Memorandum

To : FORUM Staff

From : BW

Copy to :

Date : April 7th, 2016

Subject : Macro Dashboard Q I 2016_V_1.0

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1. Summary of Results

1.1 Profits and Valuations

In Q IV 2015 the level of **US Corporate profitability** has come down significantly - **breaking out of a range in which it had been moving for 3 -4 years**. **Thus this Macro Dashboard is different from the last ca. 10 versions as something significant is happening!**

Taking the average of the metrics profitability dropped ca. 5 -7% sequentially. Q IV was the second quarter in a row of this happening. Data from Q I 2016 suggests that the slippage of profits has continued. And the share of wages as % of GDP has started to climb from its lows.

Valuations in Q I 2016 stayed largely unchanged - nothing remarkable here. CAPE edged up slightly from 26,0 to 26,2x - implying an overvaluation of nearly 60% compared to its historical averages.

As a result expected real returns from US equities continue to be below their historical average of 6,3% p.a. History suggests **real returns of ca. -2% to 0% p.a. over the next 5 – 10 years in the USA.**

1.2 Risks

We have been pointing out the risks for the high earnings level - and some of these may have materialized in Q IV 2015.

The main risk to valuations are the earnings - decreasing corporate earnings could become a trigger for a correction in valuations of equity. Yet central banks are trying to move interest

rates lower and into negative territory - thus distorting valuations of all assets relative to their historical averages.

1.3 Conclusions for FORUM

We will respond to this assessment of the situation by **staying cautious – decreasing our target net equity long exposure to 65 - 70%.** We reiterate, though, that if an outstanding investment opportunity presents itself we will take it - in the end we are bottoms-up driven.

2. Status of the Profit Cycle

2.1 US After-Tax Corporate Profits as % of GDP (Appendix 2.1)

2.1.1 Total Profits

In Q IV 2015 **US after-tax Corporate Profits** dropped sharply to **7,0%** (Q III 2015: **7,8%) of GDP**. Looking back for 2 - 3 years this is a clear reversion from what was clearly an elevated level. It remains to be seen whether this is a "statistical blip" or the Reversion to the Mean which has to happen sooner or later. If it is the beginning of a Reversion to the Mean it would significantly increase the risks for the US stock market which is largely momentum-driven.

This implies a **ratio of 126% of its 85-year average since 1929** which stands at 5,5%. **This corresponds with 0,7 standard deviations –** down from 1,2 at the end of the previous quarter.

2.1.2 Non-Financial Profits

In Q IV 2015 **US revised after-tax Non-Financial Corporate Profits** – eliminating the volatility of banking profits – **showed the same pattern:** they decreased to **5,6% of GDP –** down from 6,4% at the end of Q III 2015. This is clearly below the range of 6,0 - 6,5% in which this metric moved for most of 2012 to 2014.

The 85-year average is 4,5%. Thus in Q IV 2015 US after-tax Non-Financial Corporate Profits stood **at 125% of the long-term average. This corresponds with 0,6 standard deviations –** down from 1,1x in the previous quarter.

2.2 US Corporate EBITDA (Appendix 2.2)

The second metric we use for assessing corporate profitability is **US Corporate EBITDA** (Net Operating Surplus plus Consumption of Fixed Capital divided by Gross Value Added). It eliminates any distortions from changes in interests or taxes.

As you can see from the **Appendix 2.2** this metric stayed relatively flat:

a) In Q IV 2015 **Corporate EBITDA decreased slightly to 33,6% -** down from 34,2% in the previous quarter.

b) As the **85-year average stands at 28,5%, the latest level implies a ratio of 118% of the historical mean.**

The implied deviation from historical data corresponds to **1,4 standard deviations, slightly down from 1,6 at the end of the previous quarter and 1,7 the quarter before that**.

Historically US Corporate EBITDA has varied within a much tighter range (23-36%) than the rest of the metrics discussed in Chapter 2.1, e.g. US after-tax Corporate Profits ranged from 2% to 8,5%. This is due to EBITDA being "higher up" in the profit funnel, with **less exposure to the operating gearing** from depreciation, interests, and taxes which magnify the relative rate of changes.

2.3 Pre-Tax Non-Financial ROA (Appendix 2.3)

Pre-Tax Return on Tangible Assets ("ROTCE") of the US Non-Farm, Non-Financial sector (as reported by the Federal Reserve) in Q IV 2015 **decreased from 7,2% to 6,7%**.

The long-term average since the first publication of this time series in 1965 is 5,9%. Thus this measurement of **corporate profitability stood at ca. 113% of its long-term average** – in line with the other two profit metrics outlined above. **This corresponds with 0,5 standard deviations, down from 0,8 at the end of the previous quarter.**

2.4 FORUM Conclusions on Profitability

In Q IV 2015 all four profit metrics we follow **dropped again, this time at a clearly accelerated pace**.

Below please find a summary of the four metrics for corporate profitability compared with their respective averages and expressed in standard deviations:

Metric	% of LT Average	Standard Deviations
Total Profitability as % of GDP	126%	0,7x SD
Non-Fin. Profits % of GDP	125%	0,6x SD
Corporate EBITDA Level	118%	1,4x SD
Non-Financial ROA	113%	0,5x SD

When viewed together, the four metrics for corporate profitability in Q IV have reverted to a narrow band between 113 and 126% of their historical averages. This is a remarkable

development, we have not seen such a picture since we started publishing the Macro Dashboards:

a) the normalization of an elevated profit level to a level "somewhat" above average

b) .....in a very consistent patterns among all metrics followed which are derived from different sources and by different organizations. This consistency is worrysome, it suggests, that this is a not a statistical blip, but a broad trend.

It is also consistent with the development of the Q I 2016 earnings season in the USA: At the beginning of the year analysts predicted that earnings of the S&P 500 would increase by 1 - 2% YoY. Now the forecasts are for a drop by 7 - 8% YoY - a massive revision - implying the third consecutive quarter of decreasing profits at the S&P 500.

3. Valuations

3.1 Cyclically Adjusted PE Ratios / Shiller´s CAPE (Appendix 3.1)

For a **tops-down calibration of valuations we prefer Shiller´s CAPE**, a metric introduced in his 2000 book **“Irrational Exuberance”.** It eliminates short-term earnings fluctuations by calculating a 10-year average, inflated to today´s purchasing power based on the GDP deflator. It is calculated based on all constituents of the S&P 500. We will refer to it below as Shiller´s **C**yclically-**A**djusted **P**rice **E**arnings Multiple **(“Shiller´s CAPE” or just “CAPE”).**

Prof. Shiller reports **a CAPE of 26,2x for April 1st, 2016,** his latest update. On that date the S&P 500 stood at 2.073. This is a minor increase from a CAPE of 26,0x reported as of December 15th, 2015 the time of our latest report with the S&P 500 at 2.043 points.

The long-term average of CAPE since 1871 stands at 16,7x. This implies that **current valuations stand at 154% of their long-term average - largely unchanged from 156% at the latest letter.** In terms of statistical significance this valuation implies a **standard deviation of 1,4x** – also largely unchanged of our latest report.

3.2 Tobin´s q (Appendix 3.2)

Tobin’s q is a ratio of the **value of the stock market relative to the replacement cost of net assets.**

The application of Tobin´s q to equity market valuations has been introduced by authors Smithers and Wright in their 2000 book “**Valuing Wall Street**” and updated by Andrew Smithers in his book “Wall Street Revalued” published in 2009. For a validation we refer to an article by Harney/Tower in the Jan. 2nd 2003 edition of The Journal of Investing. Please note that **q is only calculated on non-financial companies.**

There are two generally accepted methods to calculate this ratio:

- the US Federal Reserve Flow of Funds accounts

- Smithers & Co consultants who apply an adjustment.

There are also numerous additional versions published by consultants and market participants, thus you may get diverging data.

3.2.1 Non-adjusted Tobin´s q

Based on the latest **US Federal Reserve Flow of Funds** as of December 31st, 2015 **the non-adjusted ratio has increased to 0,95** (0,93 as of September 30th, 2015).

The non-adjusted average observed since 1900 based on our calculations is 0,77, **thus the non-adjusted Tobin's q is at 124% of its long-term average.** This corresponds with **0,6 Standard Deviations**[1].

3.2.2 Adjusted Tobin´s q

Smithers & Co. adjust Tobin´s q as reported by the Fed for statistical discontinuities beginning in 1983, mainly revaluations of fixed assets to market values beginning in 1984.

At the end of Q IV 2015 **q ex-statistical discontinuities (line 20 of Table R 103) stood at 1,58** – largely unchanged from 1,57 at the end of Q III 2015. Based on the long-term average of 0,91 this implies **a level of 173% of its long-term average resp. 1,4x standard deviations.**

3.3 US Equity Market Capitalization as % of GDP (Appendix 3.3)

This is a metric which Warren Buffett cites often when discussing the level of valuations in equity markets.

Based on the Fed data **US market capitalization as % of GDP stood at 143%** at the end of Q IV 2015, up slightly from 139% at the end of Q III 2015.

As the 62-year average since the beginning of this time series in 1952 is 84%, this valuation implies **a premium of ca. 70% which corresponds to 1,7x standard deviations – slightly up from 1,6x at the time of our last Macro Dashboard.**

3.4 Summary and Conclusions

3.5.1 Summary of US-based Data

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[1] We used to calculate this ratio based on a published average of 0,63 for q, but cannot replicate this number. We have therefore decided to switch now to the number of 0,76 which is based on our own calculations.

Below please find below a summary of the level of the valuation metrics compared with their long-term averages and standard deviations **as of December 31st, 2015 for the USA**:

	% of LT Average	**Standard Deviations**
Shiller´s CAPE	154%	1,4x SD
Tobin´s q non-adjusted	124%	0,6x SD
Tobin´s q adjusted for discontinuities	173%	1,4x SD
US Equity Market Cap. as % of GDP	170%	1,7x SD[2]

Eliminating Tobin's q adjusted as an outlier, these data on equity valuation suggest that US equity markets are **overvalued by ca. 24 – 73%**. **The interpolated median of these metrics is an overvaluation by ca. 58% -** slightly up from 56% in the previous quarter.

3.5.2 Implications for Expected Long-Term Returns

If one believes in the Mean-Reversion characteristics of valuation, the most likely assumption on expected returns on equities in the next 5 – 10 years would be **returns below long-term averages**. **The long-term real return of the US equity market since 1900 including dividends has been 6,3% p.a.**

The expected return will depend on the time it takes for this **overvaluation by a median of ca. 58% to unwind. In the calculation we have assumed a real profit growth of ca. 2% p.a. - in line with real GDP:**

Years for Unwinding	**Real Return p.a.**
2	negative
5	- 5%
10	**-2 to -1%.**

Thus today´s valuations make it unlikely that a buy-and-hold strategy of an index will generate positive real returns over a 5- or 10-year period.

As our investment results over a cycle will be determined by the returns in equity markets in general plus an outperformance of 5 – 10% p.a. created from our investment approach **these expected market returns make it very difficult for us to reach the targeted 15% p.a. return in equity markets of mature economies.**

[2] All SD calculations are based on end of previous quarter numbers.

3.5 Calibration against other Investors

GMO – an asset manager whose approach we share in many respects – in their **7-year Asset Class Return forecast** as of February 28th, 2016, **expects real returns of:**

a) **0,8%** (November 30th, 2015: -0,8%) p.a. for US Small Caps

b) **-1,2%** (November 30th, 2015: -2,1%) p.a. for US Large Caps.

This is more optimistic than our forecasts due to the timing: they made their assessment as of February 28th, 2016 - when markets had just sharply corrected by ca. 10% YTD. When correcting for this change in timing the two forecasts appear consistent.

3.6 European Valuations

With regard to CAPE, **European valuations as of January 29th, 2015, differ materially from the US Market**. Based on Shiller's CAPE valuation methodology valuations compare as follows:

	Current CAPE	Hist. Average	Dividend Yield	Exp. 10Y Return
USA	26,2x	16,7x	1,8%	-2 - 0% p.a.
Europe	14,8x	16,0x	3,5%	6 - 7% p.a.
Emerging Markets	12,8x		3,4%	7 - 8% p.a.

Hence the European market has a significantly lower CAPE than the USA. But when compared to its own historical average – for the period 1979-2013 –it appears **fairly valued.**

Emerging Markets offer the best value in today's stock markets.

4. Risks to Profits and Valuations

We have been **perma-bears on profits** as we believe in a reversion to the mean. It appears that the many warning signals which we have listed as potential triggers for a normalization of profits may have been right. We are anxious to monitor whether the correction observed in Q IV 2015 will continue.

With respects to **valuations** we also believe in reversion to the mean. But here the Central Banks are distorting the picture by moving increasingly into negative interest territory. This creates a demand for yield-generating assets - and stocks paying a dividend with a reasonable dividend yield (see above) fall into this category. Thus it is difficult to make any predictions what will trigger a bursting of the valuation bubble.

The **sudden drop in corporate profits could be such a trigger.**

5. Conclusions

5.1 Expected Economic Conditions and Equity Returns

In summary we draw the following conclusions:

a) Based on the level of profitability we expect margin compression in the next 5 - 10 years. **Average Future Conditions** of the economy will not be as good as they were in the last up-cycle which lasted from 2003 – 2008.

b) **Based on valuations of equity markets, equity returns over the next 5 – 10 years** in the mature economies should be assumed nil or even slightly negative**!**

5.2 Range of Potential Outcomes

The spread of potential outcomes remains wide:

a) stock markets could evolve further into bubble territory

b) or correct significantly before year-end.

And as always it will be impossible to time any of these directions.

6. Recommendations for the Tops-Down Portfolio Construction

In Q IV 2015 profit levels have come down a by historical standards for the second quarter in a row. Data from Q I 2016, i.e. the current quarter, suggest that this slide is continuing.

This suggests that in 2016 earnings per share may be stagnating or even declining - **making multiples look stretched.**
Given that we see a profit decline, but the US stock market has not reacted, the risk-/reward situation looks worse than a quarter ago.

Therefore we **adjust our target tops-down asset allocation to a net long exposure of 65 - 70%:**

a) a short book of 10 - 15%.

b) a net cash level (i.e. the cash available after covering the shorts) of 20 - 25% of AUM.

In any case we at FORUM will act opportunistically on a bottoms-up philosophy - acting on the specific opportunities the stock market will be offering us.

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Appendix 1.1: Historical Relationship between Standard Deviations and Returns for CAPE

Stock Market Return as a Function of # Standard Deviations from Average PE/ 10

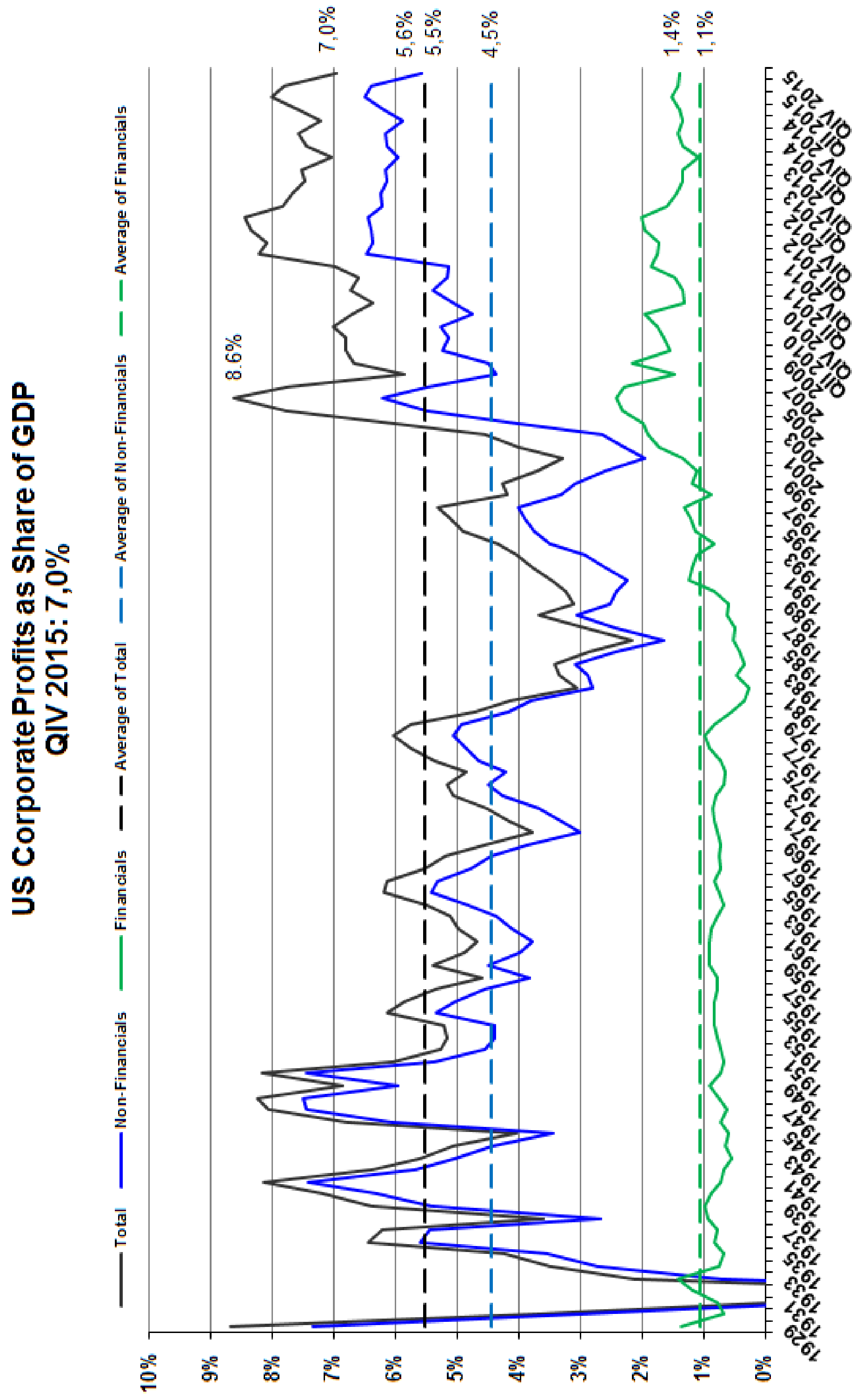
Status as of November 2nd 2010

	Deviation from average as a # of standard deviations	# months	Nominal return		
			2 years	5 years	10 years
Negative deviations	Less than -3	1	14.5%	5.2%	9.9%
	Between -3 and -2	79	5.3%	4.8%	7.0%
	Between -2 and -1	294	7.8%	7.8%	4.6%
	Between -1 and -0.5	226	10.5%	6.8%	6.6%
	Between -0.5 and 0	159	7.8%	5.3%	6.3%
Positive deviations	Between 0 and 0.5	169	2.1%	3.6%	5.6%
	Between 0.5 and 1	178	2.1%	2.8%	4.1%
	Between 1 and 2	297	1.6%	3.8%	2.5%
	Between 2 and 3	71	1.1%	1.7%	2.3%
	More than 3	56	0.0%	-2.7%	-0.1%
Total		1530	5.0%	4.8%	4.7%

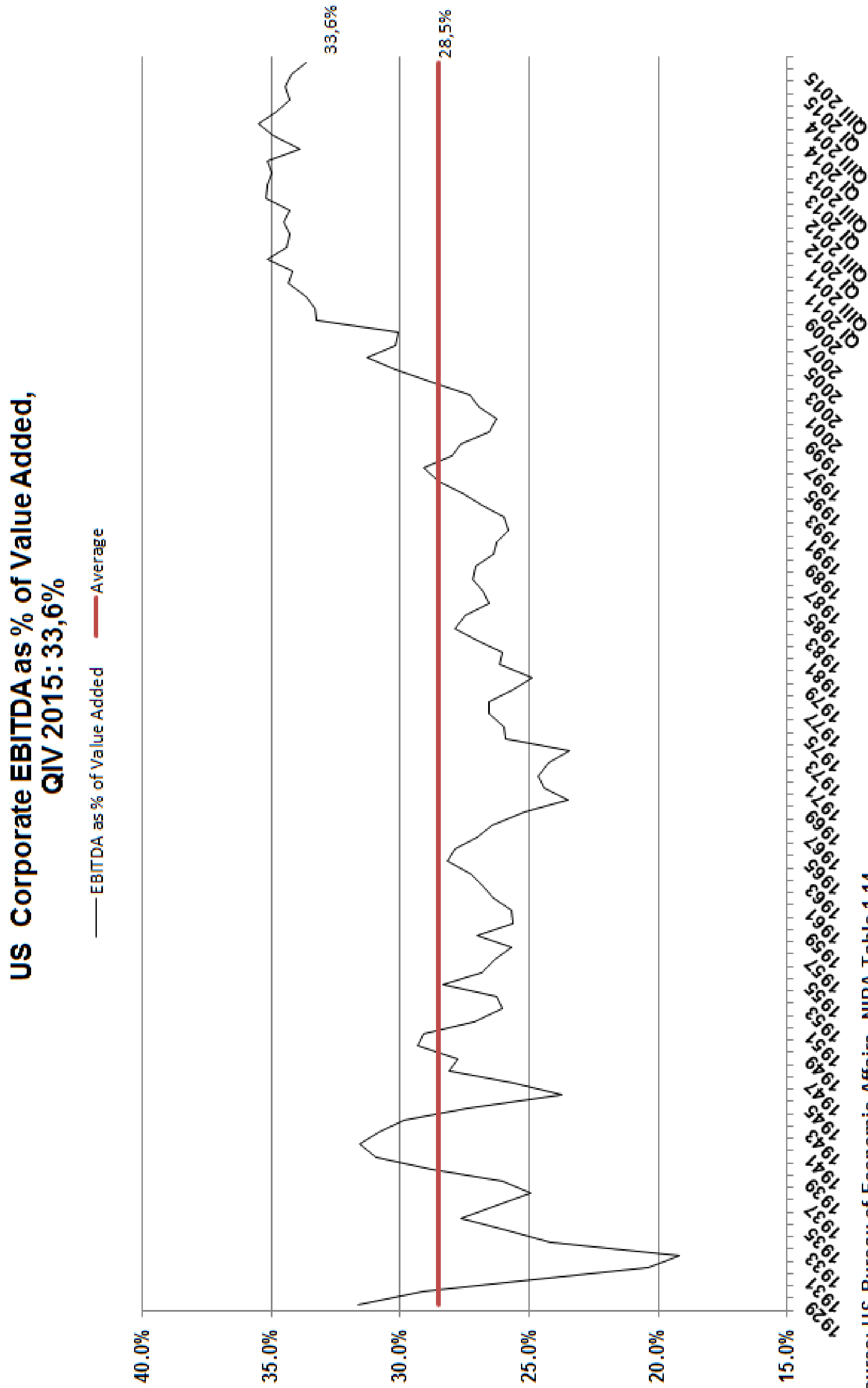
48% (Between -1 and 1)
86% (Between -2 and 2)

Period covered: 1881-2010
Source: Shiller, FORUM Research

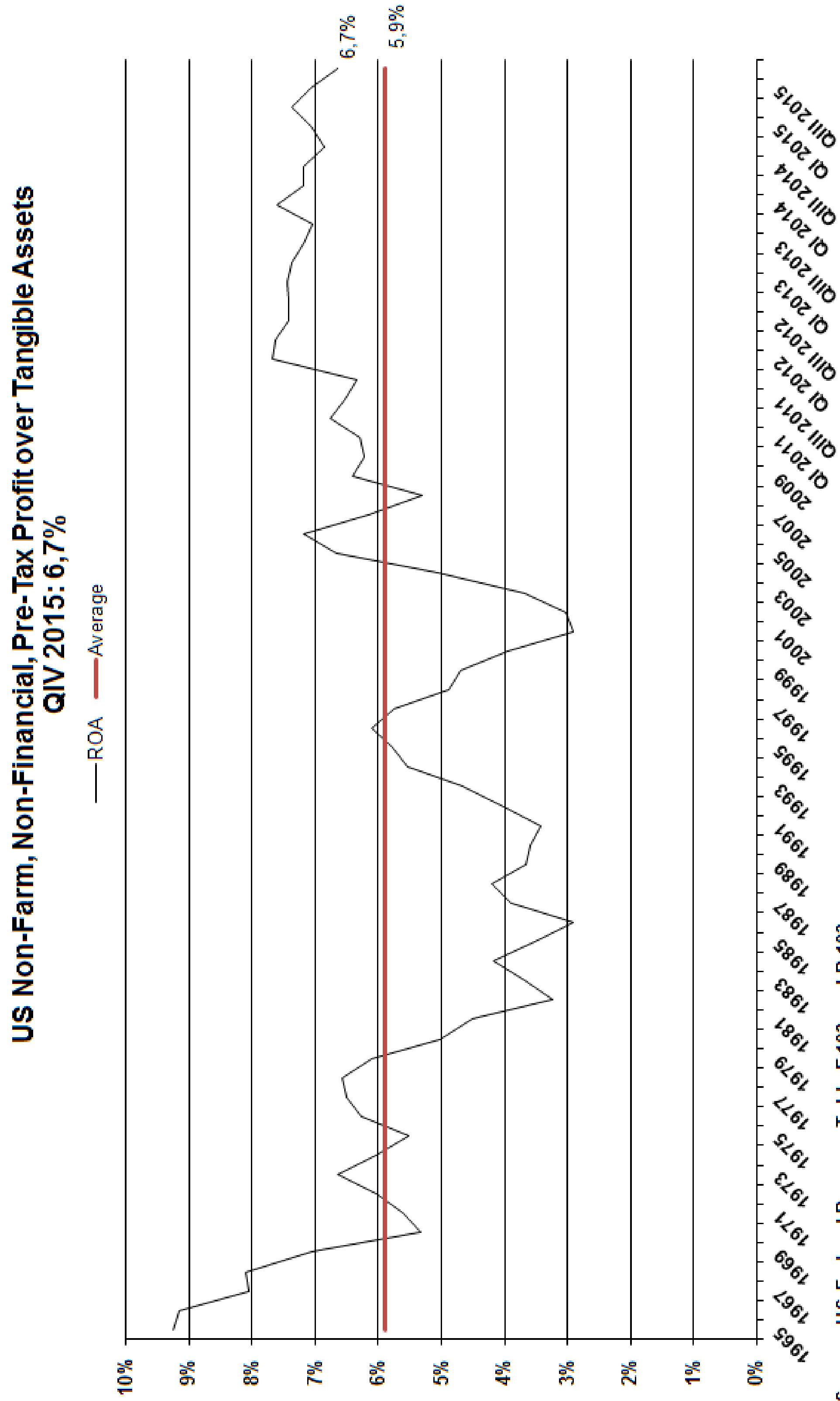
Appendix 2.1: US Corporate Profits as % of GDP



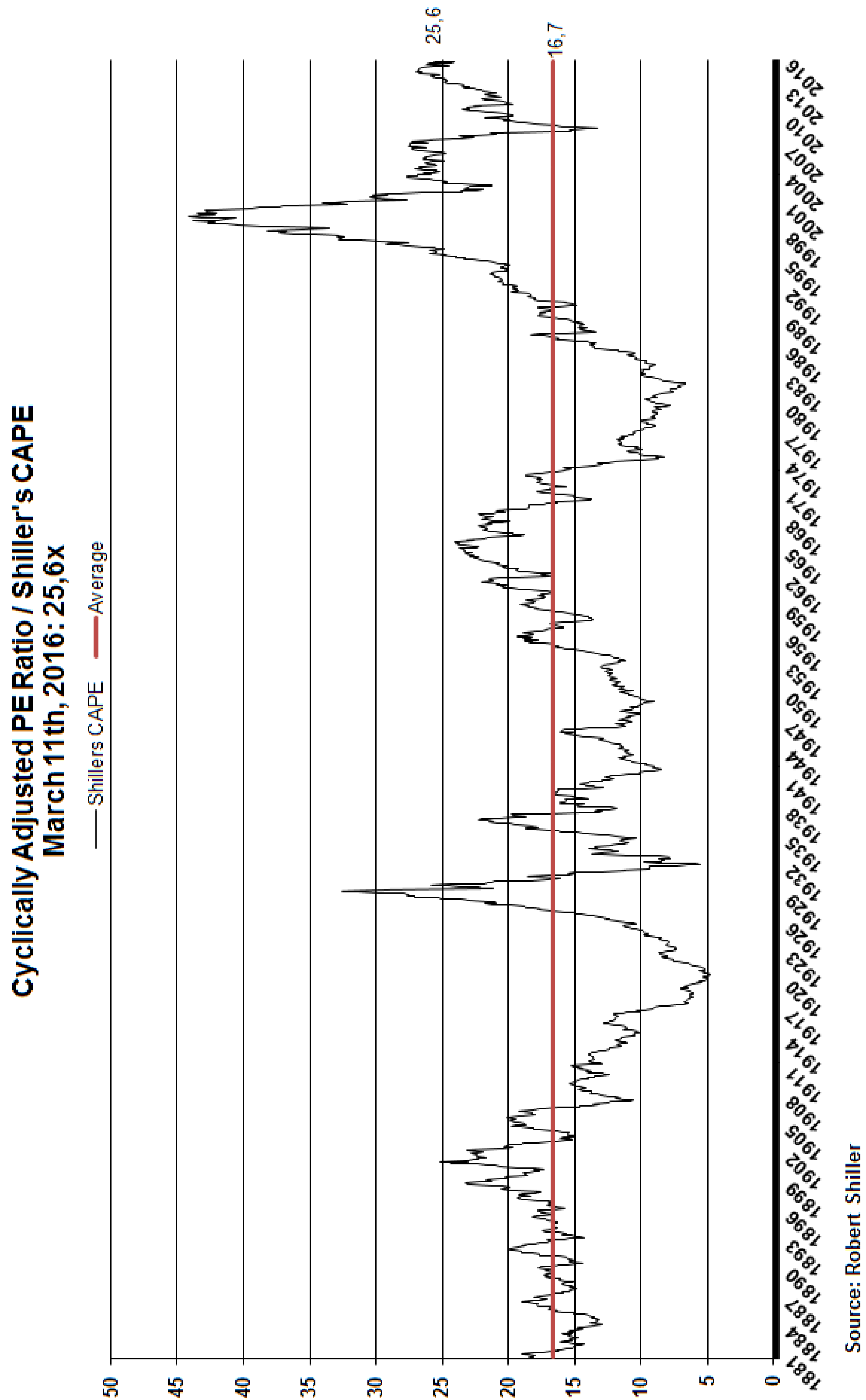
Appendix 2.2: US Corporate EBITDA



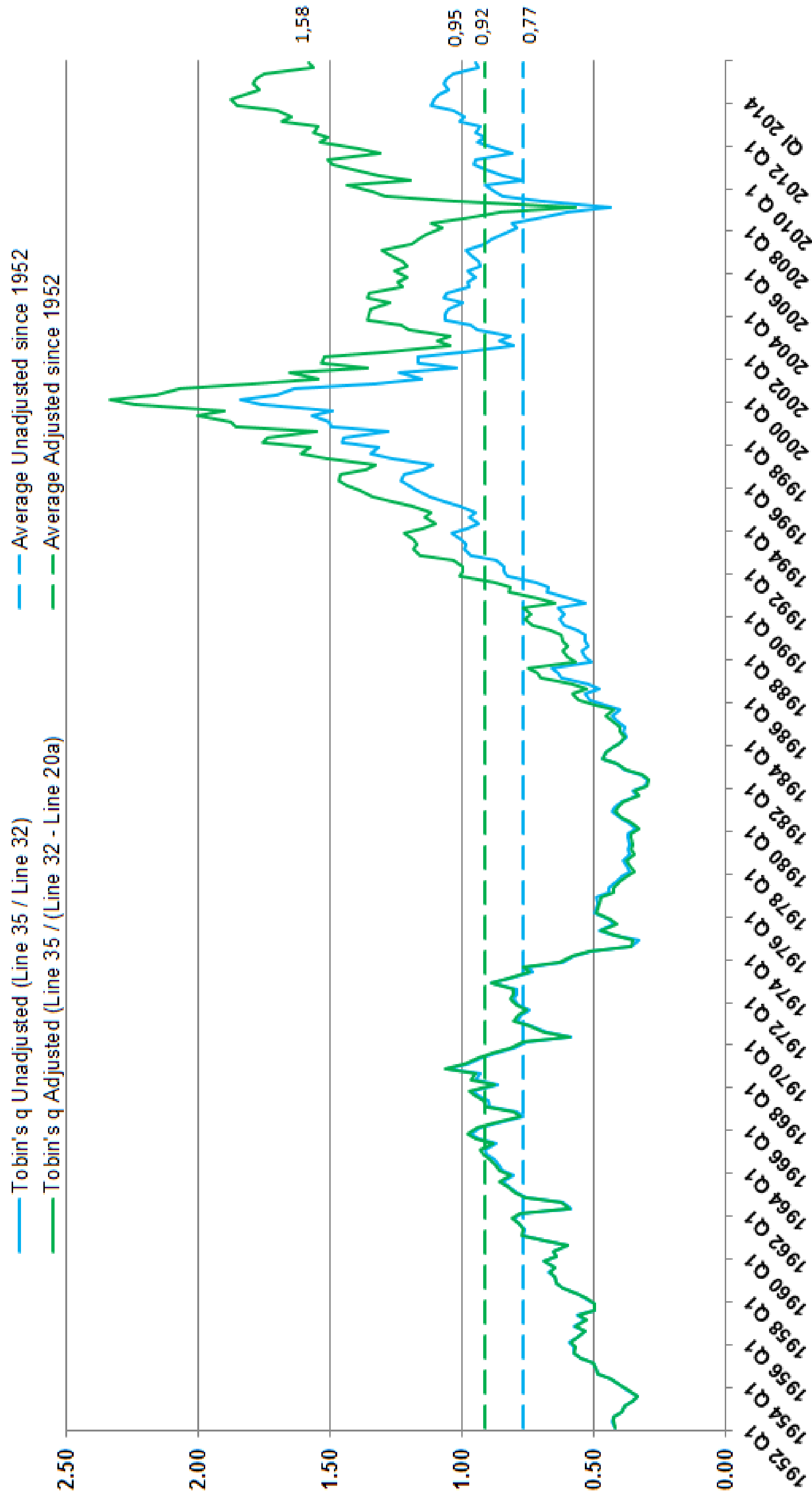
Appendix 2.3: US Corporate Profitability Measured as ROA



Appendix 3.1: Cyclically Adjusted PE Ratios / Shiller´s CAPE



Appendix 3.2 – Tobin's Q



Appendix 3.3 – Capitalization of US companies as % of GDP