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Young Engineer of the Year**



**FIDIC  
INTERNATIONAL  
INFRASTRUCTURE  
CONFERENCE –  
DUBAI 2015 –  
CONFERENCE  
SUMMARY**

**Geoff du Toit Aug 2016**

# PRESENTATION OUTLINE

Introduction

Infrastructure Market

Business

People

Technology

**Young Professionals**

**FIDIC Publications and Committees**

Marakesh 2016



**DUBAI**  
**FIDIC 2015**



**INTERNATIONAL  
INFRASTRUCTURE  
CONFERENCE**

| 13 - 15 September |



[www.fidic2015.org](http://www.fidic2015.org)

# FIDIC International Infrastructure Conference

The global infrastructure industry performance  
and challenges

## INTRODUCTION



International Federation of Consulting Engineers  
The Global Voice of Consulting Engineers

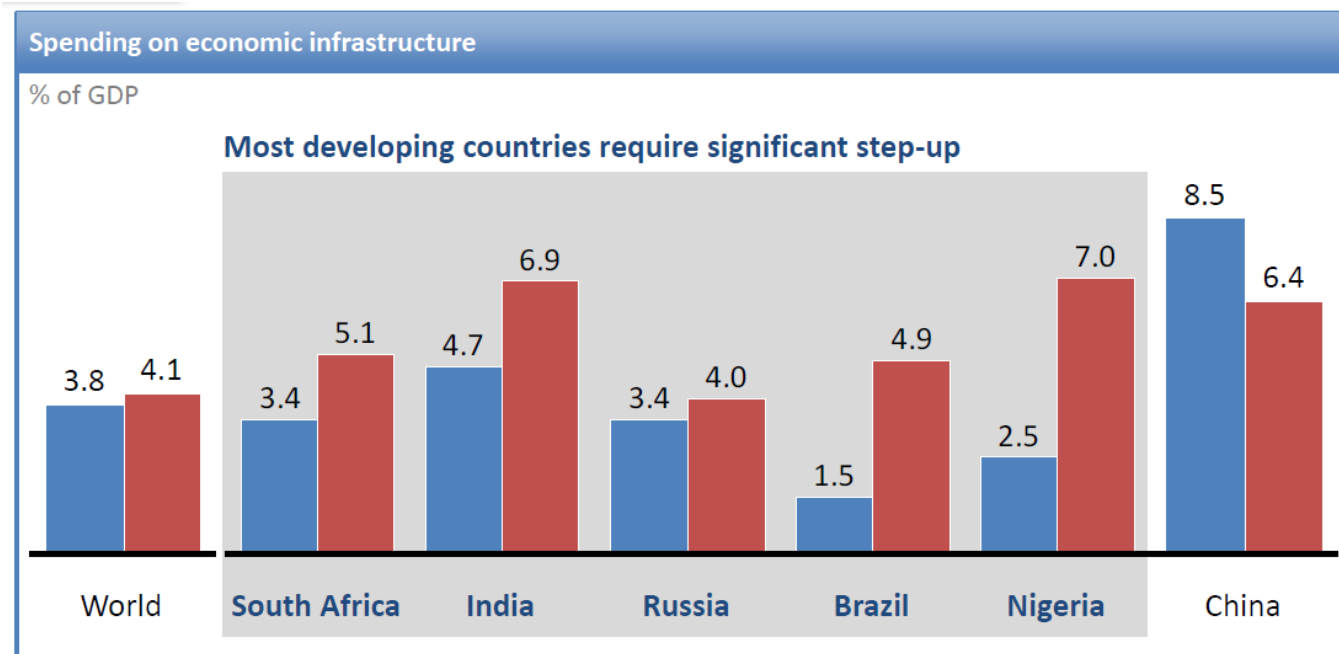


جمعية المهندسين - الإمارات العربية المتحدة  
SOCIETY of ENGINEERS - UAE

Strategic Partner  
**BST**  
GLOBAL  
BUSINESS MANAGEMENT  
SOFTWARE FOR ENGINEERS



- Politicians and Policy makers are starting to value the importance of infrastructure
- They need advisors, planners and engineers



INFRASTRUCTURE MARKET



### 3 Infra. delivery system performance and productivity – The real problem

#### Delivery system challenges

Biased project selection

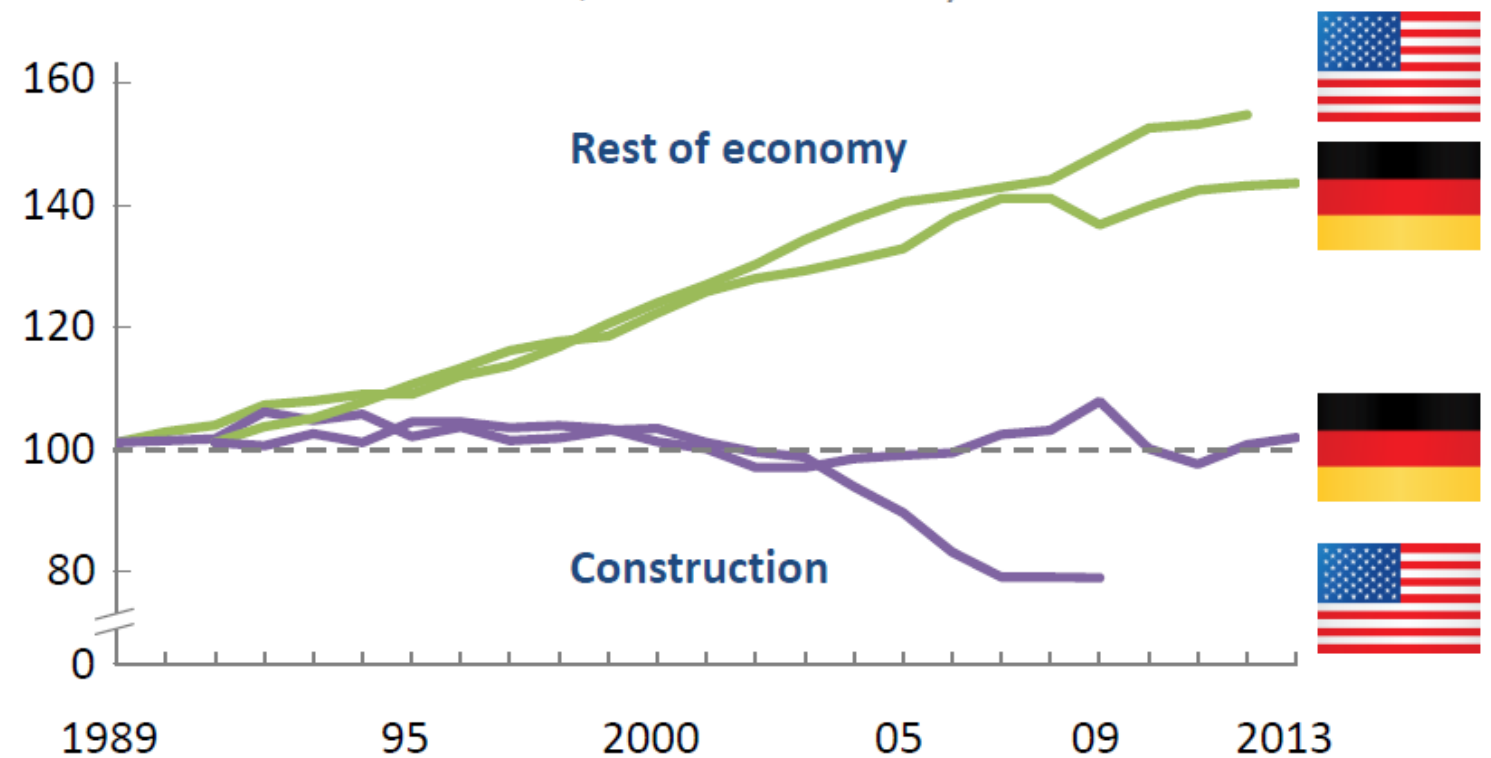
Poor project delivery

Bias towards new investments

#### Sub-par labor productivity growth

##### Value added per hour worked

Index: 100 = 1989 for the US, 1991 for Germany



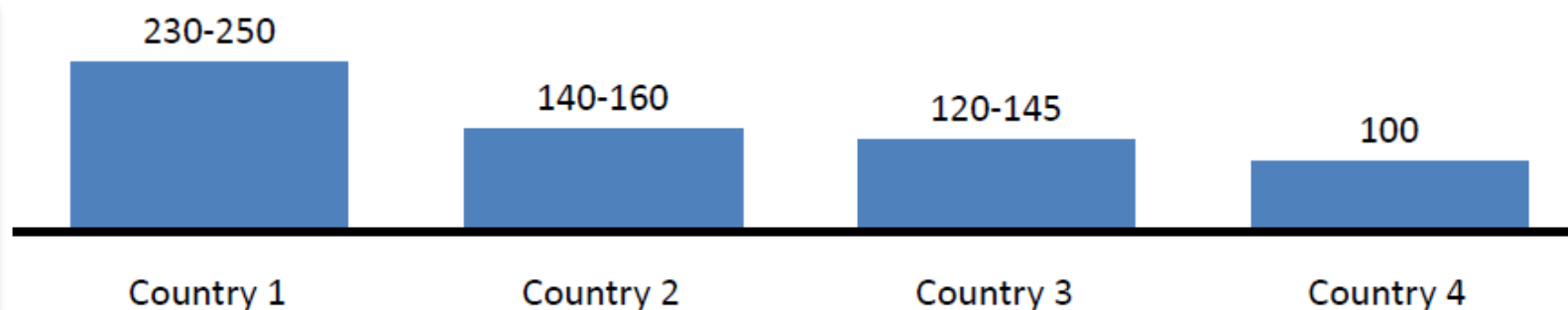
SOURCE: OECD Labour Productivity by Industry (ISIC Rev. 3 & Rev. 4); McKinsey Global Institute analysis

# 3 Cost variations of 2-3X across countries

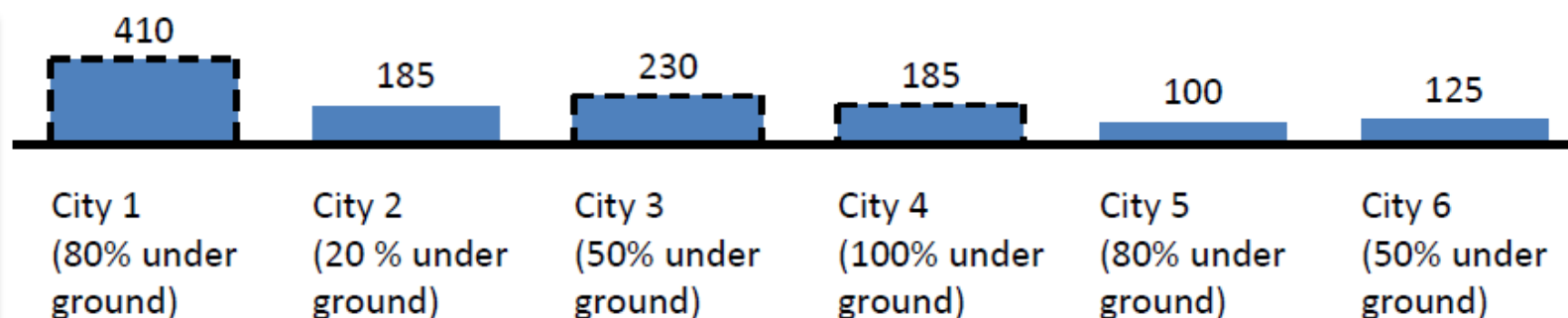
Index at 100

□ Completed project □ Project under construction

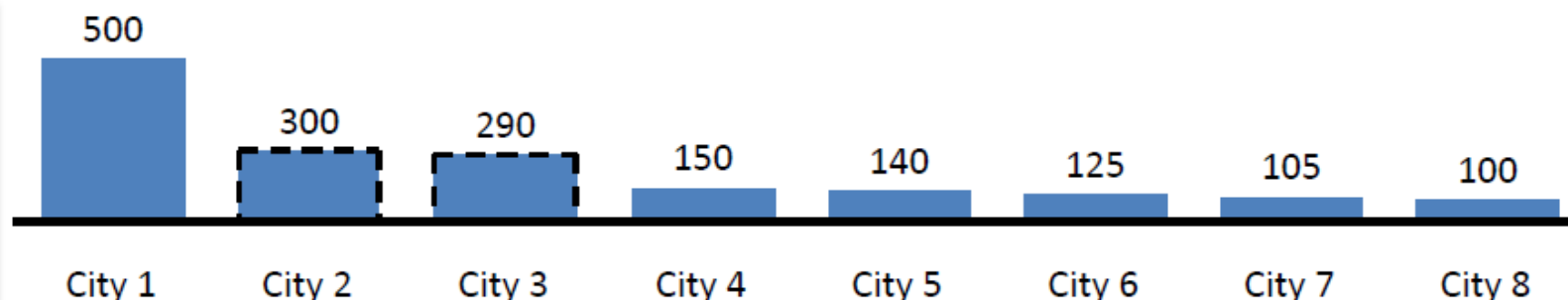
**ROADS**  
Cost/square meter



**RAIL/METRO**  
Cost per linear km



**AIRPORT**  
Cost per Passenger/year



SOURCE: Published reports, IATA data, press search; team analysis

# Summary of key messages

- Large but still insufficient spend on infrastructure
  - 9 trillion USD annually of which 2.7 on economic infrastructure
  - USD **15-20 trillion** gap next 15 years for Transport, Power and water
  - Severe **headwinds to funding and finance**
- Closing the gap requires actions along four key levers with PPPs only a **part** of the answer (and primary benefit often improved execution due to better aligned incentives)
- **Poor infrastructure system performance and productivity** is the real challenge for
- **Replicating existing best-practices** at the global scale could help get more and better infrastructure out of every dollar spent – Levers differ by country
- Some movement towards higher performance but not at desired speed



- There is greater competition in the infrastructure space
  - Big 4 ; Consultancies ; Software Companies ; China
- Reputational risk – need for Integrity Management Systems
- Need for data to support argument against lowest price procurement
- Bigger companies are not better, better efficiency in companies is better!

A light green circle containing the word 'BUSINESS' in a bold, dark green, sans-serif font.



# Buffet on Reputation

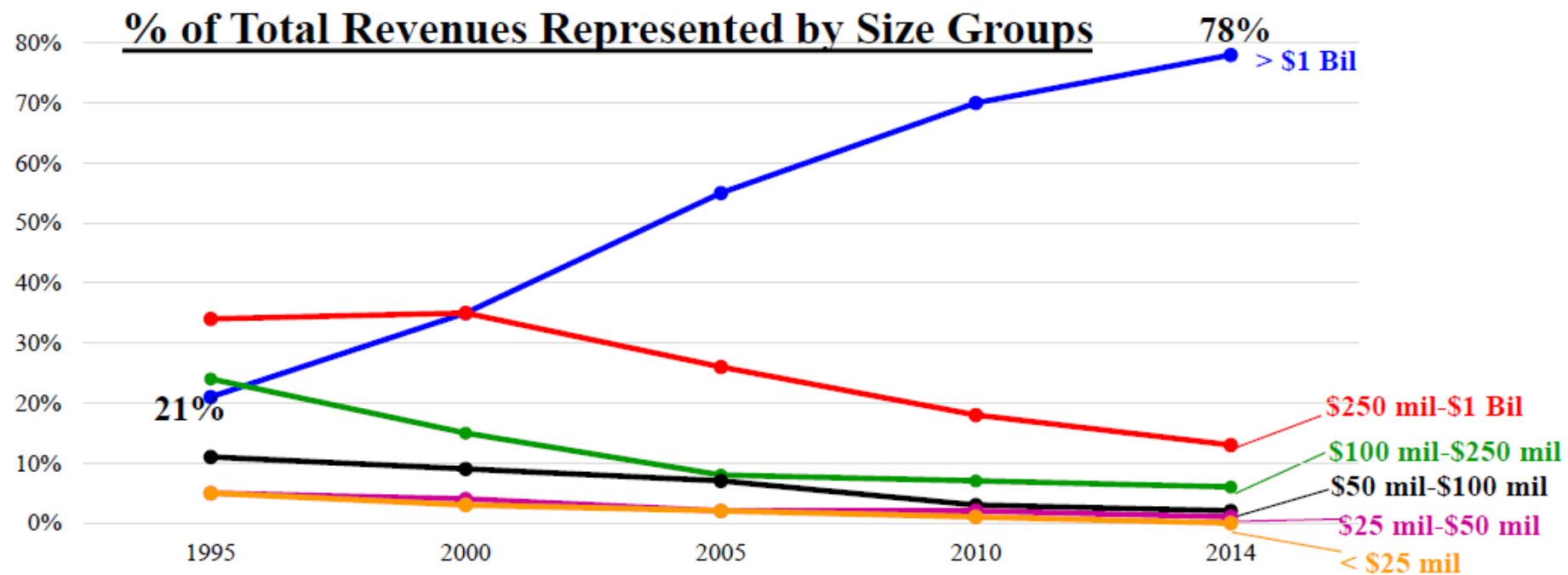
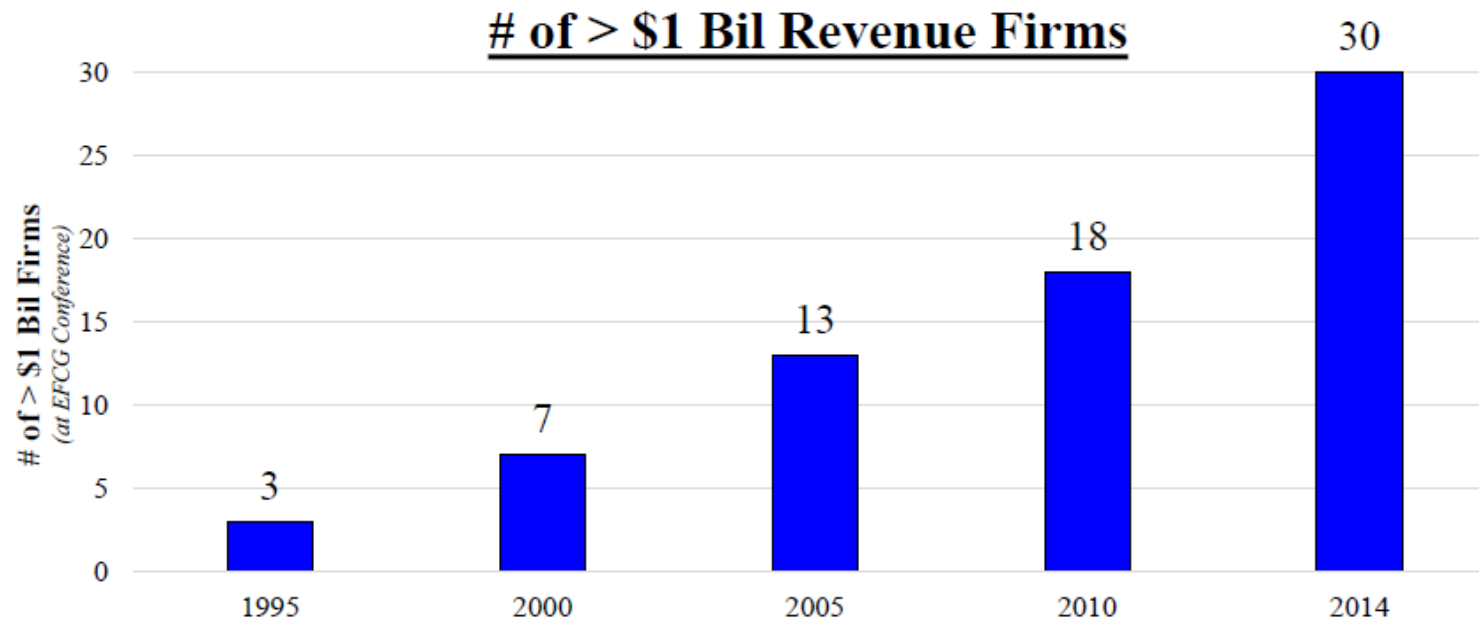


It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently.

(Warren Buffett)

# Changing Composition of Industry

## *Rise of the \$1 Billion firm*



# Who Disappears in 15 years?

	(in \$Billions)	Circa. 2000 Revs	2014 Revs	Ownership Change
			(S = Sold, B= Bankrupt)	
1	CH2M Hill	0.8	5.5	*
2	AECOM	0.7	8.0	*
3	Black & Veatch	0.5	3.0	*
4	ICF Kaiser	0.5	B/ S/ Earth Tech/ IPO	*
5	Parsons Brinckerhoff	0.5	S / Balfour Beatty / WSP	*
6	Dames & Moore	0.4	S / URS / AECOM	*
7	IT Group	0.4	B S / Shaw / CB&I	*
8	URS	0.4	S / AECOM	*
9	Montgomery Watson (MWH Global)	0.4	1.3	
10	CDM	0.4	1.3	
11	Parsons	0.4	3.1	
12	Tetra Tech	0.3	2.5	
13	ERM	0.3	1.0	*
14	Foster Wheeler Environmental	0.3	S / TTEK	*
15	OHM	0.3	S / IT / Shaw / CB&I	*
16	AWT	0.3	S / Vivendi	*
17	Woodward Clyde	0.3	S / URS / AECOM	*
18	Arthur D. Little	0.2	B	*
19	Morrison Knudsen Envir.	0.2	B / S/Wash/URS / AECOM	*
20	Radian	0.2	S / D&M / URS / AECOM	*
21	Earth Tech	0.2	S / Tyco/ AECOM	*
22	HNTB	0.2	0.9	*
23	HDR	0.2	2.0	*
24	Roy F. Weston	0.2	0.3	*
25	SAIC Envir.	0.2	Leidos	*
26	Law	0.2	S / Mactec / Amec	*
27	GTI	0.2	S / FD / IT / Shaw / CB&I	*
28	Metcalf & Eddy	0.2	S / AECOM	*
29	Golder	0.2	1.3	
30	Geraghty & Miller	0.2	Arcadis	*
31	Rust	0.2	S / EarthTech / AECOM	*
32	Smith	0.2	B	*
33	PSI	0.2	0.2	*
34	ENSR	0.2	S / AECOM	*
35	Malcolm Pirnie	0.1	S / Arcadis	*
36	Jacobs (Infra)	0.1	12.7 (~2.0 Infra)	
37	PBS&J	0.1	S / Atkins	*
38	Emcon	0.1	S / IT / Shaw / CB&I	*
39	Agra E&E	0.1	S / Amec	*
40	Harding Lawson	0.1	S / Mactec / Amec	*
41	Ogden	0.1	S / Agra / Amec	*

Of the 41 firms circa. 2000  
with Revenues > \$100 Mil:

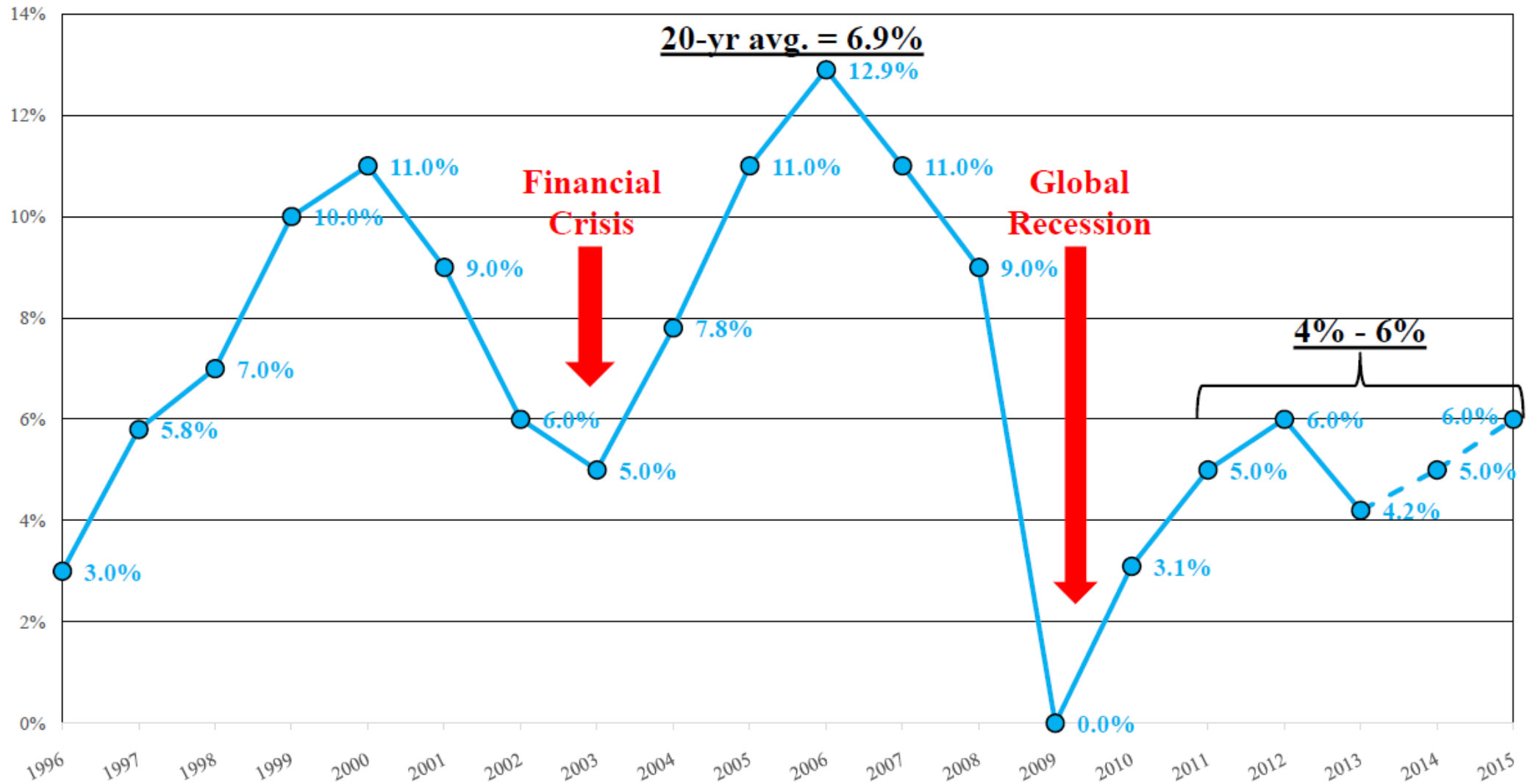
- Only 15 still exist
- Only 6 have same ownership structure

2/3 of firms no longer around.  
Why?

# Internal Growth

## *20-Year Historical Perspective*

(Medians)

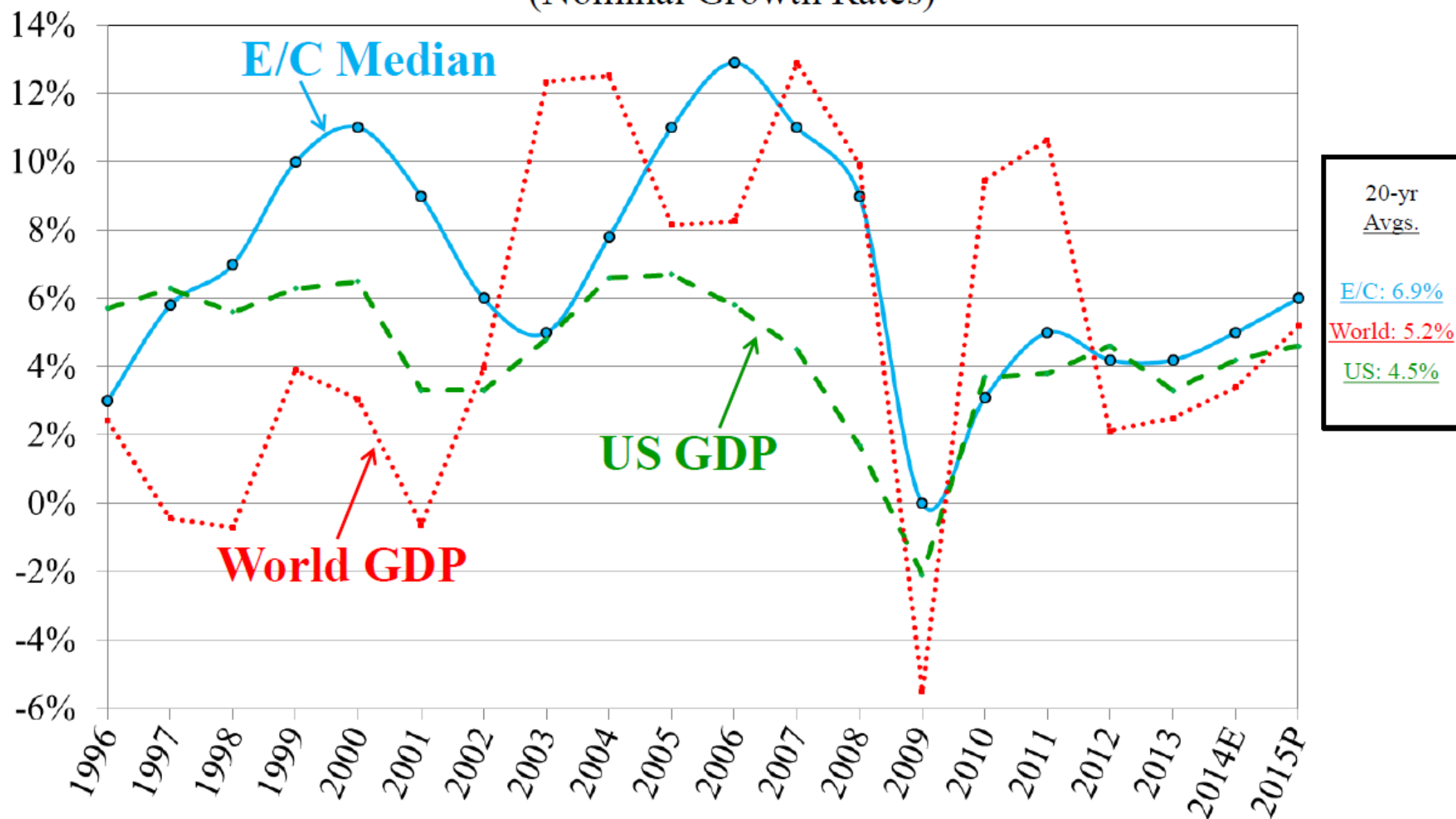


- Are the days of 10% internal growth gone?
- Are we now a 4%-6% growth industry?
- Is this a volatile industry?



# E/C Median Firm vs. GDP's

(Nominal Growth Rates)

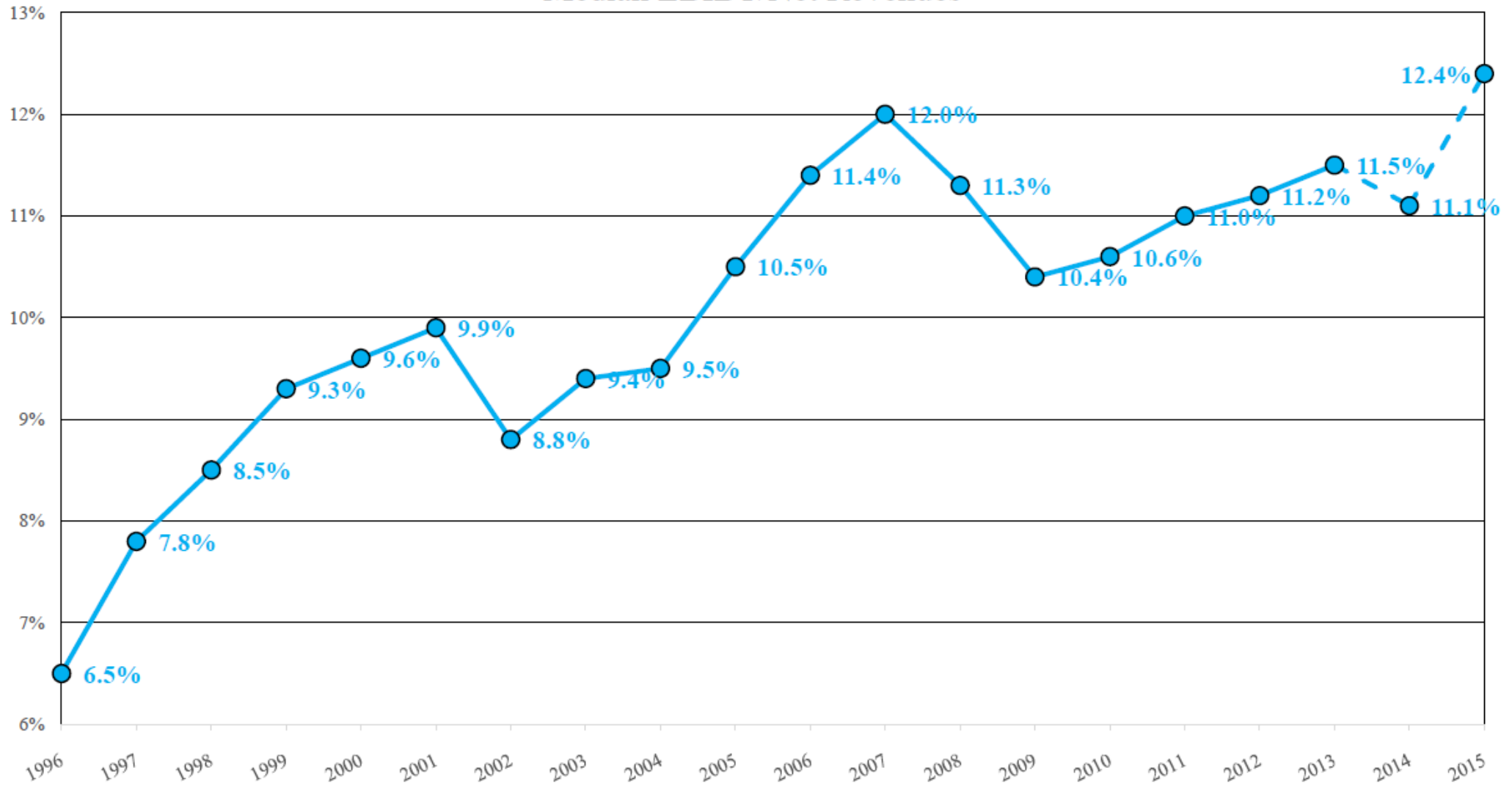


• **E/C median outperforms US GDP by 50% avg. (16 of 20 yrs)**  
**& World GDP by 33% avg. (14 of 20 yrs)**

# Profitability

## Historical Perspective

Median EBIBT/Net Revenues\*

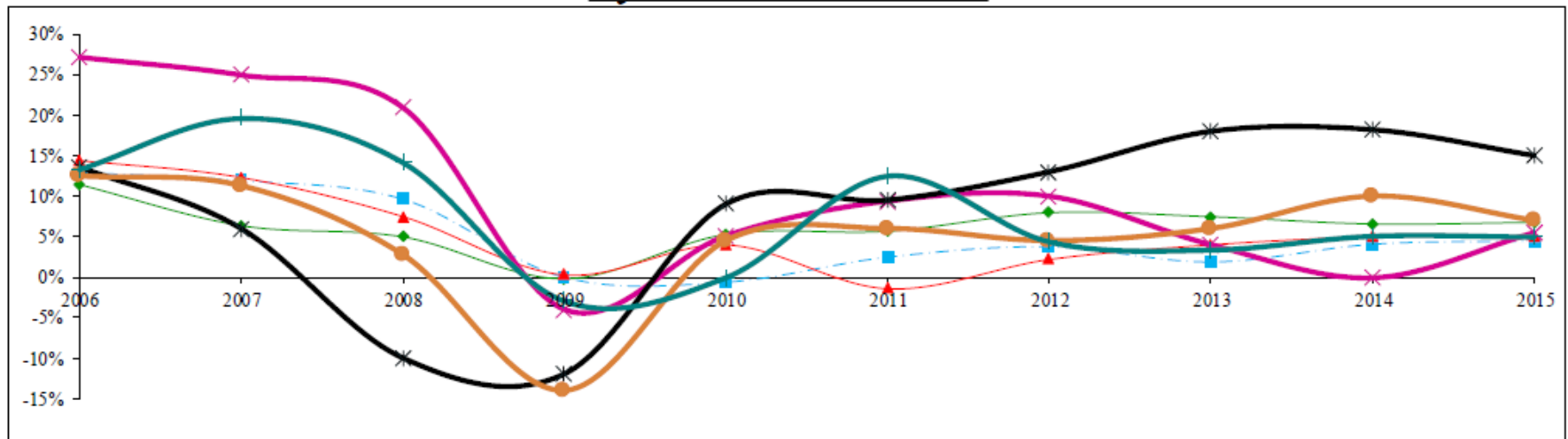
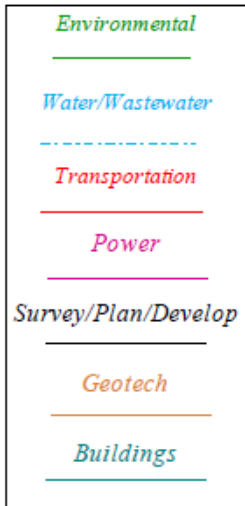


- What is causing the fairly consistent improvement over 20 years?
- Increasing business sophistication & metrics available? (= Natural Selection?)

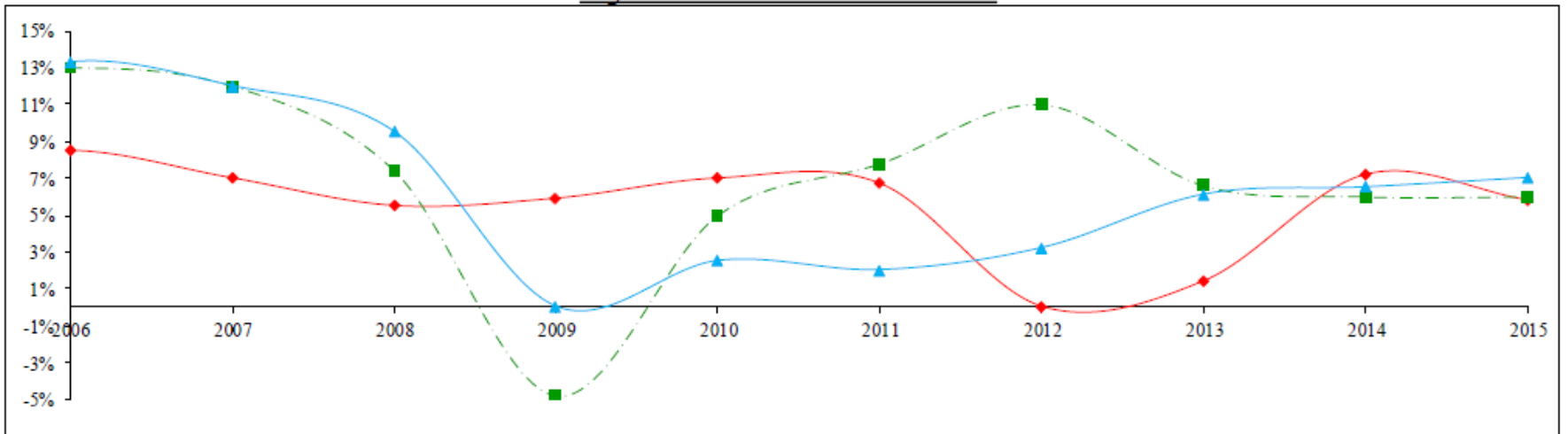
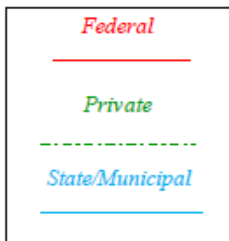
\*EBIBT = Earnings Before Interest, Bonuses and Tax; Net Revenues = Gross Revenues less pass-thrus

# Historical Growth

## by Business Sector



## by Customer Sector



• Each sector has its day: Argument for diversification?

- Engagement is vital,
- Inspire staff with stories of the great things we do,
- Leadership trumps performance management

PEOPLE





- A transformation of working practices with the appearance of new tools and methods.
- An evolution in the way our clients use and think about infrastructure
- Infrastructure becoming smarter and interactive
- New skills required continuously
- Engineering skill remains in conceiving solutions
- Small agile teams will become very competitive

A large, light green circle graphic that partially overlaps the 'TECHNOLOGY' text.

TECHNOLOGY

- YP Management Training Programme
- Importance of investing in younger staff

YOUNG PROFESSIONALS



- PUBLICATIONS:
  - The State of the World: Water Report
  - A revised copy of the “Guide of Practice”
- Committees focus on
  - Young Professionals
  - Sustainability
  - Capacity Building
  - Integrity
  - Risk and Quality
  - Contracts
  - Business Practice

FIDIC PUBLICATIONS AND COMMITTEES







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FIDIC MARAKESH 2016 /  
FIDIC\_GAMA CAPE TOWN 2017







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