

> ACCURATELY BACKTESTING FINANCIAL  
MODELS THROUGH POINT-IN-TIME  
CONSENSUS ESTIMATES

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## › OUR GOAL

Provide clients with a point-in-time snapshot of consensus data so that they can accurately backtest models without any look-ahead bias.

The Point-in-Time Database provides consensus data for each day at local midnight for each company. This is a consensus snapshot that ensures the data that has been used for the calculation was available at the date of this calculation. No data entered after the local midnight snapshot time can be included in that date's consensus calculation.

The Point-in-Time Database is not adjusted for dilutions, QA corrections, changes to the default currency, or broker estimates that were not available as of the consensus date.

### POINT-IN-TIME DATABASE AT A GLANCE

PERIODS AVAILABLE	ITEMS COVERED	CONSENSUS FLAVORS
History as of December 2009  <b>Rolling Fiscal Periods:</b> Annual FY0-FY2 Quarters FQ-3 to FQ8 Semiannual FH-1 to FH4  Annual Quarterly Semi Annual	Dividends Per Share EPS EPS Adjusted - Basic EBIT EBITDA Free Cash Flow Per Share Free Cash Flow Net Debt Net Income Sales Rating Target Price	100-Day Consensus Window 45-Day Post-Event Consensus Window Sharp Consensus  <b>Statistics:</b> Mean Median Number of Estimates Standard Deviation

## POINT-IN-TIME DATABASE VS. TRADITIONAL FE DATABASE

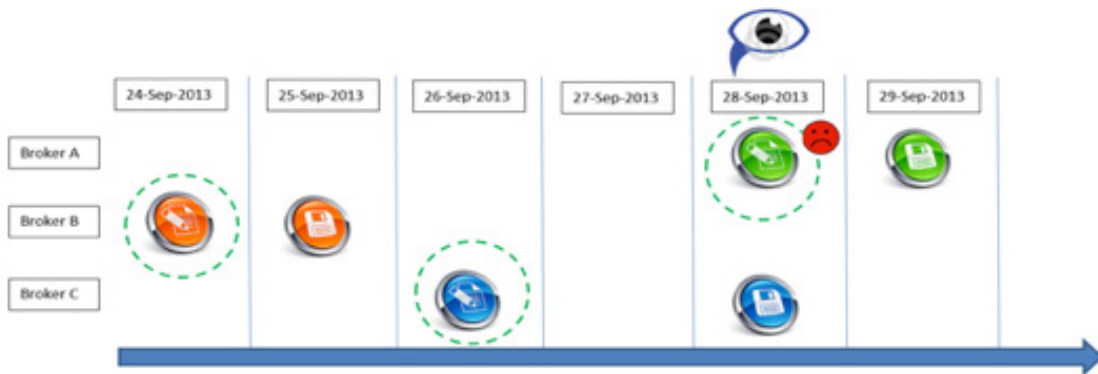
Access to estimates data with no look-ahead bias is essential to backtest quant models accurately. Today, the traditional FactSet Estimates Database has limitations in returning data that it had at a date's "point in time."

### FE DATABASE OFFERING

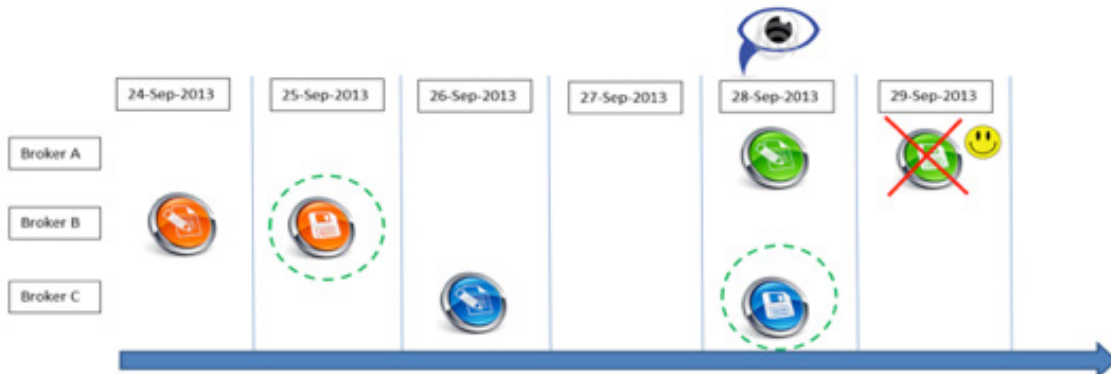
The traditional FactSet Estimates Database uses the "Research Date," or the market date of the broker contribution, to calculate the consensus. This exposes a look-ahead bias because most research dates are T-1 day of the broker contribution's "Input Date," or the date when the contribution was collected into the database. Clients have the option to use the "Input Date" to calculate their consensus to eliminate the look-ahead bias of including contributions in a consensus before the date they were collected.

### Research Date vs. Input Date

**Using Research Date:** As of September 28, Broker A's estimate is included in the consensus even though it was input to the database on the 29th.



**Using Input Date:** Broker A's estimate is excluded from consensus.



**FE PRODUCT LIMITATIONS**

QA Corrections: If a broker contribution is corrected or deleted after the initial collection, using the “Input Date” mode does not account for those changes.

**Input Date Time Methodology Limitations**

Broker C’s estimate is deleted or corrected after input: As of September 28, Broker C’s estimate is excluded from consensus, but it was visible at the time.



**Point-in-Time Database:** Using the exact picture of the database as of September 28, Broker A’s estimate doesn’t exist and Broker C’s estimate is available.



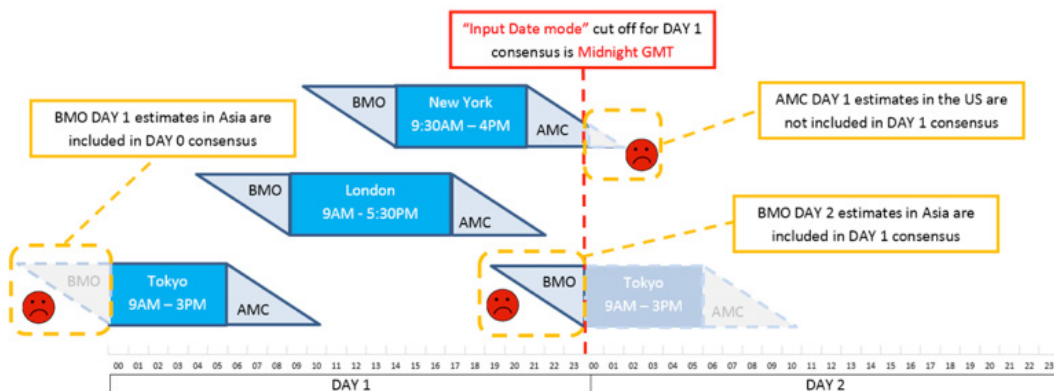
**Time Zone Updates**

Using "Input Date" mode in FE uses a 12:00 AM GMT cutoff time for each perspective date. This is not accurate for regions outside of the GMT time zone.

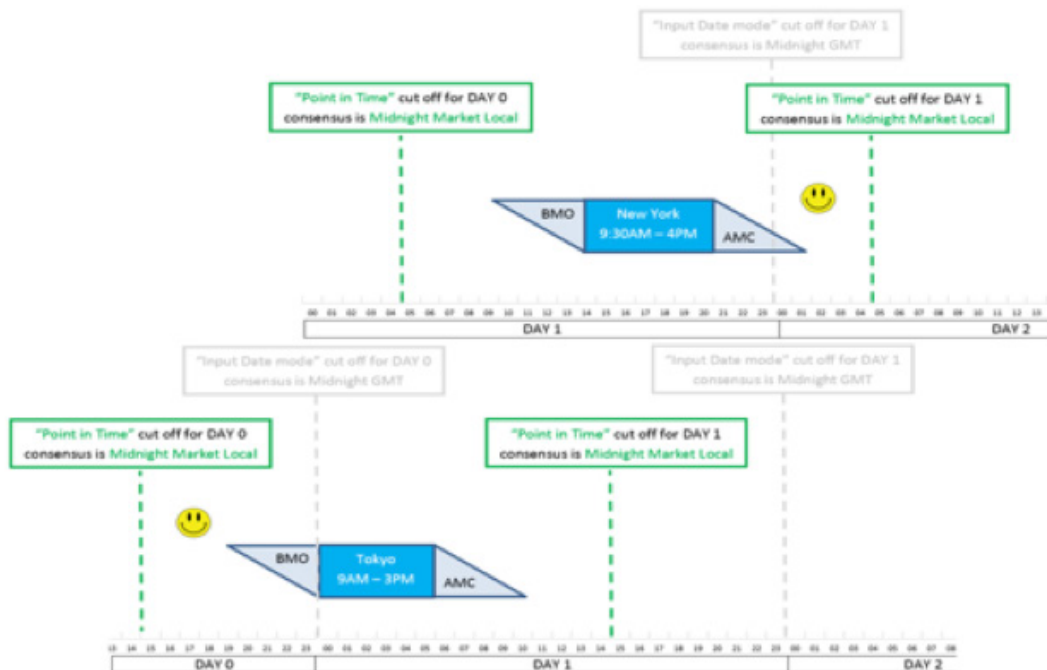
The Point-in-Time Database calculates the consensus based on each security's local 12:00 AM cutoff time for each date.

**Point-in-Time Enhanced Methodology**

"Input Date" mode uses Midnight GMT as a reference to calculate daily data points. **That's not accurate for U.S. and Asian markets.**



The Point-in-Time Database will be smarter and more accurate using **Midnight Market Local**.



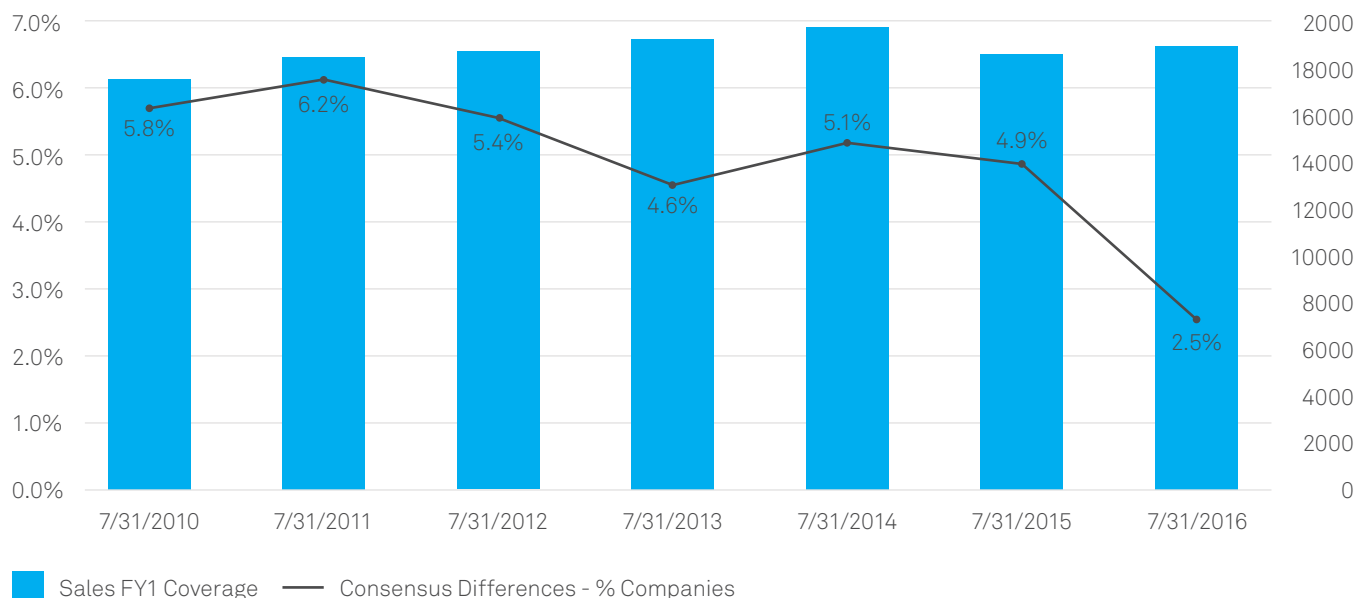
**Dilutions**

The FE database has no way to account for dilutions. Once a dilution is applied to a security, all of the history reflects this change and users cannot retrieve estimate data as it was pre-dilution. The Point-in-Time Database reflects the consensus we had as of the perspective date and dilutions are not applied historically.

**POINT-IN-TIME INDEX DIFFERENCES VS. FE BREAKDOWN**

The study below validates the accuracy of the Point-in-Time Database vs. the input date calculation available in standard FactSet Estimates. Here’s a seven year study of FY1 Sales, unadjusted for dilutions:

**Point-in-Time vs. Input Data - % Equities Impacted**



**The differences can be attributed to the categories below:**

- 1) About 50% of the differences are due to a change in the assigned estimates currency. The FE Database recalculates the consensus based on the current currency while the Point-in-Time Database returns the currency assigned as of the consensus date.
- 2) About 30% of the differences are due to quality assurance (QA) corrections applied after the consensus date. The FE Database will reflect any QA corrections, and the Point-in-Time Database will show what we had as of the end of the consensus date.
- 3) About 10% of the differences reflect a difference due to a QA datum deletion. The FE Database does not bring back data that has since been deleted, while the Point-in-Time Database will return any data we had as of the end of the day of the consensus date.
- 4) About 10% of the differences are due to QA actions to consensus classes. For example, if QA takes an action to remove a broker contribution from the consensus because it was determined that the estimate is made on a different methodology basis than the consensus, the standard FE Database returns the new consensus class separately for historic dates while the Point-in-Time Database will return what was available as of the end of that consensus date.

## POINT-IN-TIME DATABASE METHODOLOGY

### CONSENSUS

- Default – 100-day consensus window
- Sharp – Proprietary consensus calculated with a custom consensus window when revision trends are detected. Available for EPS, Sales, and FFO for FQ1 or FY1 period.
- 45-Day Post-Event – Includes only estimates that have been contributed after the latest event. Excludes estimates older than 45 days.

### CURRENCY

The consensus is provided in the estimates currency, which is defined as the majority currency brokers are contributing estimates in. An estimates currency change can occur for any given security. We therefore provide our point-in-time consensus feed with the currency displayed for each datum. If an estimates currency change occurs, the new consensus will be calculated with the new currency. Previous consensus values will not, however, be changed.

### DATABASE UPDATE PROCESS

The Point-in-Time Database provides a consensus snapshot as of each security's local market midnight time. The local market time is determined by the exchange of the security's primary instrument. The update process runs three times, for Asia, Europe, and the Americas, allowing the database to capture the latest data for each company.

### INTRADAY FX RATE METHODOLOGY

FactSet stores individual broker estimates in the estimates currency, and any broker contributions in a different currency are therefore converted with that date's exchange rate. As FX rate data does not have a market close time, the first two updates for Asia and Europe are converted using the most recent FX rate, and then updated with the FX rate as of midnight on the final update each day. As a result of this, consensus data in Asia and Europe can change between the update in their local time and the final update in the Americas.

### LIMITATIONS AND UNIVERSE

- The Point-in-Time will be available for the full FactSet Estimates universe.
- The Point-in-Time Database is not available before December 2009.
- The only window sizes available will be 100 days and the 45-day post-event window, as specified above.
- The database is consensus only.

### CONSENSUS METHODOLOGY

FactSet Estimates default consensus methodology has evolved throughout history. The Point-in-Time Database uses the default consensus methodology as of September 9, 2017. Consensus values as of historical perspective dates before September 9, 2017, may use a slightly different methodology than that which was used as of that date. Post September 9, 2017, any changes to FE consensus methodology will be reflected in the point-in-time consensus calculations.



## FQL AND SCREENING CODES

The codes available for point-in-time are:

**FE\_PIT\_ESTIMATE\_45D** (item,stat,rbasis,period,date)

Returns the 45-day post-event consensus for annual, quarterly and semiannual periods, as well as NTM/LTM and calendarized data.

**FE\_PIT\_ESTIMATE\_100D** (item,stat,rbasis,period,date)

Returns the 100-day consensus for annual, quarterly, and semiannual periods, as well as NTM/LTM and calendarized data.

**FE\_PIT\_ESTIMATE\_DATE** (stat,item,rbasis,period,date)

Returns the associated date for the consensus.

**FE\_PIT\_SHARP\_ESTIMATE** (item,stat,rbasis,period,date)

Returns the EPS or Sales Sharp consensus for FQ1 or FY1.

**FE\_PIT\_SHARP\_ESTIMATE\_INFO** (item,date)

Returns the company's currency as well as dilution factors and dilution dates.

All of the codes are available in FQL and Screening.

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