Point-In-Time vs. Lagged Fundamentals

This time i(t')s different?

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The common starting point for alpha discovery and risk analysis is the backtesting of historical company financials using a research database. Whether internally constructed or licensed, research databases can be distinguished by two primary formats – Point in Time and Non-Point in Time.

This paper focuses on the major practical differences between Point in Time (PIT) and Non-Point in Time (Non PIT) data for both backtesting and historical research. PIT data is defined by its ability to answer two questions: *When* was the information known? and *What* information was known at the time?

PIT data is stamped with the date of the company filing or press release, thereby eliminating look-ahead and look-behind biases (*when* was it known). Non-PIT data, on the other hand, is stamped with the data's fiscal period end date.[1]

To mitigate look-ahead/look-behind biases when working with Non PIT data, researchers apply time lags to these data sets. This paper shows that the use of lags with Non-PIT data is attended by a host of problems, caused by filing regulations that differ across regions, changes in filing requirements over time within a region, and differing regulations for different types of companies.

PIT data reflects the information that was known at the time (*what* was known). Non-PIT databases typically overwrite historical data with data that was later changed or corrected by the company, due to errors, accounting changes, mergers/acquisitions, etc., so users cannot uncover the numbers as they were originally presented.

Thus, Non-PIT databases typically overwrite an important source of value – preliminary results – that is available within PIT databases. In addition, Non PIT data obscures accounting fraud and other accounting anomalies. For example, in October 2001 Enron Corporation massively restated its results for the periods 1997 to 2000 to correct accounting violations. The original (fraudulent) data, unavailable in many Non-PIT databases, remains available to PIT users to this day.

Finally, this paper finds that PIT backtests produce significantly different results than lagged Non-PIT data using common factors. In addition, when single factors are combined into multifactor tests these differences in results may become magnified.

The paper begins with an example illustrating the differences between PIT and lagged Non-PIT figures within a backtest analysis. A discussion of the disclosure requirements for certain developed markets follows, accompanied by actual observations of historical disclosure patterns. Finally, results from quantitative factor analysis based on "S&P Capital IQ Point-In-Time" fundamentals and "S&P Capital IQ - Latest"[2] fundamentals are compared, answering the question of whether lagged Non-PIT data is a valid approximation of reality.

[1] In actuality, PIT data is stamped with two date series for each data point: the fiscal period end date for the data and the date that the data was released to the public.
[2] In terms of database structure "S&P Capital IQ – Latest" is very similar to other third party "Non-PIT" fundamental databases. By overwriting a certain data point (e.g. Total Revenues for Fiscal Year 2013) with the latest published figure referring to that item it omits valuable information made public in preceding filings.

Point-In-Time vs. Lagged Fundamentals - Explained

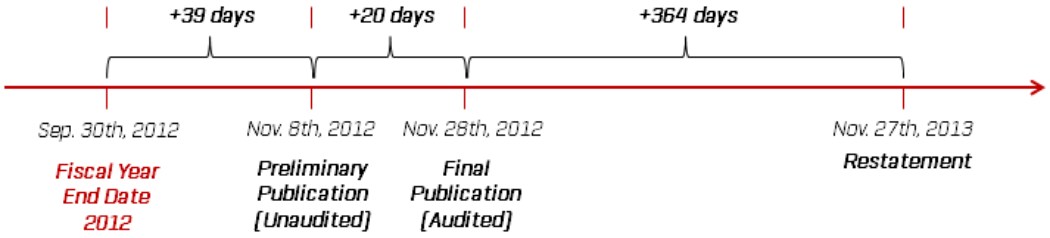
PIT financial statement information reflects publicly available information at the time that it was made public as of any specific historical data request date.[3]

Graph 1 illustrates an example with Siemens AG whose 2012 fiscal year (FY) ended on September 30th, 2012.

Siemens AG issued a press release 39 days after its fiscal year end on November 8, 2012 reflecting the unaudited, therefore preliminary results for FY 2012.

On November 28, 2012, 20 days after the press release, the company published its fully audited annual results. The annual report showed changes (see "*Operating Income*") to the results initially disclosed in its press release.
One year later, on November 27, 2013, Siemens AG issued its FY 2013 audited results along with restated results for FY 2012. All major items shown in the example were affected by adjustments.

Graph 1: Visualization of publication timeline for selected items for fiscal year 2012 – Siemens AG



Total Revenue	78.296	78.296	77.395 (-1,2%)
Operating Income	7.044	6.929 (-1,6%)	6.372 (-9,5%)
Net Income	4.458	4.458	4.151 (-6,9%)
Cash Flow from Operations	6.972	6.972	7.110 (+2,0%)

All values in millions of EUR; %-values in parenthesis reflect cumulative restatement compared to preliminary publication
Source: S&P Capital IQ, Data as of March 27, 2015

Using Siemens AG, Tables 1 and 2 compare PIT as well as lagged and unlagged "Standard Non-PIT" operating income-related values on two different request dates. Note that even when the "Standard Non-PIT" data is lagged by 45 or 75 days, it often does not represent the available market information.

A "Standard Non-PIT" fundamentals database uses a company's fiscal period end date as the single reference date for data requests. Actual company publication dates and/or database input dates are not available.

Researchers using "Standard Non-PIT" data for quantitative analysis overcome this deficiency by applying the so-called "lags" to the fiscal period end date. These lags are based on generalizations of historical disclosure pattern observations. The most commonly used lagging

[3] Point-In-Time refers to the actual financial statement filing or reporting date (containing balance sheet, cash flow, income statement etc.) as of which all market participants could have become aware of via publicly available sources. It does not refer to the *database input date*, as of which data vendors have collected, inserted or distributed the information.

mechanisms differentiate between U.S. and non-U.S. data sets by applying two months (2M) or three months (3M) lags for monthly request frequencies respectively. For research tasks conducted on a higher frequency (e.g. weekly) these lags may be altered to, for example, 45, 75 or 90 days.

Table 1: Operating Income (Fiscal Year 2012) – Data request as of **September 30, 2013**

Historical Data Request Date	PIT	Standard Non-PIT (not lagged)	Standard Non-PIT (lagged 45 days)	Standard Non-PIT (lagged 75 days)
September 30, 2012	-	6.929	-	-
October 31, 2012	-	6.929	-	-
November 15, 2012	7.044	6.929	6.929	-
November 30, 2012	6.929	6.929	6.929	-
December 31, 2012	6.929	6.929	6.929	6.929

Table 2: Operating Income (Fiscal Year 2012) – Data request as of **September 30, 2014**

Historical Data Request Date	PIT	Standard Non-PIT (not lagged)	Standard Non-PIT (lagged 45 days)	Standard Non-PIT (lagged 75 days)
September 30, 2012	-	6.372	-	-
October 31, 2012	-	6.372	-	-
November 15, 2012	7.044	6.372	6.372	
November 30, 2012	6.929	6.372	6.372	-
December 31, 2012	6.929	6.372	6.372	6.372
December 31, 2013	6.372	6.372	6.372	6.372

All values in millions of EUR;
Source: S&P Capital IQ, Data as of March 27, 2015

In addition to the imprecision introduced by lags, "Standard Non-PIT" fundamentals providers overwrite their financial statement items once new information becomes available and is inserted in the database. Therefore, "Standard Non-PIT" databases only provide the latest available information set for a specific reference period.[4]

As shown in the Siemens AG example, this leads to two or more different data sets researchers must work with, depending on the day of the data request and the number of research repetitions. Therefore deploying a "Standard Non-PIT" dataset for quantitative research purposes leads to results which are not replicable at a later re-run for the same research task. This makes comparisons and the verification of analytical conclusions very difficult.

Disclosure Requirements

The following section outlines select disclosure requirements for Continental Europe, the U.S. and UK to showcase regulatory differences across countries.

[4] Depending on the "Standard Non-PIT" database rules subsequent restatements of financials after a predefined time frame might be completely omitted.

Continental Europe

Starting with the regulatory oversight on a national level, evaluating a potentially overarching EU wide regulation as well as assessing exchange specific rules must all be considered to detect the appropriate disclosure requirements. Table 3 presents a limited excerpt.

Table 3: Disclosure Requirements – Select European Markets

Exchange Listing	Statement Type	Filing Requirements	Filing Type
Euronext Paris[a]	Quarterly	45 days	Unaudited
	Semi-Annually	2 months	Unaudited
	Annually	4 months	Audited
Alternext (Exchange Regulated [ER])[b]	Semi-Annually	4 months	Unaudited
	Annually	4 months	Audited
Deutsche Börse – Prime Standard[c]	Quarterly	2 months	Unaudited
	Annually	4 months	Audited
Deutsche Börse – General Standard[c]	Semi-Annually	2 months	Unaudited
	Annually	4 months	Audited
Deutsche Börse – Entry Standard (ER)[c]	Semi-Annually	3 months	Unaudited
	Annually	6 months	Audited
SIX Swiss Exchange ("Swiss Equity")[d]	Semi-Annually	3 months	Unaudited
	Annually	4 months	Audited

[a] *Source: Autorité des Marchés Financies (AMF) - Listed companies & corporate financing Financial & accounting disclosures: Disclosure requirements; May 27, 2013*

[b] *Source: Euronext - Alternext Markets Rule Book - Effective date: April 7, 2014*

[c] *Source: Deutsche Börse - General Standard für Aktien, Prime Standard für Aktien, Entry Standard für Aktien*

[d] *Source: SIX Exchange Regulation - Richtlinie Rechnungslegung, RLR, 09/12, SIX Exchange Regulation - Kotierungsreglement, 02/14*

Reporting requirements have gone through numerous changes in the past and will continue to evolve. For example, under the new EU Transparency Amending Directive (2013/50/EU) the deadline for publishing semi-annual financial reports shall be extended from two to three months after the reporting period end as small and medium-sized issuer reports are expected to receive more attention from market participants and thereby becoming more visible. In addition "Member States should not be allowed to impose in their national legislation the requirement to publish periodic financial information on a more frequent basis than [...] for half-year financial reports. However, Member States should be able to require issuers to publish additional periodic financial information if such a requirement does not constitute a significant financial burden, and if the additional information required is proportionate to the factors that contribute to investment decisions."[5]

[5] Source: DIRECTIVE 2013/50/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, 06.11.2013

U.S.

In December 2005, the Securities and Exchange Commission (SEC) introduced a new category of "large accelerated filers". The deadline to report their 10-K (annual) statements was lowered by 15 days to 60, the deadline for 10-Q (quarterly) statements was left unchanged.

Table 4: SEC Deadlines for Filing Periodic Financial Reports

Filer Type	Market Capitalization Threshold*	Form 10-K Deadline	Form 10-Q Deadline
Large Accelerated Filer	>= 700	75 days for fiscal years ending before Dec. 15th, 2006 and 60 days for fiscal years ending on or after Dec. 15th, 2006	40 days
Accelerated Filer	75 to < 700	75 days	40 days
Non-accelerated Filer	< 75	90 days	45 days

* In Millions of USD

Source: http://www.sec.gov/answers/form10k.htm*; Securities and Exchange Commission, RIN 3235-AJ2*

U.K.

Companies seeking to be listed on the London Stock Exchange (LSE) can choose between the Main Market Segment (divided into "Premium" & "Standard") and the less regulated Alternative Investment Market (AIM).

Listing on the Main Market requires fulfillment of certain regulatory criteria, such as having three years of audited statements (or a shorter period since incorporation for the "Main Market Standard") and a minimum market capitalization of £700,000. As of November 2014, over 1,500 companies have been listed on the Main Market. Since the creation of AIM in 1995 over 3,000 smaller, growing companies have sought floatation with 1,099 active UK and international companies listed as of November 2014.[6] For both, the Main Market as well as the AIM the disclosure requirements differ (see Table 5).

Table 5: Disclosure Requirements – LSE's Main Market vs. AIM

Equity Listing Segment	Main Market (Premium, Standard)	AIM
Annual Financial Report	4 months after FY ends (Disclosure & Transparency Rule 4)*	6 months after FY ends (AIM Rule 19)**
Semi-Annual Financial Report	2 months after period ends (Disclosure & Transparency Rule 4)*	3 months after period ends (AIM Rule 18)**

** Source: United Kingdom Listing Authority disclosure rules*

*** Source: London Stock Exchange – AIM Rules for Companies – May 2014*

Both market segments do not require a quarterly publication. Nevertheless most large cap companies issue quarterly reports on a voluntary basis.

[6] Source: http://www.londonstockexchange.com/companies-and-advisors/aim/aim/aim.htm

Historical Disclosure Observations

As discussed in the previous section the regulatory environment not only differs across regions but also changes across time and within markets, for instance depending on the size of the company and the filing period (e.g. quarter end vs. fiscal year end).
To understand how companies are deviating from the boundaries set within their respective regulatory framework historical filings observations of more than 5,500 companies from 1994 onwards across five different universes [U.S. Large & Mid Caps, U.S. Small Caps, United Kingdom (UK – Main Market), Developed Europe[7] ex. UK, Japan] were considered. This resulted in approximately 225,000 quarterly observations allowing us to analyze:

- the actual number of days companies require to publish financial results
- the percentage of unaudited, preliminary filings
- the magnitude of later restatements.

The universes have been segmented in line with common quantitative research practice and similarity of regulatory frameworks.

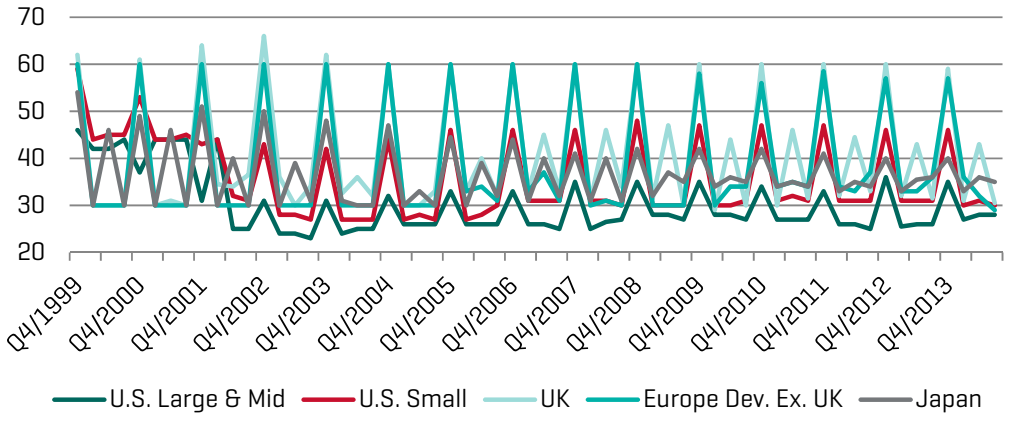
Days to File

Analyzing "Non-PIT" financial statement information quantitatively requires applying a lagging mechanism to potentially minimize "look-ahead" biases. The lag defines the number of calendar days by which the fiscal period end date is shifted to be closer to the actual publication date (see for an example Table 1 and 2).

The following analysis reveals the actual disclosure dispersion for five universes over time, expressed in deciles.

In general it can be inferred that the amount of time companies require to report their financial results has shortened since 1999 across all filing periods (quarterly, semi-annually & annually), measured in median calendar days. Results which are required to be verified by external auditors take longer as identified by large spikes across all regions for Q4 reports.

Chart 1: Days to First Publication (Median) – All Regions



Source: S&P Capital IQ, Data as of March 27, 2015

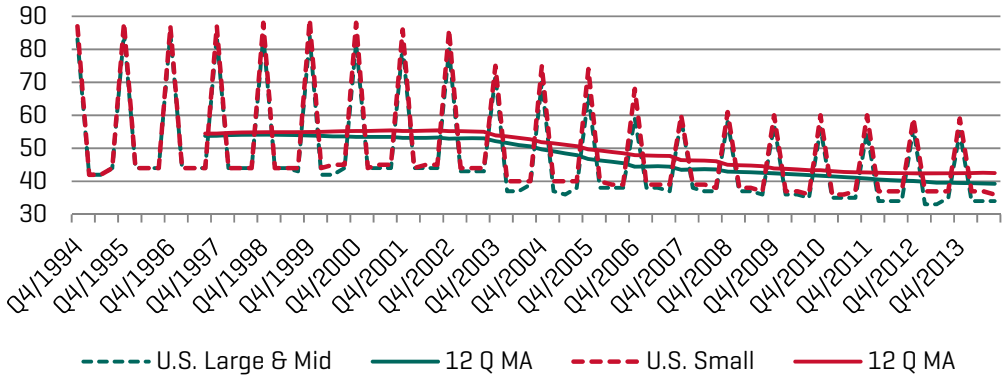
7 "Developed" and "Emerging" market region definitions are following the country allocation defined by S&P Global BMI.

Additionally the Box and Whisker chart (see Appendix C) reveals that Q4 reporting does not only take longer, but that the variability, defined by the difference between the 2nd and 9th decile, is larger.

The regulatory framework naturally limits the time companies have at their disposal to disclose their financials. However, audit delays can lead to breaches of these mandatory thresholds, which explain the regular upward spikes within the dispersion charts in Appendix C.

Chart 2 incorporates a 12 Quarter – Moving Average (12 Q MA) for U.S. companies to not only reveal the historical trend but to also differentiate results by firm size.
In accordance with academic research smaller companies have longer reporting delays.[8] That effect seems to be more pronounced nowadays.
In 1997, U.S. companies utilized approximately 54 calendar days (12Q MA) to report financial results. In 2014, it took an average 15 and 12 days less for Large & Mid as well as Small cap companies respectively. It's interesting to note that the days to publication time frame for Small cap firms has stabilized around 42,5 days since 2011. However, the trend for Large & Mid-sized firms is still showing a downward trend reaching an all-time low of 39,3 days in Q3 2014.

Chart 2: Days to Final Publication (Median) – U.S. Large & Mid, U.S. Small



Source: S&P Capital IQ, Data as of March 27, 2015

Unaudited Preliminary Filings

"Non-PIT" databases are unable to differentiate between preliminary and final results due to the concept of overwriting prior data releases. For backtesting purposes, however, it is an important source of information as preliminary data releases have shown to contain material information capturing alpha.[9]

Therefore the following analysis is focusing on the historical evolution of preliminary, unaudited financial information across the five analyzed universes.

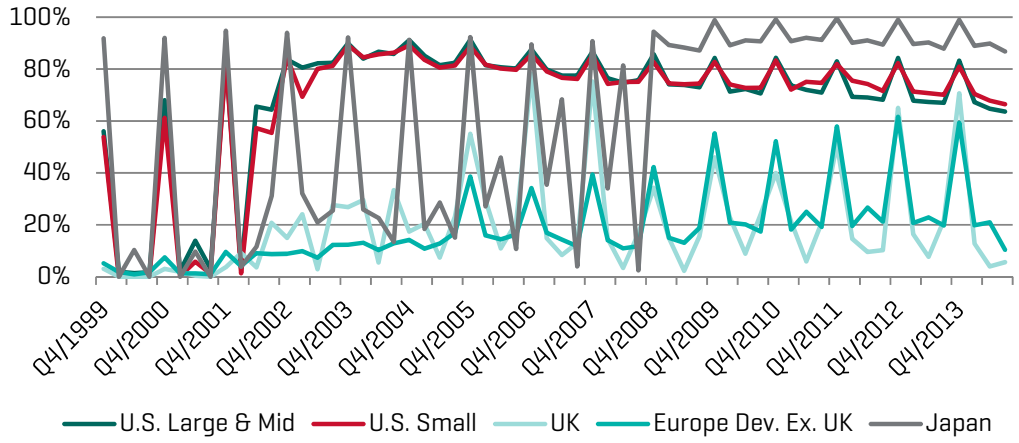
Despite varying reporting requirements across developed Europe, more companies than ever (approx. 60%) are publishing preliminary annual results as of fiscal year 2013. UK listed companies are showing a very similar pattern with approximately 70% of them releasing data via a preliminary publication.

[8] For example: ATIASE, BAMBER, TSE (1989), Timeliness of financial reporting, the firm size effect, and stock price reactions to annual earnings announcements. Contemporary Accounting Research, 5: 526–552
[9] HE, OSIOL, POPE (2011), How much Alpha is in Preliminary data?. Capital IQ Quantitative Research

Since 2008 Japanese companies are required to disclose their financial statements before the completion of an external audit under the "Timely Disclosure" regulations of the securities exchanges. This explains the large upward spike during that time as seen in Chart 3. Japanese firms have to disclose the audited financial statements after the completion of an external audit under the "Financial Instruments and Exchange Act" again.

Interestingly the pattern for U.S. companies, no matter which market capitalization segment they belong to, is different. The declining number of U.S. companies reporting preliminary results should be analyzed in accordance with the "days to file" enhancements made over the last decade. Given technological improvements and reporting requirement changes (see section "Disclosure Requirements") companies are much faster to file their final statements now than at the "peak" of preliminary filings in 2004 (see Chart 3). As a consequence the pressure from capital markets to gain access to parts of the final publication via preliminary filings might have been somewhat relieved.

Chart 3: Percentage of companies with Preliminary Filings by major regions



Source: S&P Capital IQ, Data as of March 27, 2015

Restatements

Restatements of financial results occur for various reasons[10], for example merger & acquisition activities, reclassifications, accounting changes or misstatements.[11] The implications of these restatements have been analyzed by a growing number of research papers which have to rely on "PIT" data.[12]

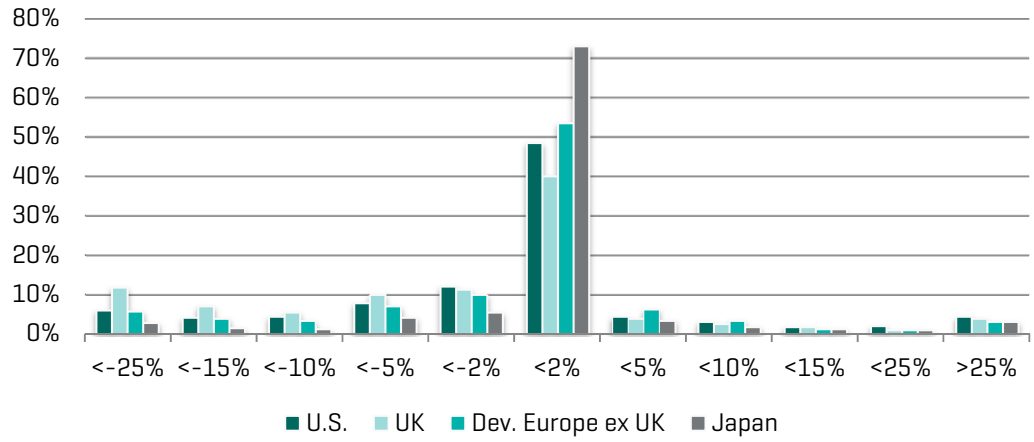
The following analysis reveals the prevalence and magnitude of restatements on an aggregated level.

Within the developed markets observation universe, containing more than 5.500 companies, 78% have restated their audited, annual total revenues at least once within the following 400 days.[13]

[10] See Appendix A for "S&P Capital IQ – Filings & Restatement Types"
[11] Notable recent examples of accounting irregularities published in 2014 are Tesco PLC & Hertz Global Holdings, Inc.
[12] For example: EFENDI, SRIVASTAVA, SWANSON (2007), Why Do Corporate Managers Misstate Financial Statements? The Role of Option Compensation and Other Factors. Journal of Financial Economics, 85(3): 667 – 708; CAO, MYERS, OMER, (2012), Does Company Reputation Matter for Financial Reporting Quality? Evidence from Restatements. Contemporary Accounting Research, 29: 956–990
[13] A 400 day observation window was chosen to address restatements within the following annual statement.

As can be seen in Chart 4 the magnitude of restatements is negatively skewed across all regions, i.e. negative adjustments occur more frequently than positive ones.

Chart 4: Magnitude of restatement of FY Total Revenues within 400 days (in %) - 1994-2014



Source: S&P Capital IQ, Data as of March 27th, 2015

Japan stands out with the highest percentage of minor restatements between -2% and 2%.

Point-In-Time vs. Lagged Fundamentals – Do Errors Cancel Out?

Setup

Considering the differences in filing patterns related to the regulatory environment, the company size, the type of the fiscal period as well as time-related filing pattern variations even within regions and the high frequency of restatements, it is important to understand the analytical implications of quantitative analysis based on Non-PIT fundamental data sets.

The next section will therefore focus on the question: Do data errors incorporated by applying a lagging mechanism to Non-PIT fundamentals – leading to look-ahead and look-behind biases without the ability to consider restatements – cancel out and thereby provide a "close-to-reality" replication of a PIT – based analysis?

In order to answer this question, quantitative backtesting results based on "S&P Capital IQ – Point-In-Time" fundamentals were compared to research results based on Non-PIT fundamentals (see Footnote 2), lagged by the standard quant - industry practice of either two or three months.

The data was analyzed using the quantitative data analysis software S&P Capital IQ - ClariFI. The analysis was started on December 31, 1999 and run until September 30, 2014, capturing approximately 15 years of data. To account for different analytical scenarios two quantitative factors with a different number of fundamental input parameters (Earnings Yield [E/P], Cash Flow Return on Invested Capital [CFROIC]), as well as a combination of both, were analyzed within eight universes and with differing portfolio divisions (quantile settings).[14]

[14] E/P was based on Net Income (S&P Capital IQ item number 15) & Weighted Avg. Diluted Shares Outstanding (342). CFROIC was based on Cash From Operations (2006), Long Term Debt (1049), Minority Interest (1052) & Total Equity (1275). The detailed formulation as well as the composite settings can be found in Appendix B.

The U.S., European, Japanese & Emerging market universes were divided into two segments, the top 1000 as well as the following 2000 stocks, based on market capitalization rankings on a yearly basis.

The results are presented as monthly spread averages defined as Top minus Bottom quantile return differences. In addition cumulative return spread differences as well as Quantile 1 (Q1) monthly return averages and Q1 cumulative returns are shown.

The purpose of these 48 backtest samples is to better compare differences in results between quantitative research based on lagged data and research based on PIT fundamentals, to allow for a more concrete discussion.

Observations

Within the U.S. Top 1000, only four out of 24 backtests exhibit a deviation of at least 5 basis points compared to PIT-based backtest results (see Table 6) comparing monthly Top minus Bottom spread averages. These small differences are unsurprising given the tight reporting guidelines the largest U.S. companies are subject to. All else being equal the smaller the overall reporting window allowance the smaller will be the deviation around the median days to report. Especially since the introduction of the "Large Accelerated Filer" guidelines in 2006 the dispersion has tightened further remarkably (see Appendix C). M&A activity is also less common within the large capitalization segment which lessens restatement needs. Additionally more financially visible and easily observable large cap companies tend to be less affected by fraudulent behavior, and therefore less prone to large restatements.

Analyzing the quantile spreads within the U.S. Next 2000 universe on the other hand reveals statistically significant deviations in comparison to monthly PIT-based spread averages. 2M lagged data always overstated PIT returns by up to 15 basis points (E/P - Decile). 3M lagged data was skewed in the opposite direction always understating paper returns by up to 14 basis points (CFROIC + E/P - Quintile). The same pattern is true with one exemption (E/P – Quintile) for Quantile 1 (Q1) monthly return averages.

A similar pattern cannot be observed for European data. In Europe, 40 out of 48 backtest results have overstated PIT-based research data. Although underpinning the common industry practice of applying 3M lags to backtests for European companies which are always returning more conservative paper returns than 2M lagged-based backtests, the absolute deviation measured in basis points is not naturally smaller.

A mixed picture is found within the Japanese research universe with 71% of all lagged research results showing smaller monthly average returns than PIT based data. Even though more results with higher absolute deviations are observed within 2M lagged based data results, in 10 out of 24 instances 2M lagged data was a better replication of PIT based research results than data lagged by 3 months.

The Emerging market universes exhibit a pattern similar to the European research results. 37 out of 48 research results have overstated PIT-based monthly average spreads and Q1 returns. Just focusing on 3M lagged backtests the result differences oscillate between -20 & +16 basis points around the PIT-based research data. Therefore the cumulative return differences reach up to 39% (3.808% vs. 4.717% - Emerging Markets Next 2000 – CROIC + E/P – Decile).

Table 6: Monthly Top/Bottom-Quantile Return Spread Averages [Spread] & Monthly Absolute Quantile 1 Return Averages [Q1] / [Equally Weighted - 12/1999 - 09/2014]

Quantile + Factor	U.S. Top 1000		U.S. Next 2000		Europe Top 1000		Europe Next 2000		Japan Top 1000		Japan Next 2000		EM Markets Top 1000		EM Markets Next 2000	
	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1
(5)																
CFROIC + E/P (PIT)	**0.99%**	***1.38%***	**1.60%**	***1.51%***	**0.95%**	***1.09%***	**1.92%**	***1.46%***	**0.59%**	***0.75%***	**0.85%**	***1.20%***	**0.99%**	***1.60%***	**1.63%**	***2.05%***
CFROIC + E/P (Lag2M)	0.99%	*1.38%*	1.66%	*1.54%*	1.11%**	*1.19%***	2.28%***	*1.68%****	0.58%	*0.67%*	0.96%	*1.27%*	1.17%**	*1.74%***	1.82%**	*2.29%****
CFROIC + E/P (Lag3M)	0.95%	*1.37%*	1.46%***	*1.40%****	0.97%	*1.11%*	2.04%*	*1.52%*	0.51%	*0.63%*	0.83%	*1.19%*	1.07%	*1.66%*	1.59%	*2.08%*
(10)																
CFROIC + E/P (PIT)	**1.15%**	***1.47%***	**1.75%**	***1.62%***	**1.05%**	***1.21%***	**2.39%**	***1.65%***	**0.70%**	***0.88%***	**1.06%**	***1.42%***	**0.94%**	***1.73%***	**1.96%**	***2.26%***
CFROIC + E/P (Lag2M)	1.20%	*1.44%*	1.84%*	*1.65%*	1.29%*	*1.36%***	2.72%***	*1.96%****	0.66%	*0.78%*	1.26%	*1.47%*	1.17%*	*1.93%***	2.25%**	*2.59%****
CFROIC + E/P (Lag3M)	1.15%	*1.44%*	1.64%*	*1.47%****	1.13%	*1.27%*	2.48%	*1.77%**	0.62%	*0.81%*	1.01%	*1.36%*	0.95%	*1.76%*	2.12%	*2.37%*
(5)																
CFROIC TTM (PIT)	**0.74%**	***1.10%***	**1.49%**	***1.33%***	**0.39%**	***0.83%***	**1.56%**	***1.21%***	**0.33%**	***0.52%***	**0.78%**	***1.09%***	**0.31%**	***1.43%***	**1.14%**	***1.89%***
CFROIC TTM (Lag2M)	0.73%	*1.09%*	1.56%*	*1.36%*	0.53%***	*0.92%****	1.65%	*1.34%***	0.26%	*0.47%*	0.76%	*1.09%*	0.43%	*1.46%*	1.22%	*1.97%*
CFROIC TTM (Lag3M)	0.69%	*1.06%***	1.41%**	*1.27%***	0.43%	*0.86%*	1.55%	*1.26%*	0.21%*	*0.48%*	0.73%	*1.07%*	0.40%	*1.42%*	1.12%	*1.89%*
(10)																
CFROIC TTM (PIT)	**0.91%**	***1.07%***	**1.58%**	***1.36%***	**0.46%**	***0.84%***	**1.61%**	***1.17%***	**0.45%**	***0.45%***	**1.03%**	***1.14%***	**-0.05%**	***1.46%***	**1.21%**	***1.82%***
CFROIC TTM (Lag2M)	0.89%	*1.02%*	1.64%	*1.34%*	0.64%**	*0.96%***	1.68%	*1.23%*	0.24%*	*0.30%***	1.02%	*1.14%*	-0.11%	*1.43%*	1.31%	*2.05%****
CFROIC TTM (Lag3M)	0.90%	*1.04%*	1.50%	*1.26%****	0.55%	*0.93%**	1.53%	*1.11%*	0.27%	*0.35%*	0.94%	*1.11%*	-0.17%	*1.36%*	1.14%	*1.91%*
(5)																
E/P TTM (PIT)	**0.81%**	***1.39%***	**1.10%**	***1.46%***	**0.89%**	***1.05%***	**1.51%**	***1.33%***	**0.38%**	***0.80%***	**0.68%**	***1.23%***	**0.98%**	***1.72%***	**1.27%**	***2.02%***
E/P TTM - (Lag2M)	0.78%	*1.36%*	1.18%*	*1.52%***	0.99%	*1.05%*	1.72%*	*1.51%****	0.44%	*0.87%*	0.84%**	*1.27%*	1.21%**	*1.87%****	1.47%*	*2.27%****
E/P TTM - (Lag3M)	0.74%	*1.35%*	0.95%***	*1.38%****	0.92%	*1.05%*	1.55%	*1.39%*	0.32%	*0.76%*	0.73%	*1.23%*	1.09%	*1.76%*	1.33%	*2.10%*
(10)																
E/P TTM (PIT)	**0.89%**	***1.49%***	**1.32%**	***1.53%***	**0.93%**	***1.05%***	**1.48%**	***1.30%***	**0.37%**	***0.91%***	**0.55%**	***1.31%***	**1.50%**	***2.03%***	**1.37%**	***2.14%***
E/P TTM - (Lag2M)	0.83%	*1.46%*	1.47%*	*1.64%***	1.11%	*1.04%*	1.80%**	*1.64%****	0.47%	*0.96%*	0.99%***	*1.50%***	1.56%	*1.92%*	1.57%	*2.39%***
E/P TTM - (Lag3M)	0.87%	*1.46%*	1.18%*	*1.42%***	0.88%	*0.95%*	1.58%	*1.45%****	0.37%	*0.89%*	0.64%	*1.28%*	1.42%	*1.83%*	1.47%	*2.24%*

*** two-tail t-test - alpha = 0.01
** two-tail t-test - alpha = 0.05
* two-tail t-test - alpha = 0.10

PIT vs. LagXM Spread > 5 BP
PIT vs. LagXM Spread > 10 BP

Source: S&P Capital IQ - ClariFI, Own calculations

Source: S&P Capital IQ Quantamental Research as-of March 31, 2015. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent.
For acronyms please refer to Appendix D

Table 7: Cumulative Top/Bottom-Quantile Returns (Spread) & Cumulative Absolute Quantile 1 Returns (Q1) / [Equally Weighted - 12/1999 - 09/2014]

Quantile + Factor	U.S. Top 1000		U.S. Next 2000		Europe Top 1000		Europe Next 2000		Japan Top 1000		Japan Next 2000		EM Markets Top 1000		EM Markets Next 2000	
	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1	Spread	Q1
(5)																
CFROIC + E/P (PIT)	**342%**	**791%**	**741%**	**968%**	**338%**	**451%**	**2261%**	**967%**	**162.16%**	**193.69%**	**304.53%**	**501.05%**	**375%**	**1253%**	**1295%**	**2756%**
CFROIC + E/P (Lag2M)	341%	793%	820%	1024%	477%	562%	4396%	1478%	154.62%	154.58%	385.08%	582.32%	553%	1613%	1862%	4258%
CFROIC + E/P (Lag3M)	317%	764%	558%	780%	365%	475%	2914%	1098%	122.39%	136.55%	292.10%	494.97%	451%	1403%	1215%	2931%
(10)																
CFROIC + E/P (PIT)	**350%**	**905%**	**651%**	**1138%**	**199%**	**553%**	**3706%**	**1334%**	**197.24%**	**260.22%**	**446.23%**	**725.80%**	**114%**	**1505%**	**2289%**	**3808%**
CFROIC + E/P (Lag2M)	396%	851%	736%	1195%	189%	768%	6548%	2426%	167.90%	199.29%	659.28%	809.03%	184%	2166%	3995%	6856%
CFROIC + E/P (Lag3M)	366%	828%	499%	849%	205%	638%	4531%	1690%	148.31%	214.68%	397.33%	649.31%	118%	1573%	3177%	4717%
(5)																
CFROIC TTM (PIT)	**217%**	**456%**	**804%**	**673%**	**60%**	**251%**	**1298%**	**593%**	**71.16%**	**97.02%**	**270.21%**	**381.63%**	**35%**	**928%**	**606%**	**2007%**
CFROIC TTM (Lag2M)	214%	443%	887%	709%	104%	315%	1577%	768%	50.44%	82.10%	260.31%	385.07%	89%	972%	719%	2398%
CFROIC TTM (Lag3M)	192%	417%	672%	596%	70%	272%	1314%	653%	38.94%	84.33%	242.25%	367.07%	80%	903%	580%	2068%
(10)																
CFROIC TTM (PIT)	**300%**	**424%**	**808%**	**688%**	**32%**	**252%**	**1212%**	**538%**	**98.52%**	**73.56%**	**450.53%**	**404.11%**	**-53%**	**979%**	**671%**	**1758%**
CFROIC TTM (Lag2M)	287%	383%	908%	654%	73%	342%	1493%	600%	41.49%	30.73%	441.38%	395.57%	-55%	916%	819%	2757%
CFROIC TTM (Lag3M)	296%	393%	695%	561%	47%	315%	1122%	471%	46.85%	44.09%	370.44%	375.56%	-61%	807%	586%	2139%
(5)																
E/P TTM (PIT)	**219%**	**752%**	**288%**	**836%**	**317%**	**371%**	**1080%**	**724%**	**80.97%**	**206.22%**	**209.31%**	**559.53%**	**406%**	**1411%**	**649%**	**2392%**
E/P TTM - (Lag2M)	198%	709%	349%	938%	403%	381%	1626%	1043%	102.36%	244.71%	310.83%	612.54%	638%	1875%	949%	3810%
E/P TTM - (Lag3M)	180%	678%	200%	707%	339%	376%	1182%	817%	61.16%	189.00%	238.97%	566.86%	501%	1543%	720%	2826%
(10)																
E/P TTM (PIT)	**233%**	**809%**	**285%**	**881%**	**325%**	**335%**	**824%**	**652%**	**69.13%**	**251.06%**	**134.60%**	**602.88%**	**1057%**	**2291%**	**762%**	**2658%**
E/P TTM - (Lag2M)	196%	761%	398%	1081%	497%	346%	1396%	1283%	101.75%	280.69%	409.47%	900.66%	1234%	1961%	1172%	4349%
E/P TTM - (Lag3M)	226%	747%	211%	691%	296%	275%	932%	874%	69.35%	238.61%	174.70%	578.10%	955%	1654%	980%	3341%

PIT vs. LagXM Spread > 5 BP
PIT vs. LagXM Spread > 10 BP

Source: S&P Capital IQ - ClariFI, Own calculations

Source: S&P Capital IQ Quantamental Research as-of March 31, 2015. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent.
For acronyms please refer to Appendix D

Overall the small sample of research does not seem to confirm that nested factors (such as CFROIC), incorporating more financial data items and therefore more potential for data deviations, are more prone to differences between PIT and lagged-based data than factors built on one financial data item only (like E/P).

Generally the analysis indicates that the smaller the size of the underlying quantile (quintile vs. decile analysis) the higher the return deviation will be. This is especially critical as small sample sizes are rather prone to Type II errors than large data samples.

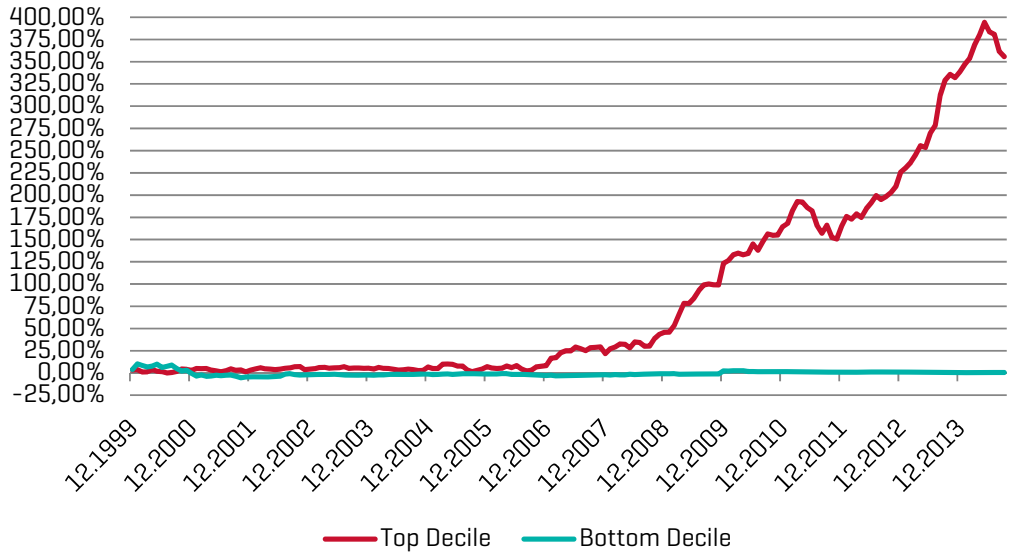
With respect to turnover statistics it can be said that no outliers or anomalies appear within the analyzed research universes.

Long-only investors using quantitative analysis are primarily interested in the quantile dispersion, e.g. searching for monotonically decreasing patterns, and a resulting favorable risk-adjusted outperformance of the top quantile. It is therefore very important to analyze by how much single quantile segments are deviating from the true information set derived from PIT data.

As an example, we focus on a standard quant research setup by analyzing two blended factors (CFROIC + E/P) within the Europe Next 2000 universe with decile settings by lagging Non-PIT fundamental data by three months. A deviation of 9 basis points (2.39% vs. 2.48%), measured in terms of average monthly spread, results in a +3.8% deviation from reality. The cumulative spread differential is already pointing to a much larger paper return deviation (+22.3%) than might have been assumed by only considering the average monthly spread deviation.

Looking at the cumulative return differential of the top and bottom decile reveals the cause of the return deviation. The bottom lagged decile replicates the PIT decile data quite well. Therefore the overall return difference considering the Top/Bottom spread analysis (see Table 6) is almost exclusively driven from the deviation of the top decile, biasing the decile return results by a large amount.

Chart 5: Europe Next 2000 – E/P+CFROIC – Cumulative Deviation - PIT vs. Lag3M (Equally Weighted - Deciles)



Source: S&P Capital IQ, Data as of March 27, 2015

Additionally the spread deviations are not stable over time. Until 2006 the deviations seem to be minimal for that specific example. Afterwards the results are very different (see Chart 5).

The initial factor selection might also be affected. For instance comparing CFROIC TTM with E/P TTM for the Europe Top 1000 decile research universe returns a very different factor sorting based on cumulative results. The clear outperformance of 21 basis points (0.84% vs. 1.05%) of the E/P TTM factor is reduced to 2 bps by comparing 3M lagged results. The cumulative returns then clearly favor CFROIC TTM over E/P TTM (315% vs. 275%) even though PIT based research would sort these factors the other way round (252% vs. 335%).

Conclusion

This research paper has analyzed various regulatory environments as well as historical filing patterns within developed regions. Additionally, 48 sample research setups were created to compare different analytical issues, e.g. single factor vs. multi-factor analysis and quintiles versus deciles.

In general, the size of the disclosure window of financial results is dependent on the country, the period under consideration (e.g. mid 90's vs. 2014), the reporting period type (e.g. requesting financial statement items from Quarter 1, Semi-Annual or Annual statements), the company size (see table 4) and the market segment the company is listed in (see table 5).

Also, disclosure windows have shortened over time. This is not just driven by regulatory changes[15], but also due to technological advances over the course of the last 15 years. Preliminary filings have become much more important, even though slightly fewer U.S. companies (in comparison to the peak in 2004) are revealing their filings earlier.

Filings restatements are another important aspect with approximately 80% of all companies restating their filings (measured by total revenues) within 400 days after the original audited result publication. This means that lagged financial results may be significantly different than the original PIT results.

Given these observations it is not surprising that quantitative analysis confirmed that static lagging mechanisms, as applied by market practitioners, are not capable replicating the analytical results derived from Point In Time models. Due to the noise incorporated within lagging algorithms the analytical conclusions are naturally prone to Type I and Type II errors. Quantitative fundamentals-based research analyzing higher frequencies (e.g. weekly) and smaller sample sizes should be even more prone to such errors. Additionally portfolio simulation and optimization strategies will lead to different portfolio compositions and factor weightings.

Furthermore a replication of former research runs is not possible due to "Standard-Non-PIT" databases overwriting data items with newly arrived data (please refer to Table 1 and Table 2). Efficiency is negatively affected because of the need to readjust restated data, for instance due to M&A activity. The characteristic of overwriting also constrains the analysis of potential anomalies, e.g. by excluding research related tasks based on restatements or market reactions due to the release of preliminary earnings.

In conclusion, an accurate replication of historical as-of-date information available in the market, even by applying non-static and "company-specific" (e.g. size, region) lagging algorithms, is

[15] New guidelines might similarly skew that pattern in the opposite direction (see section "Disclosure Requirements" – *Continental Europe*).

impossible within Standard Non-PIT databases. Such attempts may lead to misleading "paper" returns, and therefore, impacting real returns.[16]

[16] I would like to thank the S&P Capital IQ Content Team, especially Maria Shevchenko, CAIA, Jai Gogna & Ratul Sood as well as Ruben Falk, Claudia Holm, Temilade Oyeniyi, Dave Pope, CFA, Richard Tortoriello, Cristiano Zazzara, PhD & Frank Zhao for their contribution.

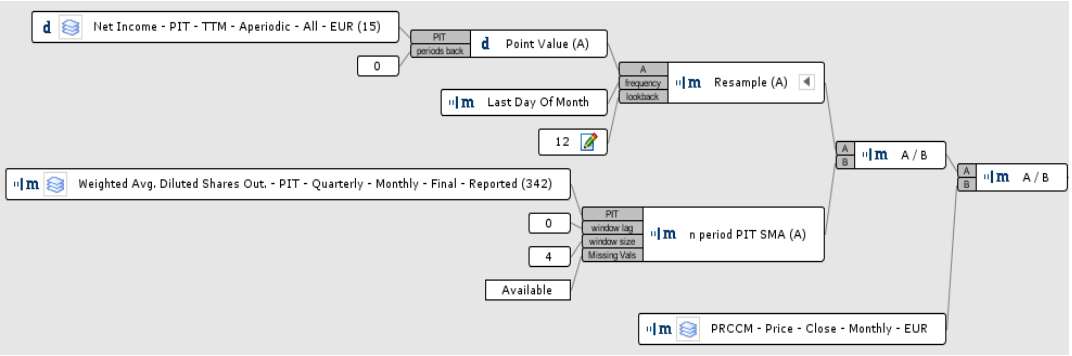
Appendix A

Table 6: S&P Capital IQ - Filings & Restatement Types

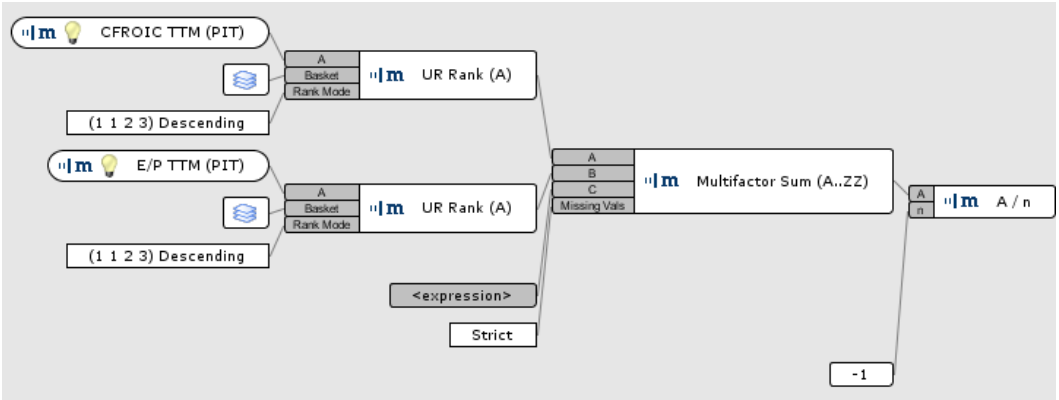
Restatement Type	Description
Preliminary	Preliminary earnings release
Original	Original company filing for period
Reclassified for Disposal	Reclassified for disposal of business or assets
Restated	Results fundamentally different from original, i.e. Net Income, Retained Earnings, or Cash from Operations is different
Reclassified	Results somewhat different from original, but bottom line results are the same
Discontinued Operations	Statement not calculated due to the Discontinued Operations in the period

Appendix B

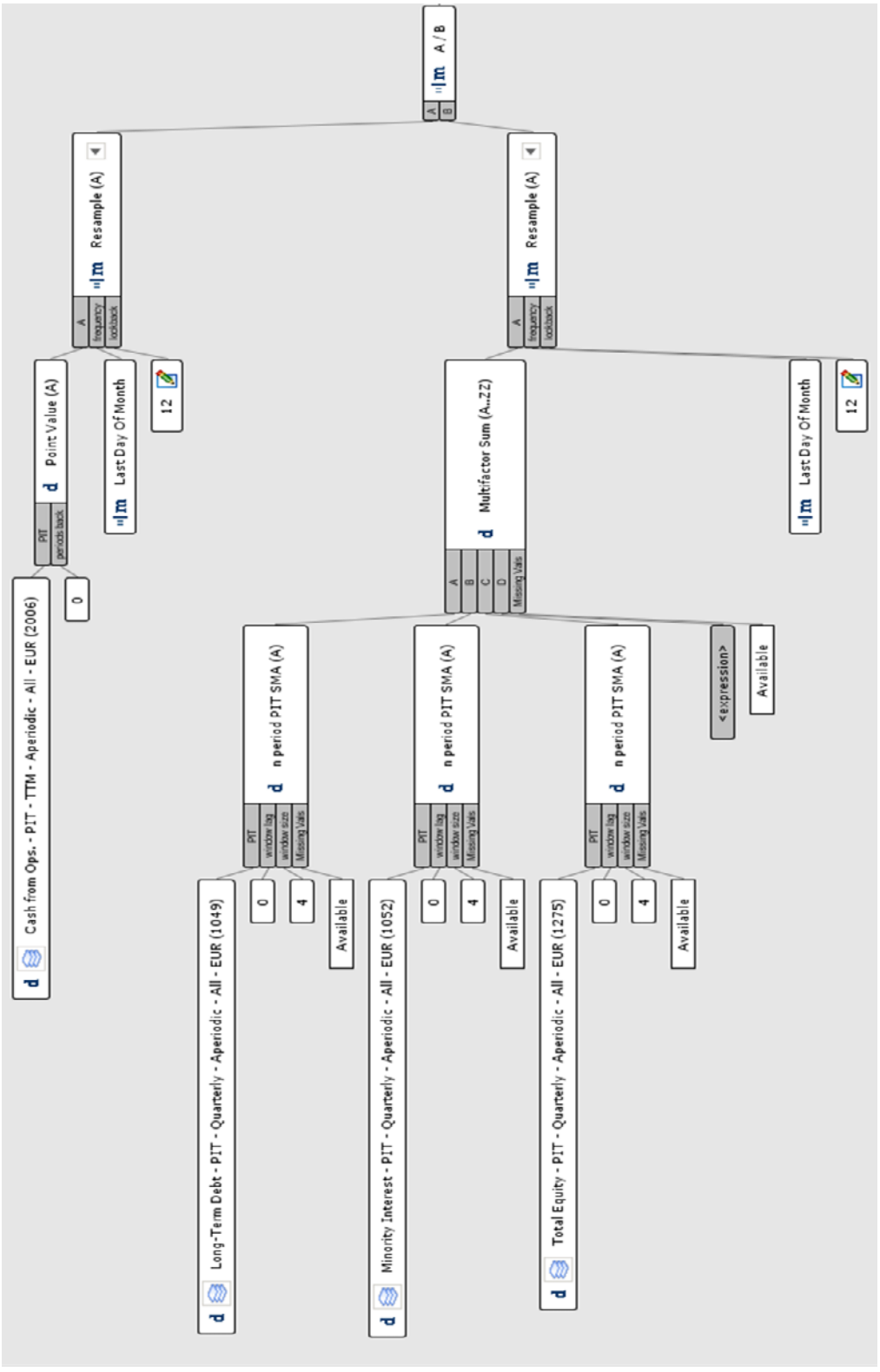
Graph 2: E/P (Point-In-Time)



Graph 3: CFROIC + E/P (Point-In-Time)



Graph 4: CFROIC (Point-In-Time)



Appendix C

Actual Reporting Dispersion – First Publication

Chart 6: U.S. Top 1000

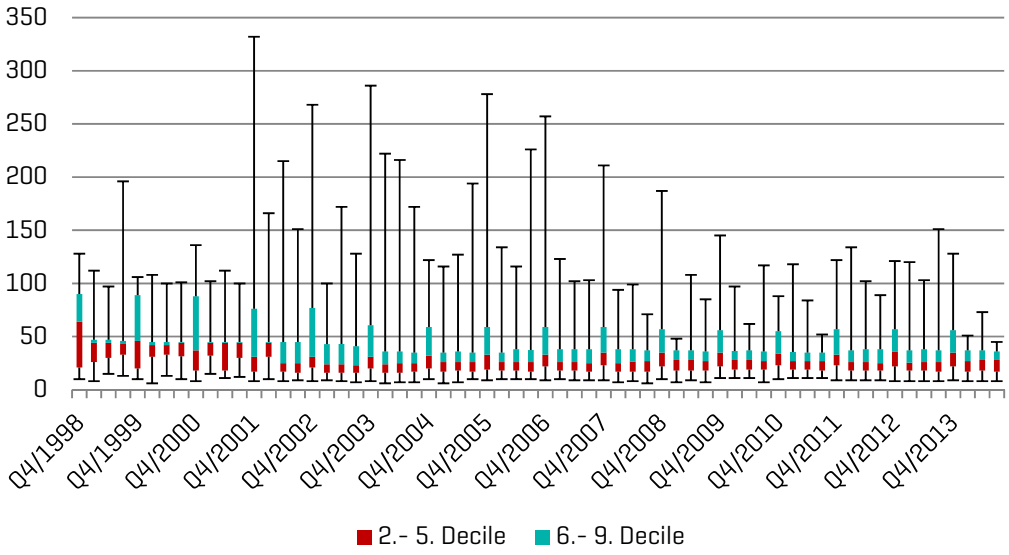


Chart 7: U.S. Next 2000

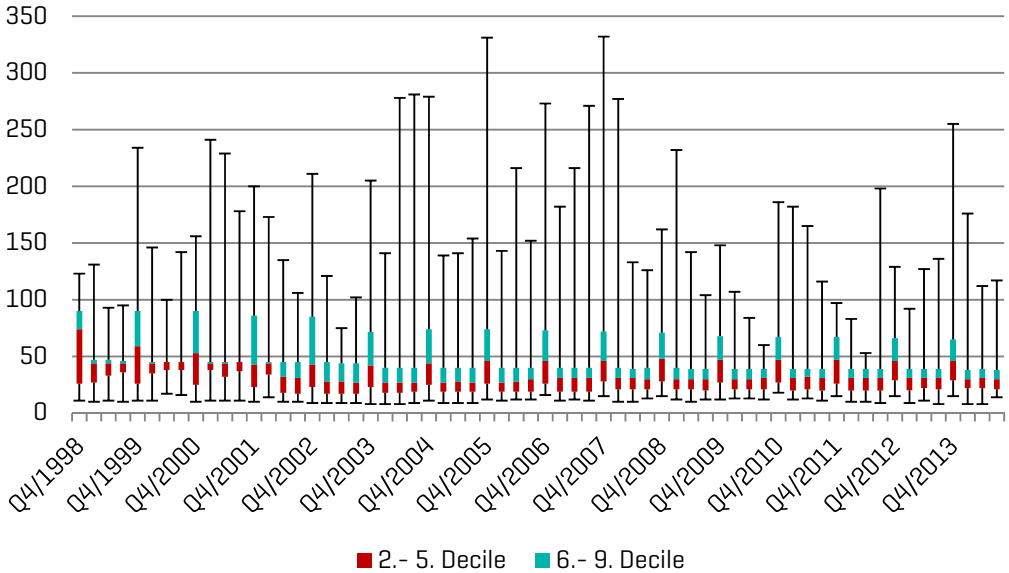


Chart 8: Developed Europe ex UK

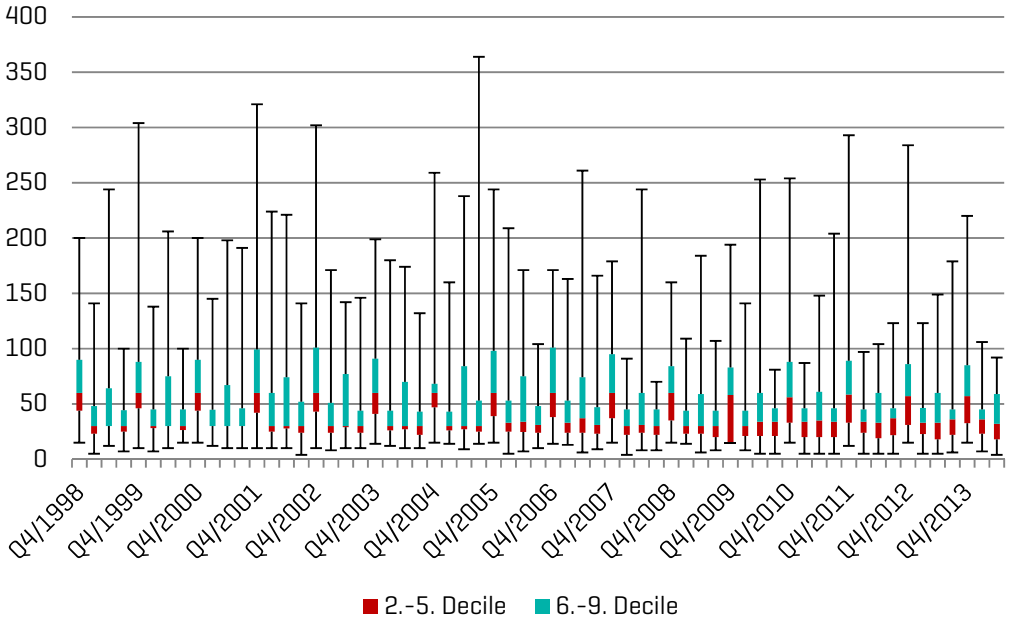


Chart 9: UK

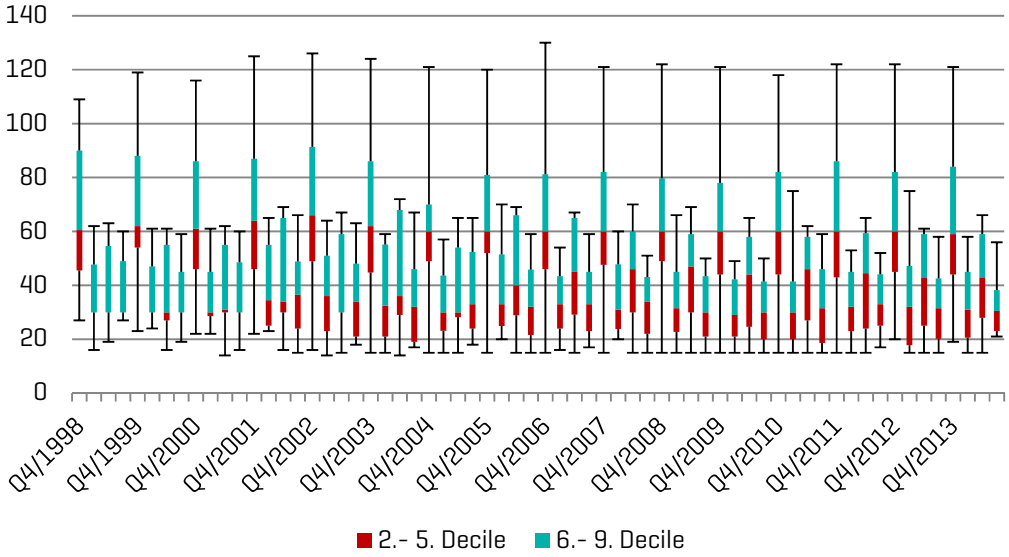
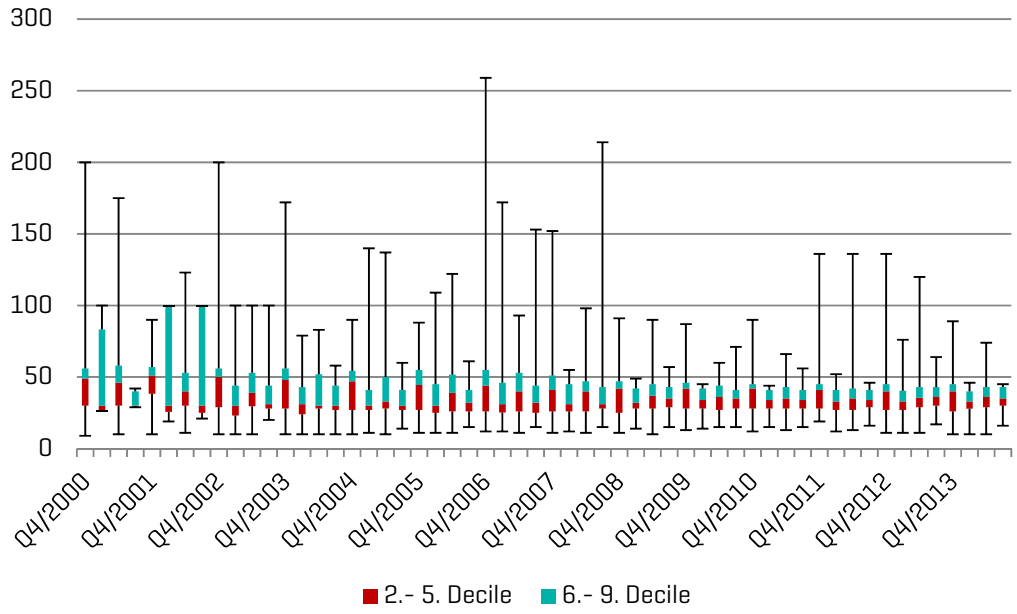


Chart 10: Japan



Appendix D

Acronyms

PIT	Point-In-Time
FY	Fiscal Year
2M	2 Months
3M	3 Months
Q1	Quantile 1
E/P	Earnings Yield
CFROIC	Cash Flow Return on Invested Capital
Cum	Cumulative
LTM	Last Twelve Months
TTM	Trailing Twelve Months

Our Recent Research

August 2015: S&P Capital IQ's Stock Selection Model for the Japanese Market
Since the launch S&P Capital IQ's four U.S. stock selection models ("US Stock Selection Models Introduction") in January 2011, we released a suite of global stock selection models targeting both developed ("Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets") and emerging markets ("Obtaining an Edge in Emerging Markets"). In this report, we introduce a stock selection model for the Japanese equity market that completes our global model offering.

July 2015: Research Brief – Liquidity Fragility
As liquidity in the bond market becomes increasingly constrained, there has been a growing chorus of concerns raised by Mohamed A. El-Erian, John Paulson, Jamie Dimon, Larry Summers and recently the Federal Reserve. As we learned in the Global Financial Crisis, when liquidity seizes in one market, margin calls are met by raising cash in one of the most liquid markets in the world: the US equity market. How should equity investors be thinking about liquidity in their market?

April 2015: Drilling for Alpha in the Oil and Gas Industry – Insights from Industry Specific Data & Company Financials
During the recent slide in oil prices, clients frequently asked us which strategies have historically been effective in selecting stocks in declining energy markets. This report answers this question, along with its corollary: which strategies work in rising energy markets? We also explore the value of oil & gas reserve data used by fundamental analysts/investors, but not used in a majority of systematic investment strategies. The analysis in this report should help both fundamental and quantitatively-oriented investors determine how to best use industry-specific and generic[1] investment metrics when selecting securities from a pool of global oil & gas companies.

March 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 3
Driven by proprietary data and analytics from S&P Capital IQ™, Equity Market Pulse provides professional investors with insights into global equity market fundamentals and performance at a glance. Spanning developed and emerging markets in the Americas, Europe, and Asia, it provides perspective on fundamentals, valuations and investment strategy effectiveness.

February 2015: U.S. Stock Selection Model Performance Review - The most effective investment strategies in 2014
Since the launch of the four S&P Capital IQ™ U.S. stock selection models in January 2011, the performance of all four models (Growth Benchmark Model, Value Benchmark Model, Quality Model, and Price Momentum Model) has been positive and 2014 was no exception. Our models' key differentiators - distinct formulation for large cap and small cap stocks, special treatment for the financial sector, sector neutrality to target stock specific alpha, and factor diversity - enabled the models to outperform across various market environments. In this report, we review the underlying drivers of each model's performance over the 12 months ended December 31, 2014, document performance from January 2011 when the models went live, and provide full model performance history from January 1987.

January 2015: Research Brief: Global Pension Plans - Are Fully Funded Plans a Relic of the Past?

With strong equity and bond market performances over the past few years, one might assume that pension shortfalls have declined sharply. Since our last research brief (September 2013), funding statuses have indeed improved in the U.S. and Asia, though not in Europe (Exhibit 1). However, while the S&P 500 Index has been making higher highs (Exhibit 2, red line), the number of S&P 500 plans with a funding status of 90% or higher has been in a sharp decline (blue bars).

January 2015: Profitability: Growth-Like Strategy, Value-Like Returns - Profiting from Companies with Large Economic Moats

Value-based strategies have been the favorite weapons in many investors' arsenals, historically yielding large returns and consistently outperforming. Most value investors focus on the price side of the equation – i.e., buying assets that are priced below their intrinsic values. Yet, there's another dimension to the value equation that has been complementary to value and just as critical in generating excess returns. Enter profitability. Profitability has historically worked as an investment strategy because instead of focusing on the cheapness of an asset it focuses on the productiveness of an asset - i.e., its ability to generate earnings for the investor. Our results from January 1996 to August 2014 show:The S&P 500® continues to be the preeminent regional performer in terms of both financial results and price appreciation Risk and Return: Tracks the dynamics of equity market returns and volatility.

- **Profitability-based strategies have historically produced excess returns on par with those generated by value-based strategies** and have historically produced higher excess returns than those generated by quality and price momentum strategies.
- Profitability-based strategies **have historically produced excess returns even after controlling for quality-, value- and price momentum-based strategies.**
- Profitability-based strategies **have historically consistently produced excess returns across different regions, time periods, and market capitalization categories.**
- **Highly profitable firms have historically consistently shown above average growth** with two-year top- and bottom-line growth rates that are 10% and 31% higher, respectively, than those for least profitable firms.
- **Profitability measures that are cleaner (i.e. higher up in the income statement such as gross profit) have historically shown higher excess returns and lower volatility** than measures that are lower in the income statement (e.g., net profit).
- **Gross profitability ratio has historically been 2.07x, 2.22x and 3.12x times more persistent than quality, value and momentum, respectively, after 5 years.**

November 2014: Equity Market Pulse – Quarterly Equity Market Insights Issue 2

Driven by S&P Capital IQ's™ proprietary data and analytics, **Equity Market Pulse** provides professional investors with insights into global equity market fundamentals and performance at a glance. Spanning developed and emerging markets in the Americas, Europe, and Asia, it provides perspective on valuations, operating efficiency, and investment strategy effectiveness.

- The **S&P 500® continues to be the preeminent regional performer** in terms of both financial results and price appreciation Risk and Return: Tracks the dynamics of equity market returns and volatility.

- **Investor preference for developed markets continues**, as developed markets show rising P/E multiples versus the emerging markets on much stronger financial performance.
- **Emerging markets appear cheap** on a valuation-to-projected-growth basis, with forward P/E to earnings growth (PEG) ratios of less than half those of the developed market average.

October 2014: Lenders Lead, Owners Follow – The Relationship between Credit Indicators and Equity Returns

This paper demonstrates a strong link exists between credit events and equity returns, suggesting a potential investment strategy. Whereas previous academic work focused on ratings changes within the U.S., this analysis takes a global perspective and includes the post-financial crisis period. Shareholders should note that even in a benign credit environment Standard & Poor's Ratings Services ("S&P Ratings Services") downgraded 68 U.S. speculative grade companies in the second quarter of 2014, and forecasts the rate of speculative grade defaults to increase next year to 2.2% from 1.6% in 2014. Year to date, there have been 303 instances where credit default swap spreads have widened by more than 50 basis points.

August 2014: Equity Market Pulse – Quarterly Equity Market Insights Issue 1

Equity Market Pulse provides professional investors with insights into global equity market fundamentals and performance at a glance. Spanning developed and emerging markets in the Americas, Europe, and Asia, it provides perspective on valuations, operating efficiency, and investment strategy effectiveness. The content of the Equity Market Pulse is driven by S&P Capital IQ's fundamental data and analytics including S&P Capital IQ Estimates, Global Point-in-Time Fundamentals, and the Alpha Factor Library. The analysis is broken into four themes:

- Valuation: Analysis of valuation multiples coupled with consensus outlook for earnings and revenue growth.
- Operating Performance: Trends in operating performance with return on equity deconstructed into: net profit margins, asset turnover, and leverage
- Risk and Return: Tracks the dynamics of equity market returns and volatility.

July 2014: Factor Insight: Reducing the Downside of a Trend Following Strategy

In this report, we review an approach that reduces the downside risk of a trend following strategy. This new signal first separates a stock's return into its systematic and stock-specific components, and then picks stocks solely on the latter. We compare the performance of this new signal (alpha momentum) to a typical trend following strategy (total momentum) and report the following:

- Globally, alpha momentum produces higher risk-adjusted returns in five developed market countries and a global universe. In the Russell 3000, alpha momentum's annualized long-short information ratio is twice that of total momentum (Jan 1988 – April 2014).

May 2014: Introducing S&P Capital IQ's Fundamental China A-Share Equity Risk Model

Factor risk models play an important role in equity portfolio management. Portfolio managers depend upon factor risk models to obtain portfolio risk prediction and risk attribution against a group of largely orthogonal factors each with meaningful econometric explanations. S&P Capital IQ is dedicated to providing a broad set of high-quality models and products to the global asset management community. Since 2010, we have released a series of single country risk models as well as global and regional equity risk models. We are now releasing single country risk model covering China A-Shares equities,

April 2014: Riding the Coattails of Activist Investors Yields Short and Long Term Outperformance

On August 13, 2013, Apple's stock price rose 4.75% on high volume after Carl Icahn, a renowned activist investor, tweeted that his firm had accumulated a large position in the company. In the ensuing 6 months, the stock rose an additional 9.33% as Icahn demanded that the company add another $50 billion to its existing stock buyback plan. Icahn backed off from this demand on February 10, 2014, but not before Apple's stock price had risen to $528.99 from $461.88 where it was before he embarked on the campaign. By then, the company had already aggressively repurchased its stock, including $14 billion in a two-week stretch. As high-profiled campaigns have occurred with greater frequency and resulted in more successes, the AUM for investor activist funds has tripled to $95 billion in 2013, 3 times the amount in 2008.

March 2014: Insights from Academic Literature: Corporate Character, Trading Insights, & New Data Sources

As part of our research process, we make a concerted effort to stay abreast of interesting white papers. Academic research papers are a rich source for new ideas and fine tuning of areas for future work. Often they provide a launch pad for debate and exploration for our team. Our readers agree, as we regularly receive positive feedback on our academic research highlights.

In this piece we have assembled a number of interesting articles that we believe will be of broad interest to our clients, and all investment professionals – Corporate Character, Trading Insights & New Data Sources. For each article we provide a link to the article, the abstract, and a brief discussion of the article highlights and how it will be useful to fellow practitioners. It is our hope that these papers help you generate differentiated thinking, and to better serve your clients.

February 2014: Obtaining an Edge in Emerging Markets

February 2014: U.S Stock Selection Model Performance Review

January 2014: Buying Outperformance: Do share repurchase announcements lead to higher returns?

October 2013: Informative Insider Trading - The Hidden Profits in Corporate Insider Filings

September 2013: Beggar Thy Neighbor – Research Brief: Exploring Pension Plans

August 2013: Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets: The Foundations of Outperformance

July 2013: Inspirational Papers on Innovative Topics: Asset Allocation, Insider Trading & Event Studies

June 2013: Supply Chain Interactions Part 2: Companies – Connected Company Returns Examined as Event Signals

June 2013: Behind the Asset Growth Anomaly – Over-promising but Under-delivering

April 2013: Complicated Firms Made Easy - Using Industry Pure-Plays to Forecast Conglomerate Returns.

March 2013: Risk Models That Work When You Need Them - Short Term Risk Model Enhancements

March 2013: Follow the Smart Money - Riding the Coattails of Activist Investors

February 2013: Stock Selection Model Performance Review: Assessing the Drivers of Performance in 2012

January 2013: Research Brief: Exploiting the January Effect Examining Variations in Trend Following Strategies

December 2012: Do CEO and CFO Departures Matter? - The Signal Content of CEO and CFO Turnover

November 2012: 11 Industries, 70 Alpha Signals -The Value of Industry-Specific Metrics

October 2012: Introducing S&P Capital IQ's Fundamental Canada Equity Risk Models

September 2012: Factor Insight: Earnings Announcement Return – Is A Return Based Surprise Superior to an Earnings Based Surprise?

August 2012: Supply Chain Interactions Part 1: Industries Profiting from Lead-Lag Industry Relationships

July 2012: Releasing S&P Capital IQ's Regional and Updated Global & US Equity Risk Models

June 2012: Riding Industry Momentum – Enhancing the Residual Reversal Factor

May 2012: The Oil & Gas Industry - Drilling for Alpha Using Global Point-in-Time Industry Data

May 2012: Case Study: S&P Capital IQ – The Platform for Investment Decisions

March 2012: Exploring Alpha from the Securities Lending Market – New Alpha Stemming from Improved Data

January 2012: S&P Capital IQ Stock Selection Model Review – Understanding the Drivers of Performance in 2011

January 2012: Intelligent Estimates – A Superior Model of Earnings Surprise

December 2011: Factor Insight – Residual Reversal

November 2011: Research Brief: Return Correlation and Dispersion – All or Nothing
October 2011: The Banking Industry

September 2011: Methods in Dynamic Weighting

September 2011: Research Brief: Return Correlation and Dispersion

July 2011: Research Brief - A Topical Digest of Investment Strategy Insights

June 2011: A Retail Industry Strategy: Does Industry Specific Data tell a different story?

May 2011: Introducing S&P Capital IQ's Global Fundamental Equity Risk Models

May 2011: Topical Papers That Caught Our Interest

April 2011: Can Dividend Policy Changes Yield Alpha?

April 2011: CQA Spring 2011 Conference Notes

March 2011: How Much Alpha is in Preliminary Data?

February 2011: Industry Insights – Biotechnology: FDA Approval Catalyst Strategy

January 2011: US Stock Selection Models Introduction

January 2011: Variations on Minimum Variance

January 2011: Interesting and Influential Papers We Read in 2010

November 2010: Is your Bank Under Stress? Introducing our Dynamic Bank Model

October 2010: Getting the Most from Point-in-Time Data

October 2010: Another Brick in the Wall: The Historic Failure of Price Momentum

July 2010: Introducing S&P Capital IQ's Fundamental US Equity Risk Model

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