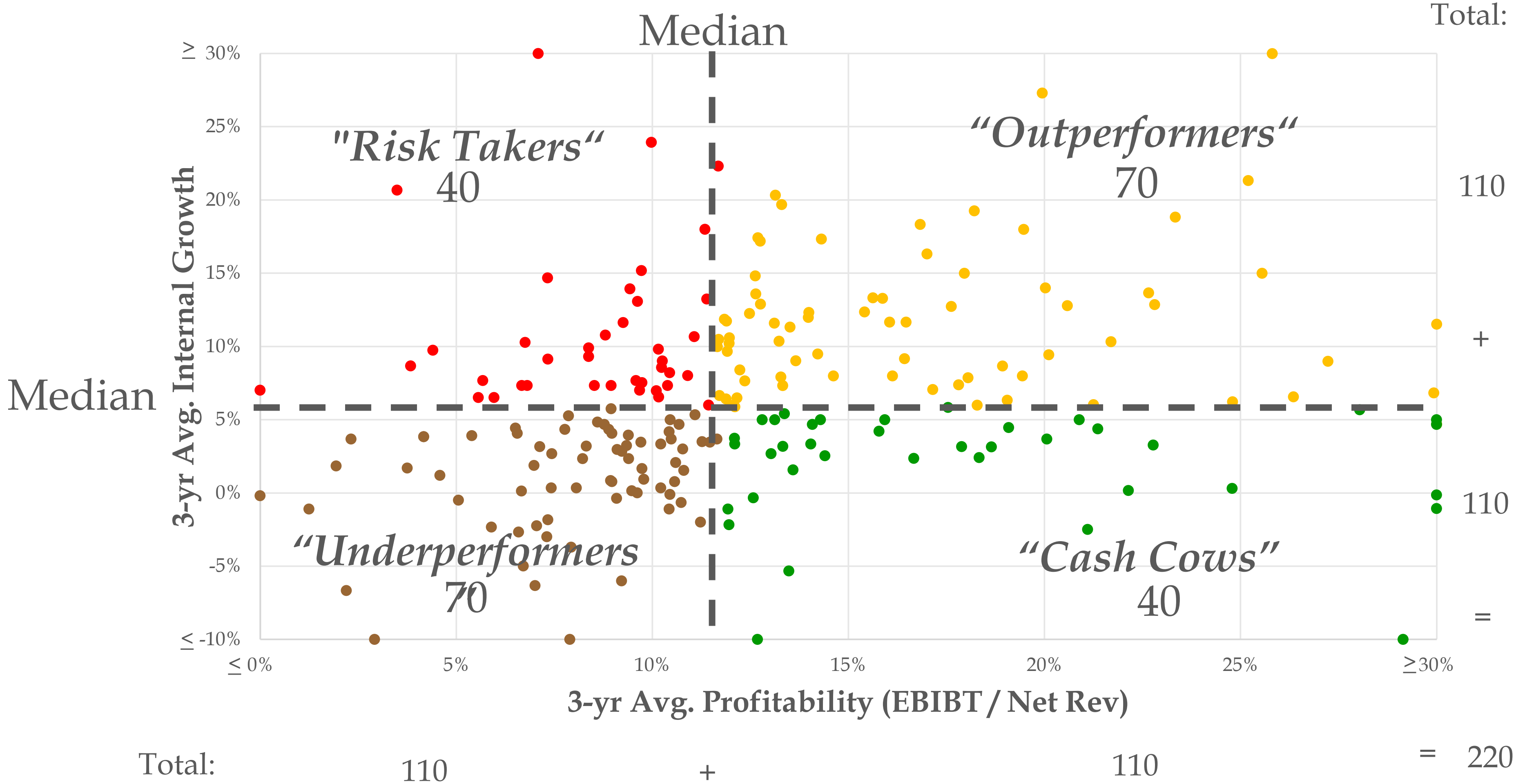



- Only 27% of firms have Working Capital *(one or both variables)* incentives for PM's!?
- Those that incentivize PM's have ~30% better net investment in Working Capital (8% vs. 11%)
  - ➢ For median firm here *($150 Mil revs.)*, 3%-point difference ~ $5 Mil extra tied up in Work. Cap.
- No difference in Profit Margin between two groups, but better Return on Capital (ROWC) for those that incentivize their PMs—you get what you incentivize!

*Data from EFCG 2018 CFO Conference*

# Balancing Growth & Profitability: *Growth & Profit Analysis (GPA)*

*(All firms shown)*




- Unlike conventional wisdom, growth & profitability seem to be positively correlated
- Where is your data point?
- Which quadrant creates more value over time? Which destroys value?

*Data from EFCG 2017 CEO Conference*

# "Underperformer Cemetery"

*Some of the Firms in the "Underperformer" Quadrant for a number of years, which have "Disappeared"*

- A&WT
- Agra E&E
- ATC
- BCM
- Boyle
- Canonie
- CH2M
- Clayton Group
- Delta
- Dufresne Henry
- Dynamac
- Ebasco
- Emcon
- Engineering Science
- ENSR
- ENTRIX
- ES&E
- Geomatrix
- Geraghty & Miller
- Greenhorne & O'Mara
- Halcrow
- Harding Lawson
- Harza
- ICF Kaiser
- Jones & Stokes
- Jordan, Jones & Goulding
- L. Robert Kimball
- Law
- Levine Fricke
- Mactec
- McLaren Hart
- Metcalf & Eddy
- MWH
- NUS
- Parsons Brinckerhoff
- PBS&J
- Riedel
- RMT
- Sear Brown
- Secor
- STS Consultants
- Tams
- Wilbur Smith
- Woodward Clyde

# Key Issues Takeaways

1. **Consolidation Continues**: but **slower than it seems** given recent mega-mergers; **still fragmented** compared to many other industries. Are employee-owned firms an **endangered species**? Or, are they the **preferred destination** for talent disillusioned by impact of mega-mergers?

2. **Expect M&A activity to remain very high; some Drivers**:
   - **Largest** firms **not growing** internally, so pressure to grow through acquisitions
   - **Valuation (& Size) Arbitrage**, a key financial driver, **accentuated** right now given 10-year high public market valuations
   - **CEO perception** of M&A **success** strong (90%; culture fit & mgmt. retention key)
   - **Cost synergies** used to **rationalize** record high M&A valuations
   - **International expansion** through cross-border M&A

3. **Expect Alternative Delivery to keep growing**:
   - Successful firms must figure out how to better **manage Risk/Reward (Risk can be existential!)**

4. **Reduce Costly Employee Turnover & Improve Diversity**: Turnover highest among publicly traded and PE-owned firms
   - Do engineers not like working for large/bureaucratic organizations, and dealing with stock market volatility & performance pressures?
   - Large firms do a bit better on employee diversity measures/programs; we need to improve as an industry

# Key Issues Takeaways (cont'd)

5. **Manage Profitability Higher**: **maximize MU** factor and **map your "overhead** genome" – Peer Benchmarking Analysis tool available

6. **Manage your Balance Sheet**: **minimize investment in Working Capital**; manage an **appropriate capital structure** (mix of debt and equity) given your firm's risk tolerance/shareholder return expectations; **focus on Return on Capital** (like ROWC) metric, not just profit margin (Return on Revenue)

7. **Balance Growth & Profitability**: strive for **top quartile profitability**; **modulate growth** to provide enough **staff opportunities** but not too much to take on too much **risk** and/or diminish **quality** and/or not be able to **fund rapid growth**

8. **Rise to IOT Challenge to Preserve Employee-Ownership** ("Endangered Species"); financially this means:
   - Focus on achieving and maintaining peer **top quartile profitability** (or at least above median)
   - Encourage **younger** employees to **buy stock** (help finance it, provide consistently strong returns)
   - **Minimize Working Capital** (both reducing AR/WIP but also maximizing Payables or "free capital") to **reduce cost of growth**
   - **Manage internal stock valuation strategically** to find the **right approach** for your firm's strategy
   - Use IOT/OCCP Planning Tool: **Capital Flow Model** to ensure Capital Sources cover Capital Uses

# IV. How to Create Value in an A/E/C Firm

1. Maximize Profitability:
   - Manage Productivity & Overhead
2. Better Budgeting / Forecasting / Response
3. Balancing Growth & Profitability
4. Solve Internal Ownership Transition ("IOT")
5. Minimize Working Capital
6. Minimize Employee Turnover
7. Manage Risk
8. Successful Acquisition Strategy
9. Strong Leadership

# 1) Maximize Profitability:

## *Why is it so Important?*

1) Pays for Compensation (Salaries + Bonus / Dividend); Helps Morale
2) Funds Growth (for Working Capital and Acquisitions)
3) Funds Internal Ownership Transition (“IOT”) (Stock Buyback)
4) Provides Buffer for Risk/Problems
5) Creates Stock Value

# 2) Better Budgeting / Forecasting / Response:

*What is the theoretical impact of a 5% revenue shortfall?*

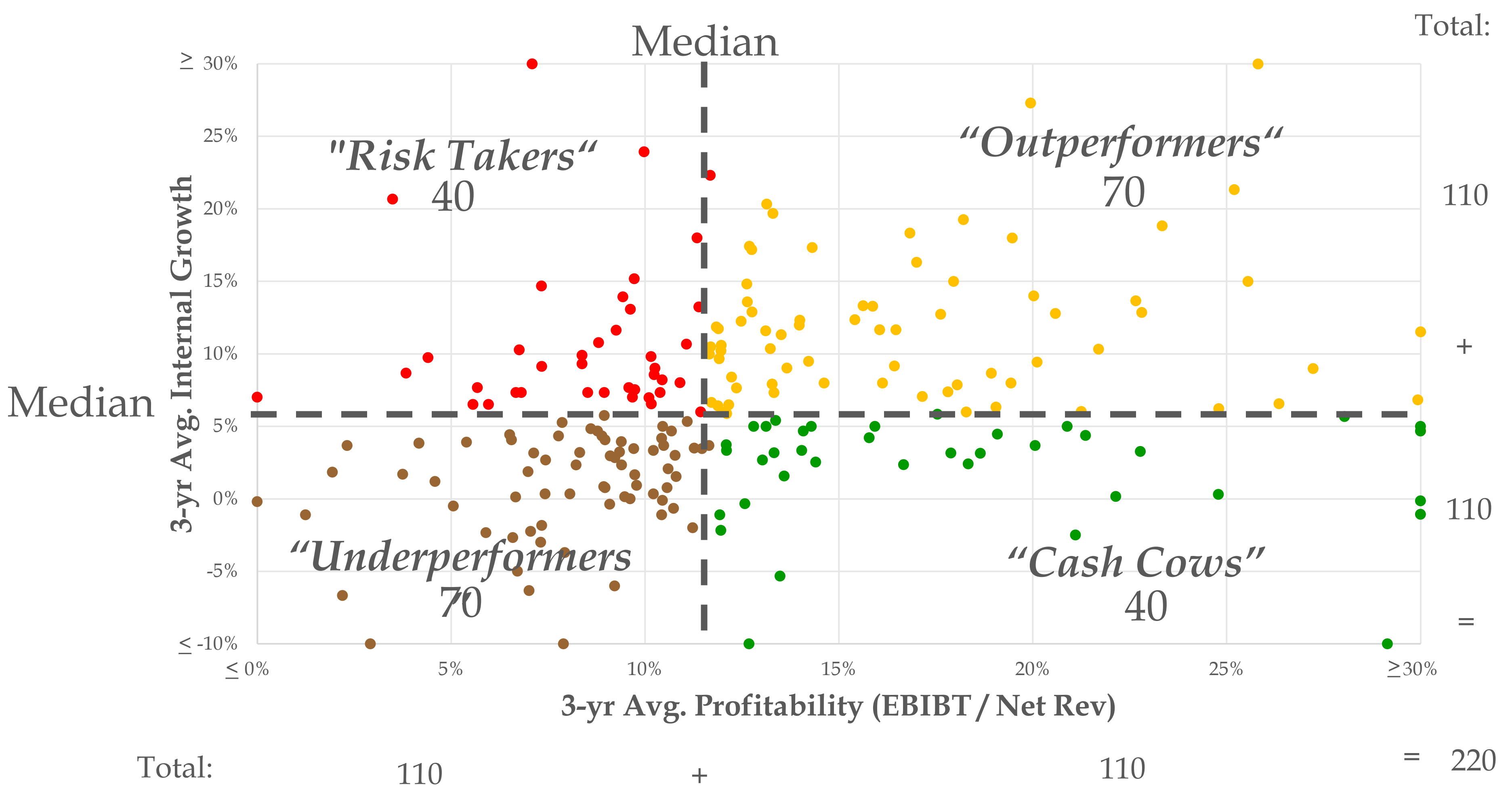
| | Budget | | 5% Rev. Shortfall | |
|---|---|---|---|---|
| | "Typical" | "Efficiency" | "Typical" | "Efficiency" |
| Revenues | 100 | 100 | 95 | 95 |
| -Costs | (90) | **(85)** | (90) | (85) |
| = Profit | 10 | 15 | **5** | **10** |

*Budget for 5% less*

*Still make $10 Profit, vs. lose 50% of margin!*

- An unanticipated revenue shortfall of 5% would lead to a profit shortfall of 50%!
- Better off with Efficiency Budgeting, setting expenses 5% below budget
- Why so much negative leverage in our business?
  - No inventory (An hour of an engineer's billable time has a very short shelf life)
  - Thin margins (vs. many other industries)
  - Most expenses "fixed" (labor and leases can not be reduced quickly/easily)

# 3) Balancing Growth & Profitability:




- Unlike conventional wisdom, growth & profitability seem to be positively correlated
- Which quadrant creates more value over time? Which destroys value?

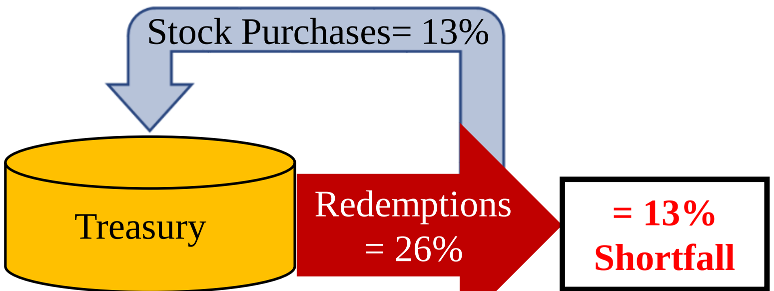


E F C G

# 4) Solve Internal Ownership Transition (IOT)

*A major challenge for private/employee-owned firms. Why?*

## 1 **Redemptions Exceed Purchases**




**Data expressed in % of outstanding shares. From 2016 CFO Survey; projected averages for "next 5 years"*

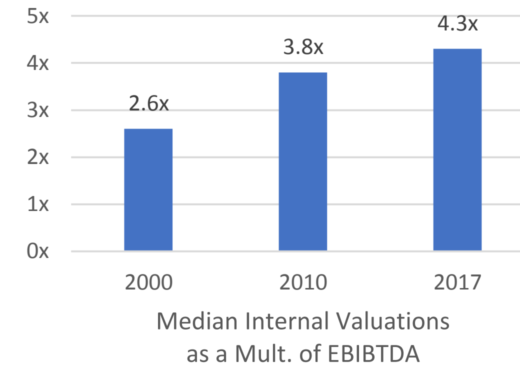
## 2 **Capital Constraints**

✓ Lower profit margins for a/e/c firms vs. other industries

✓ Significant working capital needs

✓ Other key expenditures (e.g. M&A)

## 3 **Valuations Increased Over Time**




## **Valuation Conundrum**

**"Fairness" vs. "Affordability"**

*(Higher vs. Lower)*

- Lower may be "unfair", incentivize a sale, and make acqs less financially efficient
- Higher make share repurchase more costly
- Getting the right balance
- No "right" answer: Your approach to valuation needs to be strategic

- The biggest reason private firms "sell out" is because they can't fund their IOT

# 5) Minimize Working Capital

| Assets | < $1 Bil* | > $1 Bil* | Capital | < $1 Bil* | > $1 Bil* | | "Working Capital" |
|---|---|---|---|---|---|---|---|
| **Cash** | 5 | 4 | **Payables**<br>Trade & Sub Payables<br>Customer Advances<br>Billings in Excess | -12 | -21 | ("Free Capital") | <$1 Bil = 12<br>>$1 Bil = 6 |
| **Receivables**<br>incl. WIP | 24<br>88 (DSO)** | 27<br>98 (DSO)** | | | | | |
| **Fixed Assets** | 3 | 4 | **Debt** | 4 | 10 | (Expensive) | "Invested Capital" |
| **Intangibles** | 1 | 25 | **Other** | 1 | 4 | | |
| **Other** | 3 | 5 | **Equity** *("Book Value")* | 19 | 30 | (Most Expensive) | |
| **Total Assets** | 36 | 65 | **Total Capital** | 36 | 65 | | |

*What is Balance Sheet Management?:*

- *Squeeze Assets: particularly Receivables (& Cash)*
- *Maximize "Free Capital" (Payables, Accruals)*
- *Manage appropriate percentage of Debt/Equity*

Minimize your investment in Working Capital (WC)

# 5) …and Maximize ROWC

- Larger firms have lower Return on Revenue (Profit Margin by ~35%), but higher Return on Capital (ROWC by ~40%)
- Which is better?
- EFCG thinks Return on Capital is more important

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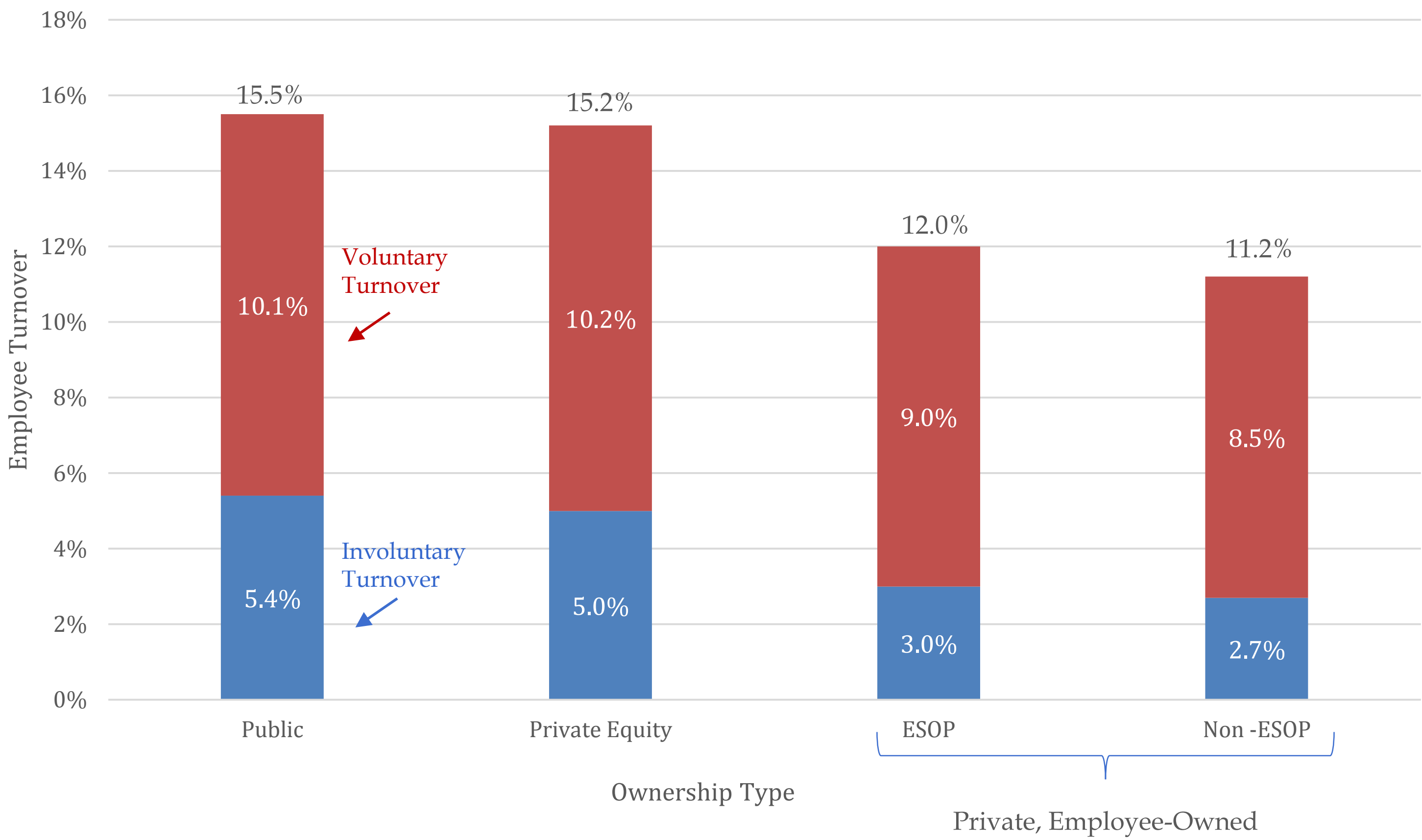
| 2 | 16.0% | | 2.5% | | 271% | |
| 3 | 15.4% | | 3.1% | | 196% | |
| 4 | 14.0% | | 4.8% | | 175% | |
| 5 | 12.9% | | 5.2% | | 170% | |
| 6 | 12.3% | | 5.6% | | 166% | |
| 7 | 11.5% | | **6.1%** | > $1 Bil Revs | 158% | |
| 8 | 10.8% | | 6.7% | | 149% | |
| 9 | **9.3%** | < $1 Bil revs | 6.8% | | 127% | |
| 10 | 9.3% | | 7.2% | | 116% | |
| 11 | 8.8% | | 7.3% | | **113%** | > $1 Bil Revs |
| 12 | 7.5% | | 7.5% | | 98% | |
| 13 | 7.3% | | 8.8% | | 97% | |
| 14 | 7.0% | | 8.8% | | 93% | |
| 15 | **6.9%** | > $1 Bil Revs | 8.8% | | 80% | |
| 16 | 6.8% | | 9.4% | | **80%** | < $1 Bil revs |
| 17 | 5.9% | | 10.0% | | 76% | |
| 18 | 5.8% | | 10.0% | | 70% | |
| 19 | 5.7% | | 10.1% | | 55% | |
| 20 | 5.7% | | 10.3% | | 54% | |
| 21 | 5.6% | | 10.5% | | 45% | |
| 22 | 5.5% | | **11.6%** | < $1 Bil revs | 44% | |
| 23 | 5.4% | | 12.0% | | 43% | |
| 24 | 5.2% | | 12.3% | | 40% | |
| 25 | 5.2% | | 12.6% | | 38% | |
| 26 | 4.6% | | 14.4% | | 28% | |
| 27 | 2.5% | | 16.7% | | 28% | |
| 28 | 2.5% | | 17.7% | | 15% | |
| 29 | 0.3% | | 20.0% | | 4% | |
| 30 | 0.0% | | 26.4% | | 0% | |

# 6) Minimize Employee Turnover

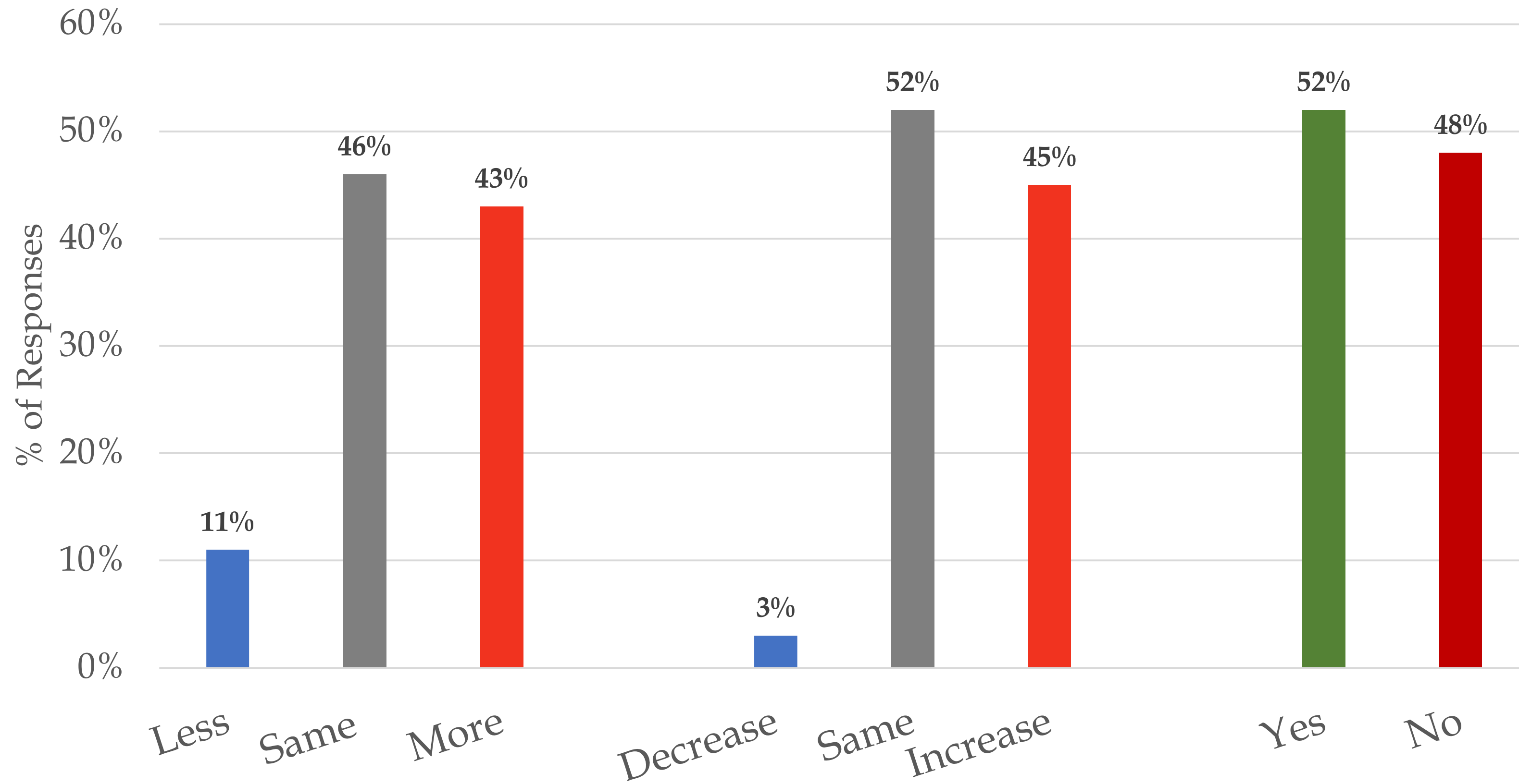



- Why do <u>public</u> firms and <u>private equity-owned</u> firms have higher turnover?
- Advantage of employee-ownership? Or, is firm size the driver?



E F C G

# 7) Manage Risk: Alternative Delivery: @ Risk Work (data from CFO conf.)




**@ Risk Work:** | **Doing More or Less Today vs. 5 Yrs Ago** | **Expect @ Risk Work in 5 Yrs vs. Today** | **Paid Commensurately for Added Risk?**

- Clear trend towards more @ Risk work, and yet only half of firms are paid commensurately for additional risk!
- Imbalance of Risk / Reward = Threat to our industry *(existential threat to several firms recently,e.g. CH2M)*

# 8) Successful Acquisition Strategy

*Top 30 ENR firms in 2018 (Green highlighted firms not in ENR's 1991 Top 30)*

## ENR '18 Rank

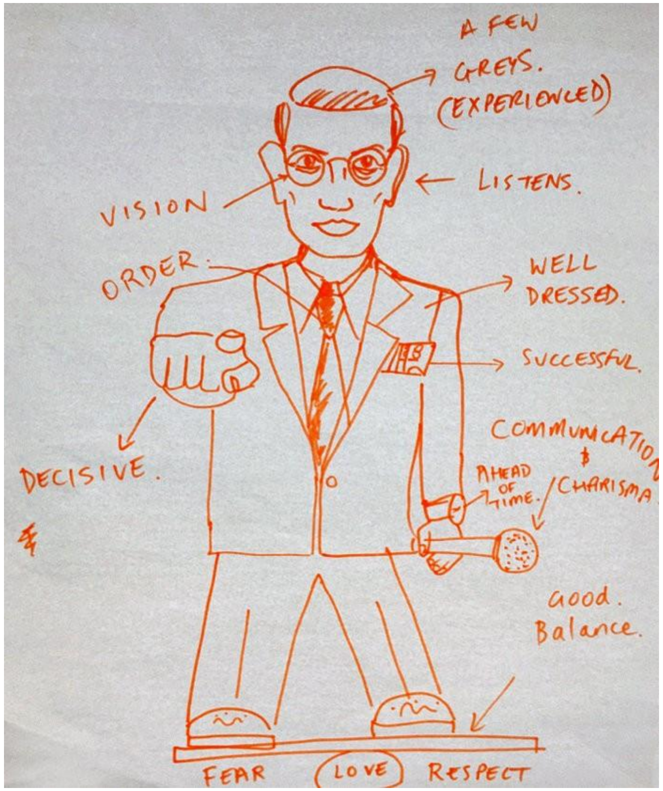
| | | | |
|---|---|---|---|
| 1 | **Jacobs** | 16 | **HNTB** |
| 2 | **AECOM** | 17 | **Bechtel** |
| 3 | **Fluor** | 18 | **Golder** |
| 4 | **Tetra Tech** | 19 | **TRC** |
| 5 | **KBR** | 20 | **Kimley-Horn** |
| 6 | **HDR** | 21 | **Louis Berger** |
| 7 | **Wood Group** | 22 | **CB&I** |
| 8 | **Stantec** | 23 | **CDM Smith** |
| 9 | **Burns & McDonnell** | 24 | **Terracon** |
| 10 | **Black & Veatch** | 25 | **GHD** |
| 11 | **Parsons Corp.** | 26 | **Bureau Veritas** |
| 12 | **WSP** | 27 | **Leidos** |
| 13 | **Arcadis US** | 28 | **WorleyParsons** |
| 14 | **Intertek - PSI** | 29 | **Perkins + Will** |
| 15 | **Gensler** | 30 | **Michael Baker** |

- 24 of 30 firms are "new". What has been their strategy?
- 7 of the Top 10 have been Very Active in M&A, as well as 21 of the Top 30

# 9) Strong Leadership Characteristics

1. Ability to respond timely to challenges and opportunities
   - ✓ vs. Indecisive leadership with Dysfunctional Decision-making Syndrome ("DDS")
2. Understanding of key business and financial issues
   - ✓ vs. only technical knowledge prowess
3. Innovative thinking, openness to new ideas
   - ✓ vs. a "know-it-all" stuck in the past
4. Consensus builders (not consensus takers)
   - ✓ vs. "we had to sell the firm to regain control"
5. Inspirational leaders who get the most out of people and assemble a diverse team
   - ✓ vs. leaders who puts people down
6. Developed leadership succession plan
   - ✓ vs. paranoid leadership feeling threatened and failing to develop successors

*What Makes Someone A Good Leader?*




Source: NY Times



EFCG