

ITG – amLeague  
Project

2010 - 2015

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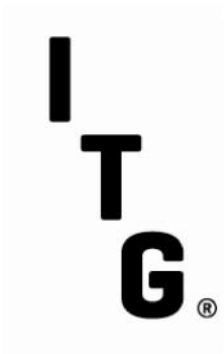
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# ITG

ITG is a leading provider of best execution solutions to the asset management community

3 core activities:

- **Equity brokerage:** agency only and 100% independent
  - traditional execution and CSA management
  - electronic trading: pioneer in algorithmic trading, smart order routing and DMA
  - global program trade execution
  - POSIT (the European dark pool) and dark pool aggregation
- **Analytical research** (no fundamental research): pre-trade, post-trade & TCA, portfolio optimisation and risk modeling
- **Technology:** multi-asset / multi-broker execution management system (ITG Triton), FIX network, request for quotes platform (RFQ-Hub)



# ITG

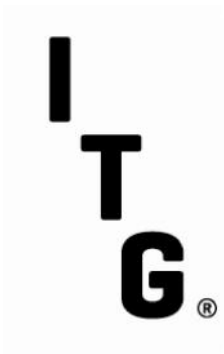
An ideal positioning in the new market environment:

- MiFID I and MiFID II & liquidity fragmentation
- Focus on best execution & broker best selection
- Growth in self directed trading & trading technology in general
- Unbundling (fundamental research vs trade execution) & advantage of being an agency / execution-only broker

A logical partnership with amLeague

ITG is the reference for:

- trade execution in the equity markets
- algorithmic trading
- pre-trade forecasting of transaction costs
- post-trade best execution evaluation
- ITG acts as the external independent certification



# amLeague – how execution prices will be set

Using the ITG TCA technology

- ITG receives the trade file every evening (on T) from amLeague
- On T+1 am, ITG returns the trade file following the below amendments to the data :

- **Theoretical execution price:** the 'next traded price in the market' i.e. the first price at which the stock has traded in the market after the portfolio manager has created the order on the amLeague website

- **ACE trading cost adjustment,** using the ITG ACE (Agency Cost Estimator) as a methodology, in order to factor in the theoretical (transaction) cost of implementing the trade. The ACE adjustment starts with a pre-trade estimate of market impact and is then adjusted for actual spread, volume and momentum conditions during the time of the order (Post Trade ACE)

- **Theoretical execution price + ACE adjustment = theoretical adjusted execution price**

- **Theoretical adjusted execution price +/- brokerage commission (as per set by amLeague) = final price used by amLeague to book the trades**



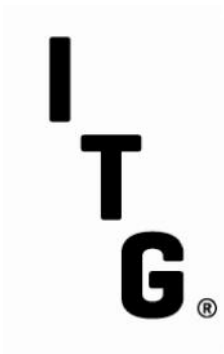
# Example

**ITG TCA**

Report: AMLeague Test V1 (AMLeague), Created: 2010/05/28 12:23:41

Security Name	Side	Order/Trade Details				Strategy	Next Tick Price	ACE Adj. in Bps	ACE Adj. Price
		Trade Size	Country	Currency	Trade Date/Time				
AVIVA PLC ORD SHS	Sell	300 000	GB	GBP	05/20/2010 14:07:33	Neutral & Non-discretionary (1-day)	304	14	303,5744
BBVA SA ORD S	Sell	100 000	ES	EUR	05/20/2010 09:45:55	Neutral & Non-discretionary (1-day)	8,781	11	8,7713
FRANCE TELECOM SA ORD SHS	Buy	200 000	FR	EUR	05/21/2010 10:20:30	Neutral & Non-discretionary (1-day)	15,455	13	15,4751
SOCIETE GENERALE SA ORD SHS	Sell	100 000	FR	EUR	05/21/2010 12:15:45	Neutral & Non-discretionary (1-day)	34,85	27	34,7559
ZODIAC AEROSPACE SA ORD SHS	Buy	10 000	FR	EUR	05/19/2010 15:12:22	Neutral & Non-discretionary (1-day)	41,015	24	41,1134

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# ACE Model

## Agency Cost Estimator (ACE)

- Econometric model that provides a pre-trade forecast of the price impact cost of an order
- Balances the trade-off between trading costs and opportunity risks subject to risk aversion and trading horizon constraints
- Measures execution cost using the implementation shortfall approach. Costs are defined as the appropriately signed difference between the average execution price and the prevailing price at the start of order execution
- Main variables: stock specific: volatility, bid/ask spread, volume, closing price, distribution of trading volume and volatility by 30 minute intraday bin
- The ACE estimate depends on the user's strategy and trading aggressiveness

## Settings for the amLeague project:

Consistent settings are used across all portfolios / all trades, in order to guarantee an equal treatment:

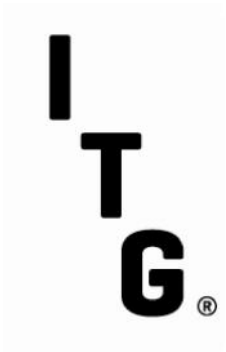
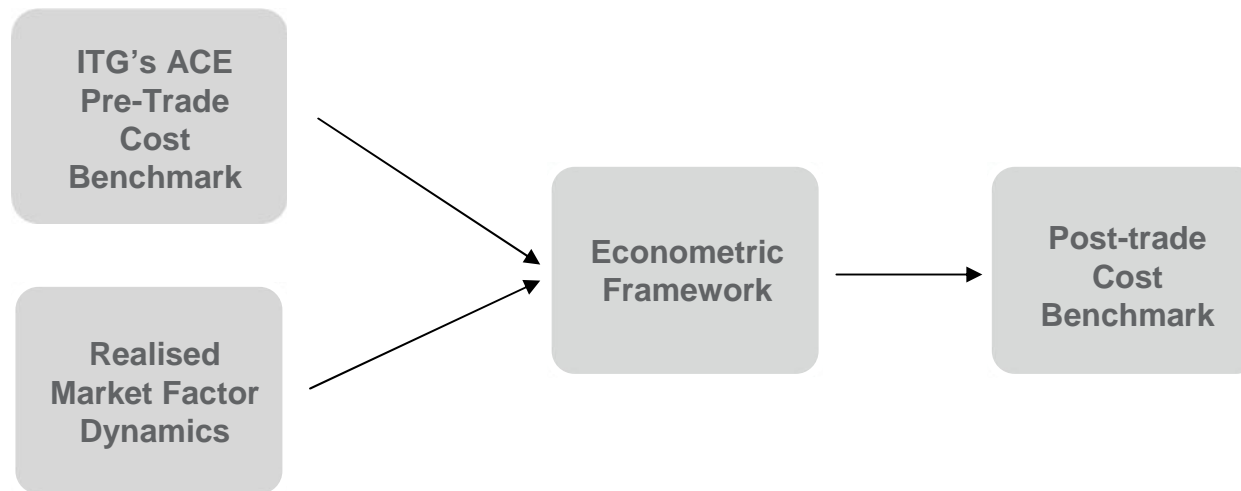
- Trading aggressiveness: 'neutral'
- Style: 'discretionary' trading with a '1-day horizon'; this implies that orders require complete execution at the end of the trading day



# Post-Trade ACE Framework

**Post-Trade ACE extends the quantitative framework of ITG's ACE pre-trade cost model**

The econometric framework of ITG's ACE is modified to incorporate market factors that contribute to the difference between actual cost and the pre-trade benchmark provided by ITG's ACE



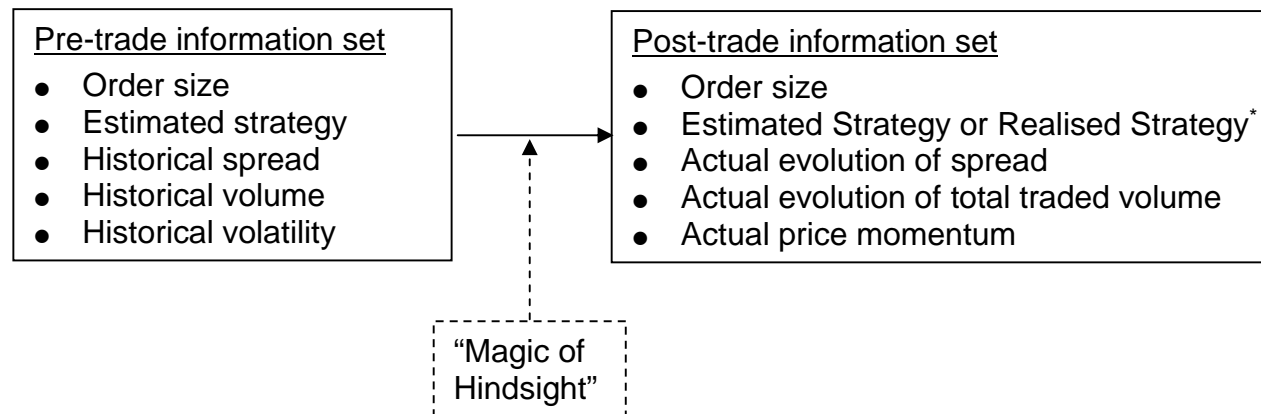
# Measuring Market Impact

Post-Trade ACE recognizes market movements attributed to dynamically changing factors, such as :

- Other market participants trading the same stock
- Sector/industry movements, etc.

Post-Trade ACE captures the costs attributed to the following factors:

- Stock price momentum
- Stock spread “surprise”
- All other trading surprises (e.g., Volume)





# Contact

**For more information, please contact:**

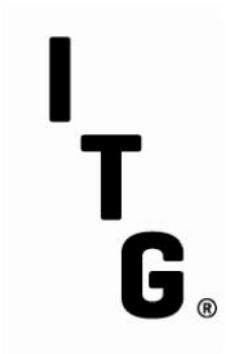
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