Memorandum

To : FORUM Staff

From : BW

Copy to :

Date : October 23rd, 2016

Subject : Macro Dashboard Q III 2016

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1. Summary of Results

1.1 Profits and Valuations

In Q II 2016 the level of **US Corporate profitability** shows a mixed picture. In the last edition we warned that a Reversion to the Mean may have started from elevated levels of profitability. With the data unclear in the last quarter we will have to wait for another quarter to get more evidence about the trend momentum.

Nevertheless the level of corporate profitability is at the high levels that were last seen right after WWII and in the run-up to the financial crisis 2008/2009.

Valuations in Q III 2016 increased slightly again - but not remarkably. CAPE increased slightly from 25,6x 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

At the end of Q III 2016 the risks which have been around for some time are still lingering around - **and markets tend to ignore them**. We would rank them as

a) Southern Europe - there are no efforts whatsoever for structural reforms as there are either leftist/populist governments or no governments (Spain). Given the

ongoing discrepancies in productivity/competitiveness and fiscal discipline between the North and the South **there will be another €-crisis - for sure.**

b) China **infrastructure spending boom and indebtedness**

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 II 2016 the Bureau of Economic Analysis ("BEA") revised data on profitability based on "new data available" retroactively back to Q I 2014. As a result profitability numbers for this period came down by ca. 1/10. After some exchanges with them we have the feeling that this change should be partly viewed as a revision ("new information leading to better data quality"), partially as a change in methodology - limiting the comparability of data pre- and post-2014.

We will not go through the complexity of making adjustments for this change to improve comparability in order to keep complexity limited. Rather we propose to calibrate data from BEA with the other profit metrics we review in this chapter.

In Q II 2016 **US after-tax Corporate Profits** increased to **6,7%%** (Q I 2016: **6,5%**) **of GDP**. Due to the change made the level of profits is now below the previous peaks which were reached before right after the end of WWI and in 2007 - right before the financial crisis.

The increase in Q II 2016 is the second sequential increase in a row - suggesting positive profit momentum.

The current level of profitability implies a **ratio of 121% of its 85-year average since 1929** which stands at 5,5%. **This corresponds with 0,6x standard deviations.** Due to methodological change made both metrics imply a lower degree of overvaluation.

2.1.2 Non-Financial Profits

In Q II 2016 **US revised after-tax Non-Financial Corporate Profits** – eliminating the volatility of banking profits – **showed a similar pattern:** they increased to **5,2% of GDP** – up from 5,4% at the end of Q I 2016.

The 85-year average is 4,4%. Thus in Q II 2016 US after-tax Non-Financial Corporate Profits stood **at 118% of their long-term average. This corresponds with 0,6x standard deviations** – again both metric are lower than last quarter before the revision.

2.2 US Corporate EBITDA (Appendix 2.2.a)

These data are also compiled by the BEA and changed the same way as outlined above.

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** in Q II 2016 **Corporate EBITDA increased slightly to 33,5% -** slightly up from 33,3% in the previous quarter.

Appendix 2.2.b shows that the share accounted for by wages as % of GDP only increased slightly to 33,3% in the quarter (Q I 2016: 33,2%). Based on these data wage pressure is not material. Data from labor market statistics show a divergent view with stronger wage increases, so we are careful about interpreting this information.

As the 85-year average of Corporate EBITDA stands at 28,6% of GDP, the latest level implies **a ratio of 117% of the historical mean.**

The implied deviation from historical data corresponds to **1,3x standard deviations, slightly down from 1,4x in the previous quarter**.

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 II 2016 **increased to 5,9% (Q I 2016: 5,7%).**

The long-term average since the first publication of this time series in 1965 is 5,6%. Thus this measurement of **corporate profitability stood at ca. 101% of its long-term average** – in line with the other two profit metrics outlined above. **This corresponds with 0,1x standard deviations, down from 0,4x at the end of the previous quarter.**

2.4 S&P 500 – Earnings per Share (Appendix 2.4)

In Q II 2016 LTM earnings per Share (“**eps**”) of the S&P 500 stood at $ 86,8 – a decline of 1,0% vs. Q I 2016. This is the sixth consecutive quarter where S&P 500 eps have declined sequentially.

Appendix 2.5 shows that eps was growing strongly above its trendline in the years to 2014. Eps are is now reverting to trend-line growth - via a slight contraction.

Thus this metric comes to a very different conclusion from the macroeconomic data collected by statistical agencies. There are various explanations offered for this divergence:

a) the S&P constituents have significantly more exposure to global business

b) ??????? PRR to request Russell 2000 eps data time series

2.5 FORUM Conclusions on Profitability

In Q II 2016 we have a split picture of profit metrics

a) macroeconomic data suggest increasing profits

b) the earnings reported by publicly-quoted companies are decreasing.

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	121%	0,6x SD
Non-Fin. Profits % of GDP	118%	0,6x SD
Corporate EBITDA Level	117%	1,3x SD
Non-Financial ROA	101%	0,1x SD
S&P 500 eps (vs. Trendline)	121%	n.a.

When viewed together, the four metrics for corporate profitability in Q II has reverted to a narrower band between 101% and 121% of their historical averages - indicating that profits are certainly not elevated for the whole economy.

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 26,6x for September 6th, 2016,** his latest update. On that date the S&P 500 stood at 2.128. This compares to a CAPE of 26,2x reported at the end of the previous quarter.

The long-term average of CAPE since 1871 stands at 16,7x**.** This implies that **current valuations stand at 159% 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 1,6x** – up from 1,4x at the time 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 March 31st, 2016 **the non-adjusted ratio has increased to 0,97** (0,98 as of March 31st, 2016).

The non-adjusted average observed since 1900 based on our calculations is 0,77, **thus the non-adjusted Tobin's q is at 126% of its long-term average.** This corresponds - unchanged - with **0,7 Standard Deviations**[1].

[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.

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 II 2016 **q ex-statistical discontinuities (line 20 of Table R 103) stood at 1,77** – up from 1,67 at the end of Q I 2016. Based on the long-term average of 0,92 this implies **a level of 177% of its long-term average resp. 1,5x 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 for market capitalization and BEA data for GDP **US market capitalization as % of GDP stood at 146%** at the end of Q II 2016, up from 144% the end of Q I 2016.

As the 62-year average since the beginning of this time series in 1952 is 84%, this valuation implies **a level of 170% which corresponds to 1,7x standard deviations – unchanged.**

3.4 Summary and Conclusions

3.5.1 Summary of US-based Data

Below please find below a summary of the level of the valuation metrics compared with their long-term averages and standard deviations **as of March 31st, 2016 for the USA**:

	% of LT Average	**Standard Deviations**
Shiller´s CAPE	156%	1,6x SD
Tobin´s q non-adjusted	126%	0,7x SD
Tobin´s q adjusted for discontinuities	177%	1,5x SD
US Equity Market Cap. as % of GDP	146%	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. 26 – 56%**. **The interpolated median of these metrics is an overvaluation by ca. 42% -** up from 64% % in the previous quarter.

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

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. 60% 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	**-3 to -2%.**

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.**

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 June 30th, 2016, **expects real returns of:**

a) **-1,8% p.a.** (June 30th, 2016: -1,1%) p.a. for US Small Caps

b) **-3,1% p.a.** (June 30th, 2016: -2,7%) p.a. for US Large Caps.

This is largely in line with our RTM forecasts.

3.6 European Valuations

With regard to CAPE, **European valuations as of September 30th, 2016 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	26,5x	16,7x	1,8%	-2 - 0% p.a.

Europe	14,7x	16,0x	3,5%	6 - 7% p.a.
Emerging Markets	13,6x		3,2%	7 - 8% p.a.

Source: Starcapital

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.**

4. Risks to Profits and Valuations

We have been **perma-bears on profits** as we believe in a Reversion to the Mean/RTM. In the last Macro Dashboard we speculated that profits may have started a process of reverting to the Mean - based on 2 quarters of declines in the Macroeconomic statistics plus calibration with the profit outlook of quoted companies.

Now we get contradictory data on the direction of profits - with the "bottoms-up" data taken from company reporting confirming our thesis, while it is not reflected in the "tops-down" macroeconomic data. For our investment decisions we take the sceptical view and see risk in the profitability of US corporations.

With respects to **valuations we also believe in Reversion to the Mean/RTM**. 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.**

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 headwind for margins in the next few 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, i.e. the end-phase of global demand growth in many sectors driven by the growth of China.

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

5.2 Range of Potential Outcomes

The spread of potential outcomes **remains wide:**

a) stock markets could evolve further into bubble territory. The driver is "TINA" - There Is No Alternative. This has never been a good guide for investment returns.

b) or correct significantly.

And as always it will be **impossible to time any of these directions. The art of investing is to construct a portfolio which participates in the long thesis - while increasing hedges against a strong correction.**

6. Risks

We think there are many more risks in the global economy today than there were 1 year ago. The main risks we see are

a) **Risk of the € hitting another crisis**. This in turn can be triggered by several factors. Underlying is a lack of financial discipline in these countries, they keep on increasing their level of indebtedness while real GDP tends to stagnate. There are no structural changes envisioned by the governments, most of them are left-side (Greece, Portugal) or centre-left (Italy).

   These policies are clearly unsustainable and we are 100% sure that we will see a repeat of the Southern European crisis as evidenced in 2012.

   The second danger to the € is the demise of what used to be large parties. They are losing out in all countries to smaller parties which tend to follow radical positions, either with respect to Europe or to nationalist policies. This leads to a freezing of the ability of governments to act - and trigger the required reforms.

b) **China Growth risk**. It appears that the real economy in China appears to be managing adjustments in many respects: from resource-intensive industries to knowledge-intensive industries and from export-led to internal consumption-led. But this is achieved with an enormous build-up of debt at various levels: central governments, local governments, the official banking system and the shadow banking system.

   In its latest report the IMF has presented data on the level of indebtedness in China and warned against its sustainability. Even in China economic € 1,- of incremental GDP is achieved with an increase in debt > € 1,0. When taking total debt in the economy this multiple appears to be close to 3x. This is unsustainable.

c) **The unconventional policies of the Central Banks** which keep on expanding their balance sheets. We were shocked to learn recently that by now the ECB buys corporate bonds directly from companies - at rates close to nil. There are numerous

secondary effects which are not known - they are building up at corners of the economy which we may not even be aware of.

This is one of the biggest experiments in the history of finance - and nobody knows what will happen once the central banks will revert to a "normal" policy.

d) **Individual political risks**, e.g. from elections in the USA in November 2016 and France in early 2017 and the referendum in Italy.

e) **Slowing growth in world Trade**: we have been pointing towards this risk for quite some time. Recent data suggests that the number of non-tariff impediments to cross-border trades have been increasing significantly in the last few years - and growth in international trade has slowed significantly.

7. Conclusions and Recommendations for the Tops-Down Portfolio Construction

7.1 Conclusions

In Q II 2016 profit levels in the USA appear to be reverting to normal levels. The correction is moderate, though. Some macro data suggest there is even no correction so far.

Risks have clearly increased significantly - in some cases from the continuation of unsustainable policies, mostly about increasing debt or weakening of the Balance Sheets of the Central Banks - in other cases from events like US presidential elections.

At the same time equity markets "continue to dance" and fund managers benchmarking themselves against indices feel a pressure to stay invested "as long as the music plays".

7.2 Recommendation

We have once more reduced our **target tops-down asset allocation to a net long exposure, now to 60 -65%:**

a) a short book of 10 - 15% (unchanged)

b) a net cash level (i.e. the cash available after covering the shorts) of 25 - 30% of AUM. This is up from 20 - 25%

Thus we are pulling in our horns somewhat - we are afraid that we are approaching the last leg of an unsound run-up in valuations and we do not be fully committed to that. This may cost us short-term performance and outperformance - but we feel will lead to a better result over 3 - 5 years.

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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2.3	US Corporate Profitability measured as ROA
2.4	Real (CPI Adjusted) TTM EPS of S&P 500
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3.2	Tobin´s q
3.3	Capitalization of US Companies as % of GDP

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

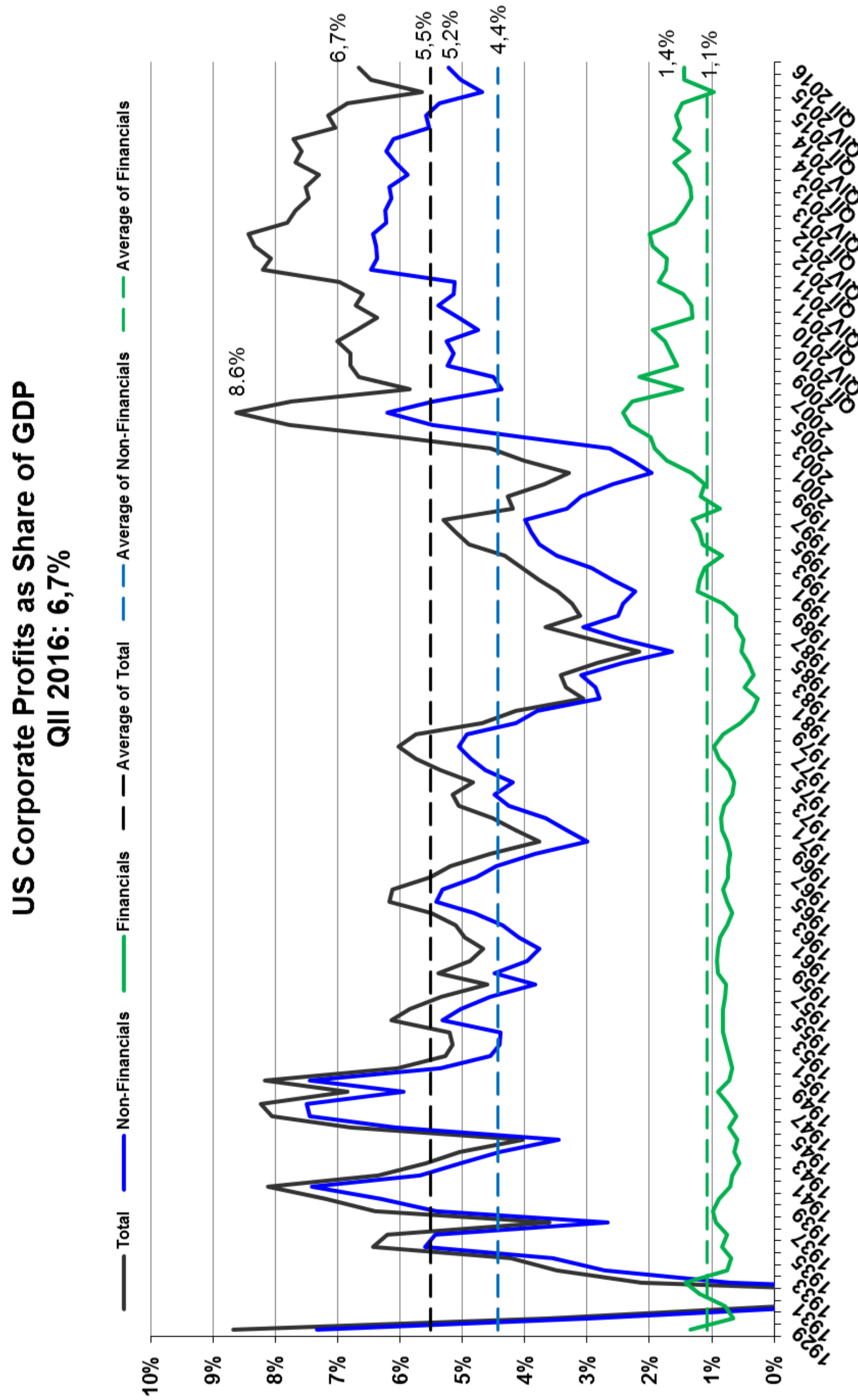
Status as of November 2nd 2010

	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%

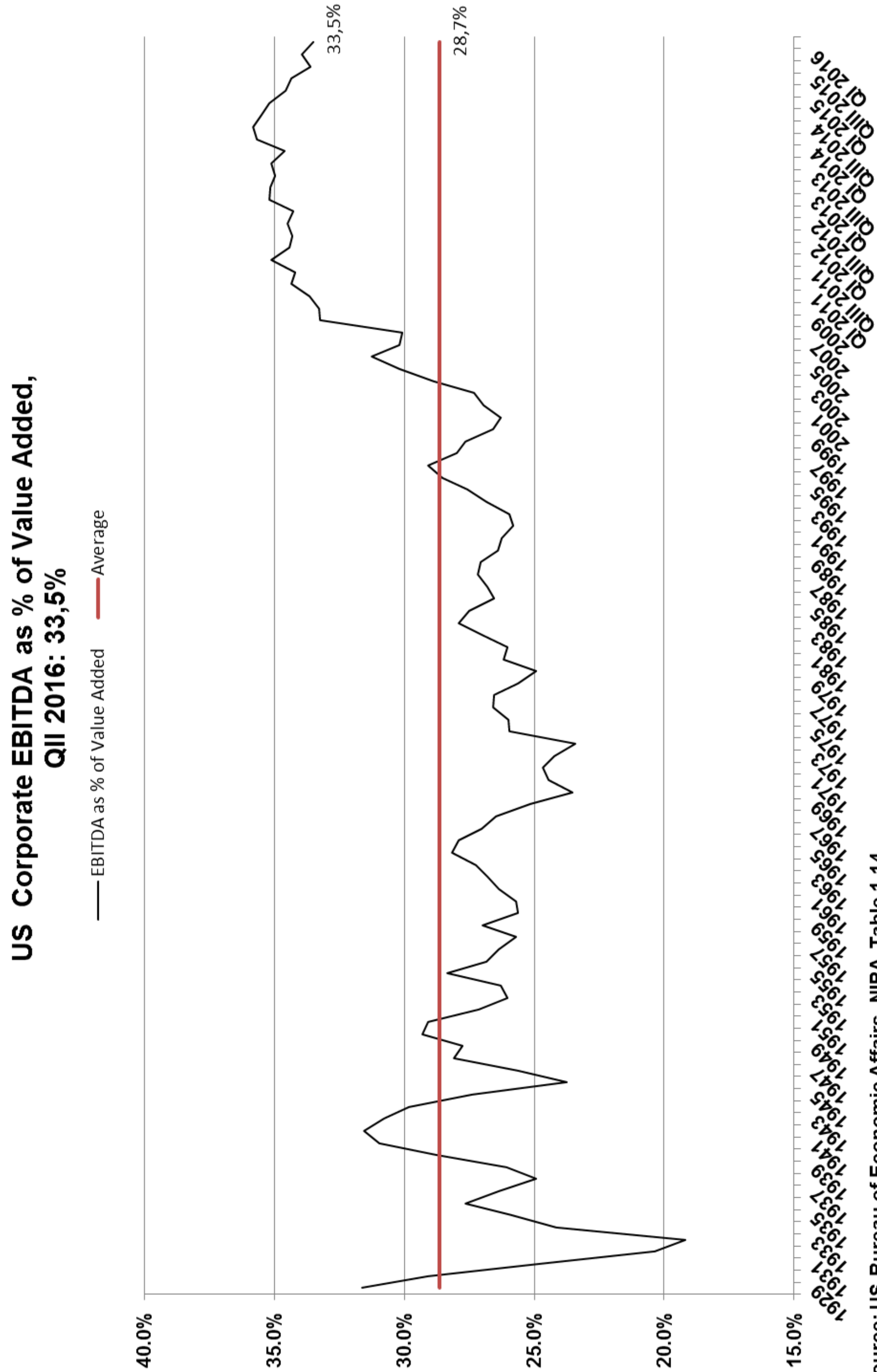
48% (rows between -1 and 1)
86% (rows between -2 and 2)

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

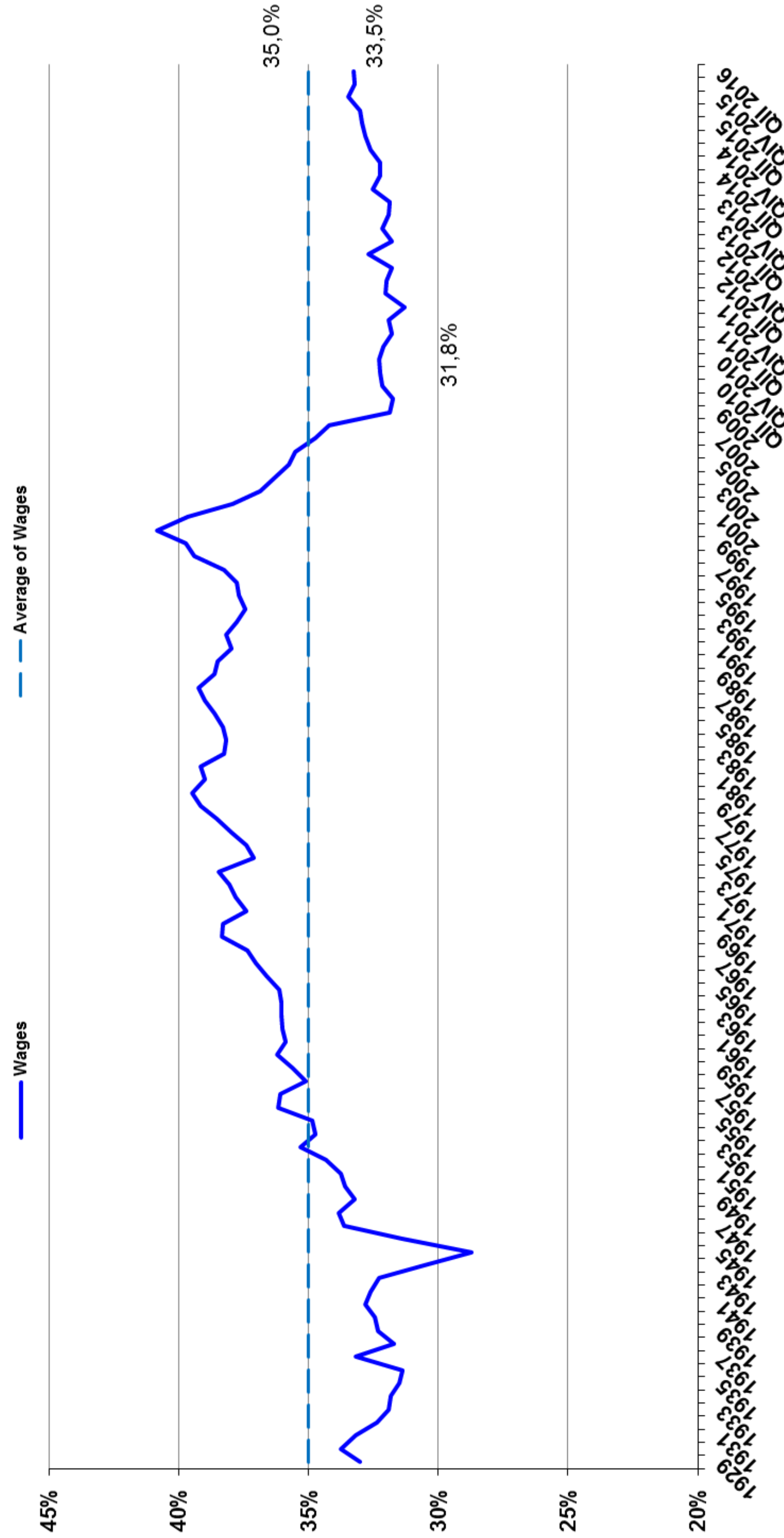
Appendix 2.1: US Corporate Profits as % of GDP



Appendix 2.2.a: US Corporate EBITDA

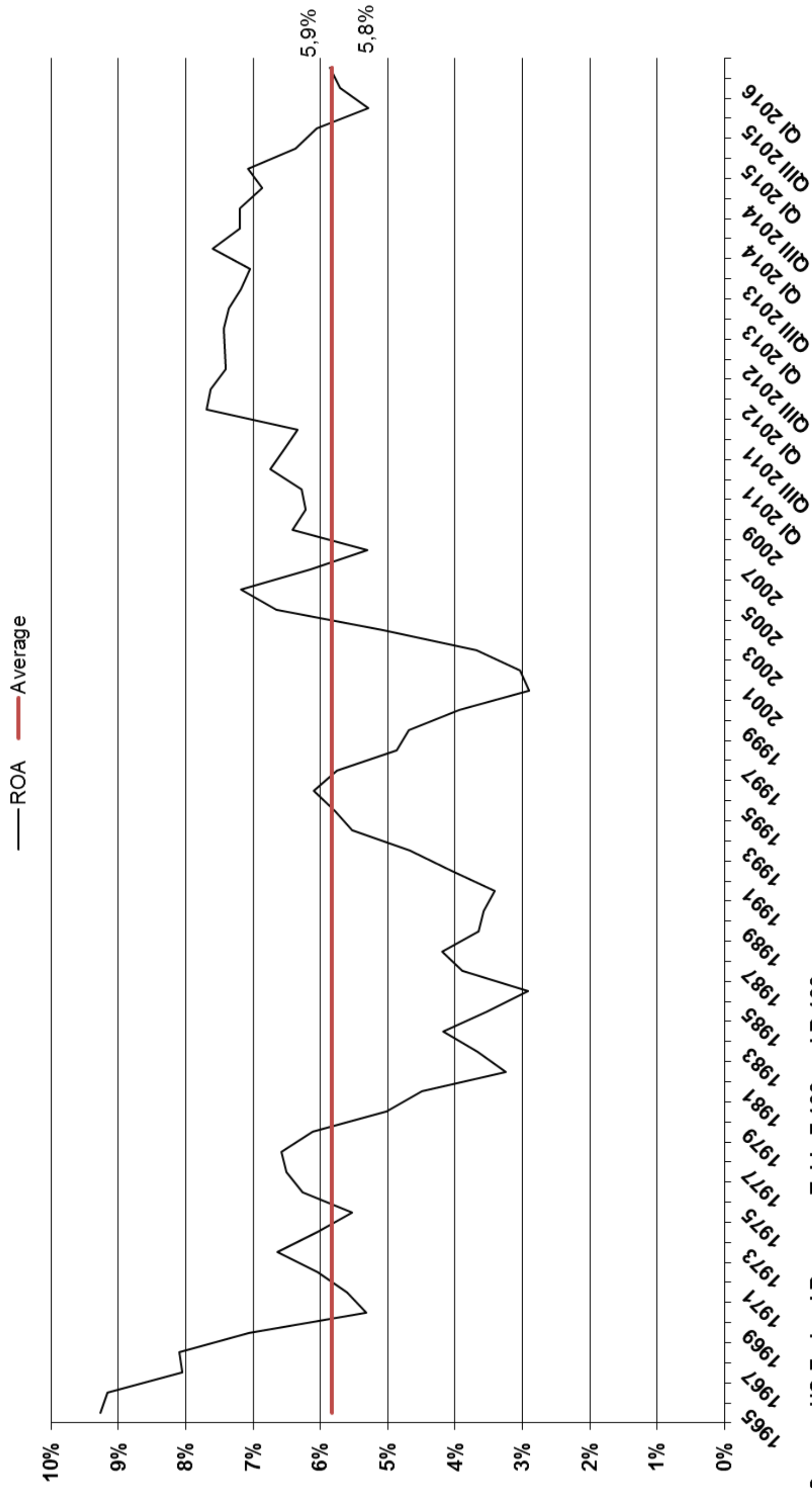


Appendix 2.2.b: US Corporate Wages as % of GDP



Source: US Bureau of Economic Affairs (BEA), NIPA Table 1.14

Appendix 2.3: US Corporate Profitability Measured as ROA


US Non-Farm, Non-Financial, Pre-Tax Profit over Tangible Assets
QII 2016: 5,9%
ROA
Average
5,9%
5,8%
10%
9%
8%
7%
6%
5%
4%
3%
2%
1%
0%
1965
1967
1969
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QI 2011
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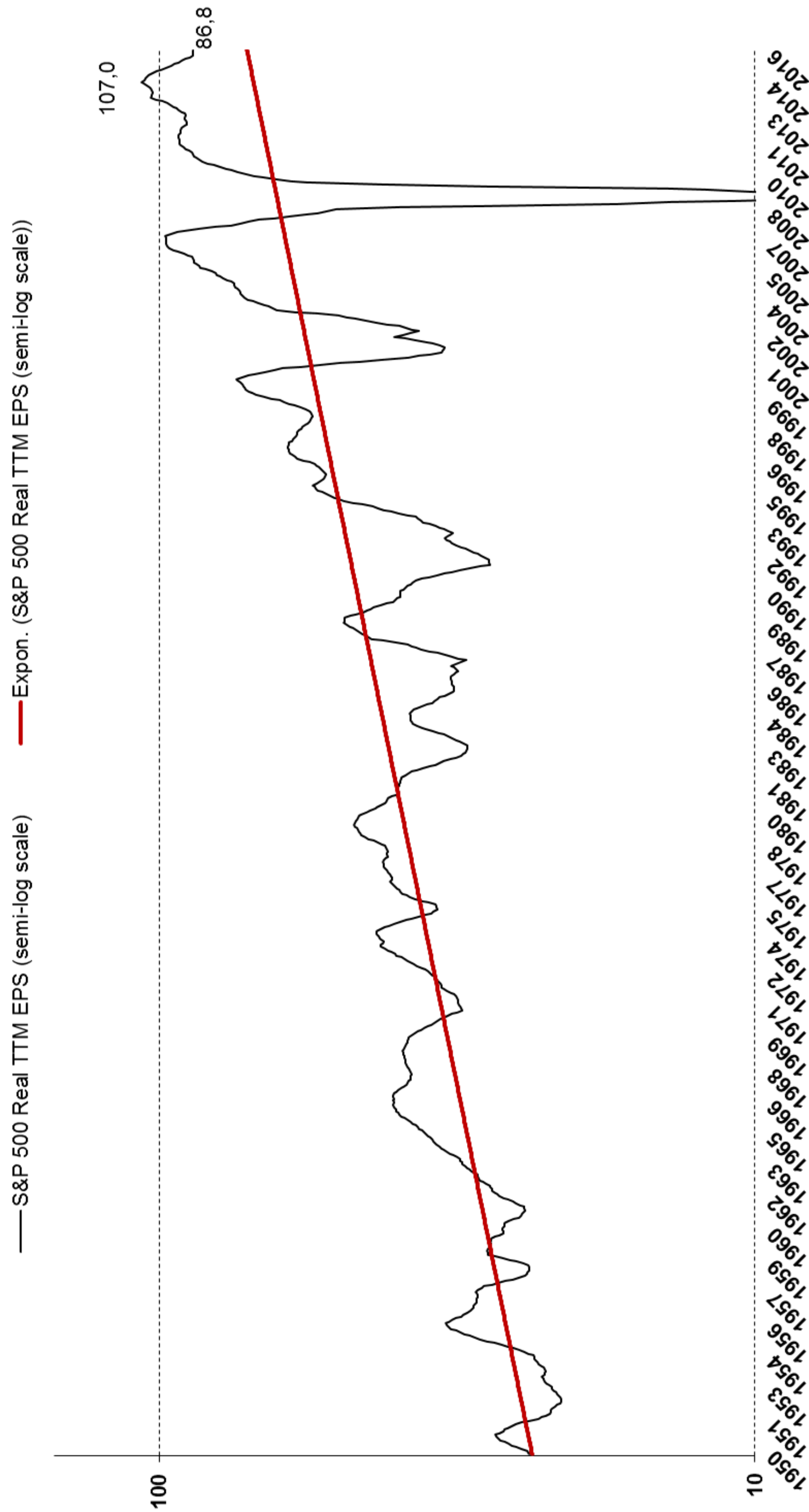
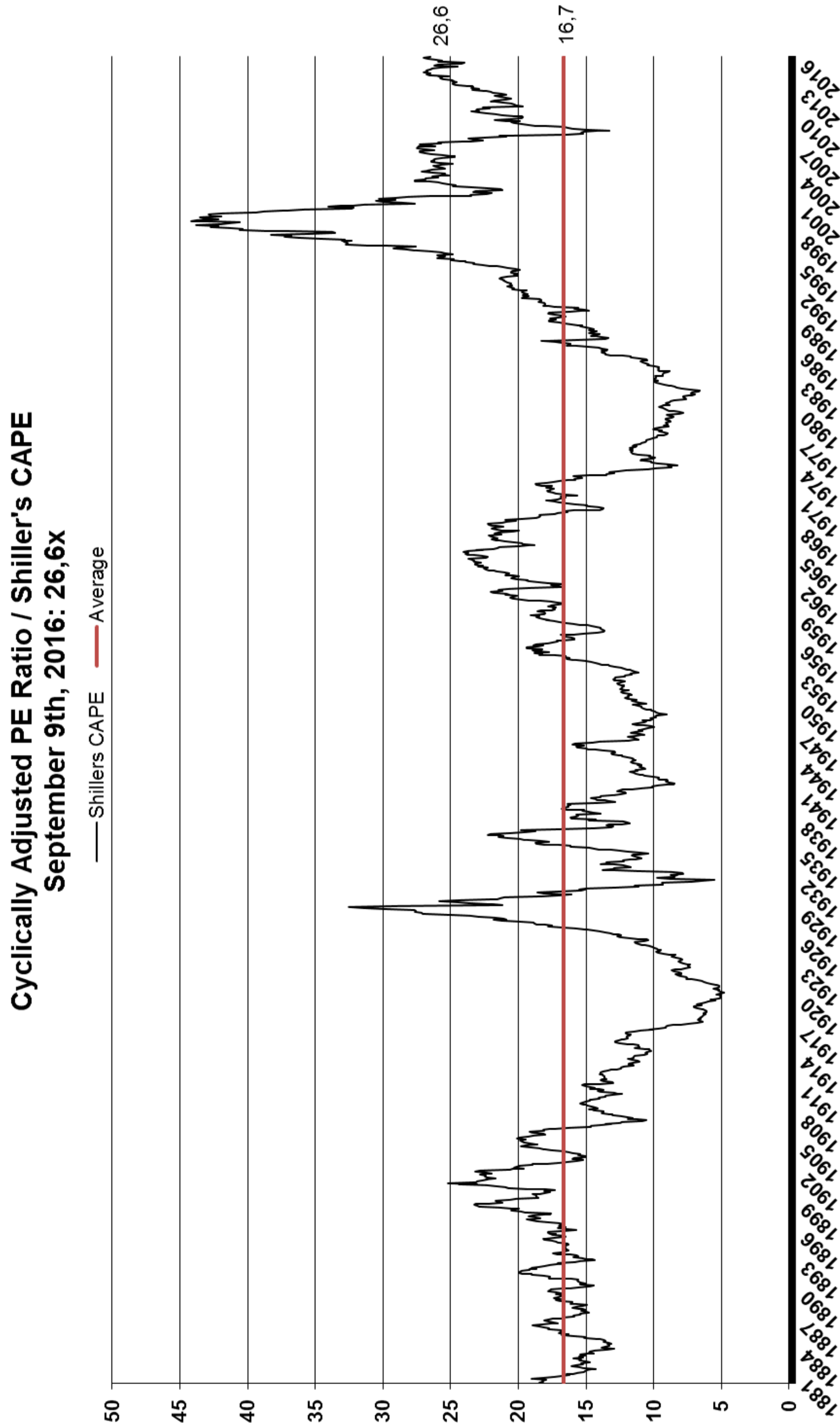
QI 2015
QIII 2015
QI 2016
Source: US Federal Reserve, Table F 103 and B 103

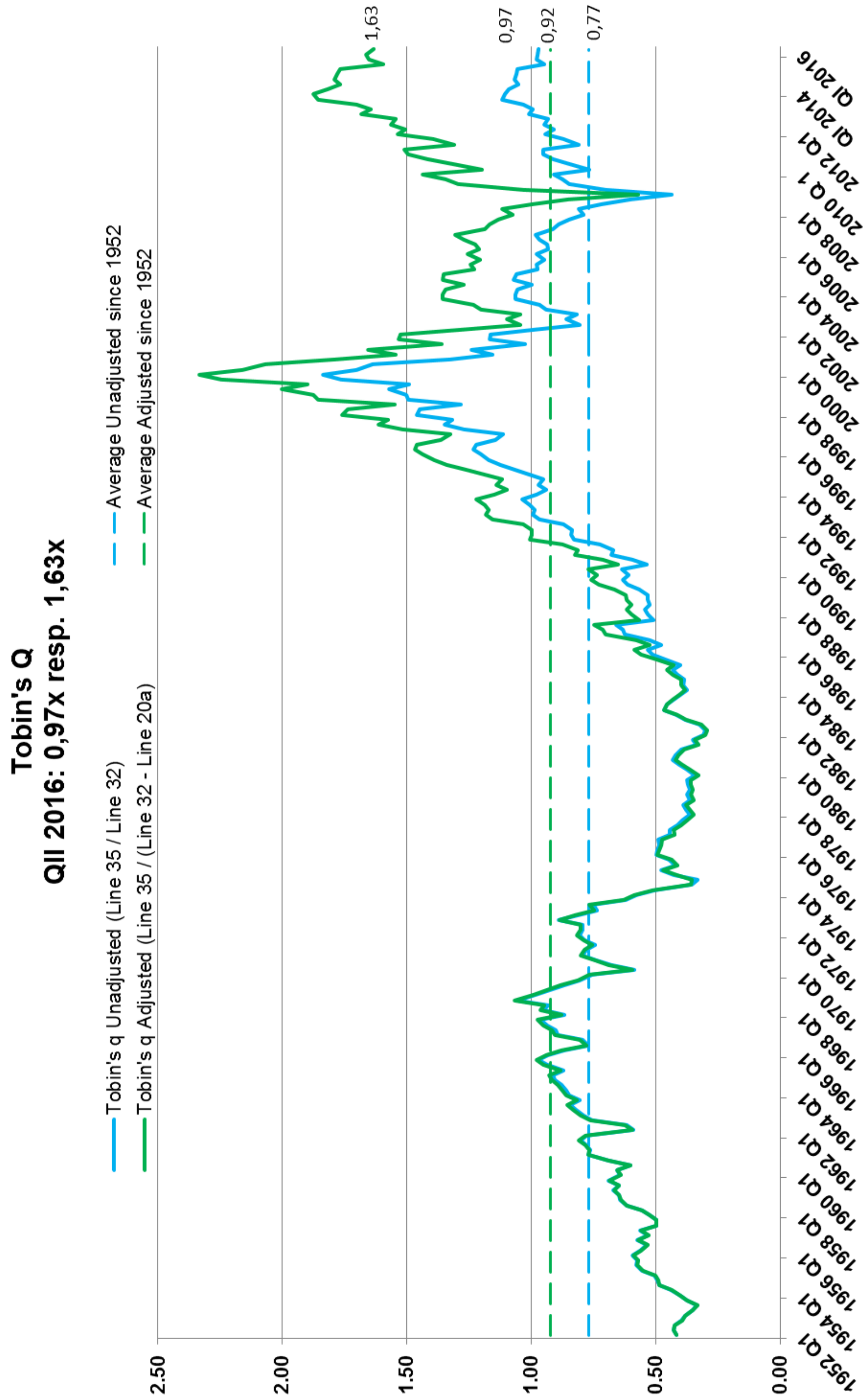
Appendix 2.4: Real (CPI Adjusted) TTM EPS of S&P 500



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