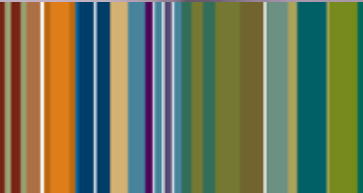
 **Protegent Trading Compliance**  
Regulation NMS Rules 605 & 606  
Transaction Cost Analysis



# The Balancing Act: Execution Cost and Regulatory Challenges

March 23, 2009

**Dial In:**

1.866.833.1046

Passcode: 201 499 6011

**Press \*6 to Mute**



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- **The Age of Confusion**  
introduction of far-reaching, ambiguous regulation
- **The Age of Excess**  
capitalizing on the confusion
- **The Dark Ages**  
paying for the sins of the above
- **The Age of Reason**  
returning to the **enforcement** of **existing** regulation
- **The Age of Opportunity**  
compliance and trading are merging

- Historical overview & Theory
- New Role of Compliance
- Regulation NMS Rules 605 & 606
- Implications of the Status Quo
- Benefits of TCA  
(Costs and Best Execution Theme)

- Are you confident the firm is satisfying fiduciary responsibilities?
- Is the process adequately documented?
- Can trading scenarios be replicated “after the fact” in the event of an inquiry?

- **Execution Analysis**
- **Understanding Trading Costs**
- **Execution and Cost Management (ECM)**

# SUNGARD Protegent Trading Compliance – Alerts

Synapse Shell - Windows Internet Explorer

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## Order Execution Alerts [ Hide Filters ]

New Filter  Save for Private   Filters None

**Filters** [ Reset ] [ Clear ] [ Go ]

Key >=  Type = All  Symbol = Text  AAPL Market Center = Text  Branch = Text   
 Global ID >=  Time In Force = All  Side = Buy  Security Type = All  Trader = Text   
 Order ID >=  Order Date All  Quantity >= 1000 Exchange = All  Submitted All   
 Alert All  Updated All  Score >=   
 Sub Alert All  Reviewer =  Status = All   
 Type All  Unit All  Unit

### Results

Detail	Key	Order ID	Order Date	Type	Symbol	Side	Quantity	Market Center	Exchange	Security Type	Branch	Trader	Score	Updated	Reviewer	Status
	11442		01/27/2009	Market	AAPL	Buy	2864	Client1	NASDAQ Stock Exchange	NMS	B009	T01	1	02/11/2009	SYS1	New

Records  - 1 of 1; Records per page

# SUNGARD Protegent Trading Compliance – Alerts

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## Order Execution Alert Detail

### Alerts



#### Caution:

- [300] shares of this Held Market Order order were not executed within the allowable time window of [30] seconds.
- [300] shares for this order were disimproved for a total of [\$9.4999]. Each trade was executed at [\$38.4500, \$38.4720]. The best market bid/ask price was [\$38.5000]. Total disimprovement amount for each trade was [\$2.5000, \$7.0000] respectively.
- [300] shares for this order were disimproved compared to the NBBO execution "window" for a total of [\$9.4999]. Each trade was executed at [\$38.4500, \$38.4720]. The best NBBO execution "window" price for each trade was [\$38.5000, \$38.5000]. Total disimprovement amount for each trade was [\$2.5000, \$7.0000] respectively.

### Action History

[ Submit Action ]

User	Date	Action	Comments
SYS1	02/11/2009 22:43:14	New	Created by processor
SU100	02/12/2009 18:19:23	Pending OP	

### Summary

Result Key	10127	Updated	02/11/2009 22:43:14	Status	New
Submitted	02/11/2009 22:43:14	Reviewer	SYS1	Score	3

Market Center	Client1	All Shares	300	Shares 00-09 Secs	0	Avg Realized Spread	0.2233	At-the-Quote Shrs	0
Order Date	01/27/2009	Cancelled Shares	0	Shares 10-29 Secs	0	Avg Effective Spread	0.1233	At-the-Quote Avg Secs	0.0
Symbol	AVAV	Market Center Shares	0	Shares 30-59 Secs	300	PI Shares	0	Outside-the-Quote Shrs	300
Order Type	Market Order - Market	Away Shares	300	Shares 01-05 Mins	0	PI Avg Amt	0.0000	Outside-the-Quote Avg Amt	0.0317
Order Size	100-499	Executed Shares	300	Shares 05-30 Mins	0	PI Avg Secs	0.0	Outside-the-Quote Avg Secs	36.0
NASD Status	NMS	Fill Rate	100.0000%	Avg Execute Secs	36.0	Quoted Spread	0.0600	Liquidity Enhancement	0.0000%
Exchange	NASDAQ Stock Exchange	Venue		Effective / Quoted			2.0555		

Covered 605	Yes	All Or None	No	Average Priced	No	Crossed	No	No Matching Bid Offer	No	Not Market Hours	No	Special Handling	No
Covered 606	Yes	Directed	No	Manual Received	No	Market Halted	No	Not Held	No	Not Market Maker	No	Stopped	No

### Open Order

Order ID		Symbol	AVAV	Entry Time	01/27/2009 09:33:36	Crossed	No
Global ID		Side	Sell	All Or None	No	Receipt Bid Price	38.50000000
Order Ref ID		Limit Price	\$0.0000	Block Indicator	Not Block Trade	Receipt Bid Qty	50
Firm ID	Firm1	Quantity	300.0000	Not Held	No	Receipt Ask Price	38.56000000
Market Maker ID	----	Type	Market	Time In Force	Day Order	Receipt Ask Qty	2
Branch	B307	Trans Type	New_Order	Acted As	A	Receipt Time	01/27/2009 09:32:44
Source OMS	OMS07	Trader	T01	OMS User	999999999	Window Avg Bid Qty	0
Special Handling Code		Delivery Instructions		Directed	No	Window Avg Ask Qty	0
Stopped Info							

### Route Detail

Order System	Route ID	Firm ID	Price	Quantity	Destination Desk	External Destination	ISO Indicator
BRASS	360655629	Firm1	\$0	300	INVAV	UBRS	No

- Are you challenged by the tools in the market place, when attempting your “Regular and Rigorous” review of orderflow?
- Do you have the means to address anomalies prior to the monthly dissemination of Best Execution results?

# SUNGARD Execution Metrics

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## Order Execution Stats

[ Hide Filters ]

New Filter  Save for Private   Filters None

### Filters

[ Reset ] [ Clear ] [ Go ]

Key	>=		Type 605	=	All	Symbol	=	Text	Market Center	=	Text	Branch	=	Text
Global ID	>=		Type 606	=	All	Side	=	All	Security Type	=	All	Trader	=	Text
Order ID	>=		Time In Force	=	All	Quantity	>=		Exchange	=	All	Submitted	All	
Order Date	All		Acted As	=	All	Order Size	=	All	Venue	=	Text			
Covered 605	All		All Or None	All		Average Priced	All		Crossed	All		No Matching Bid Offer	All	
Covered 606	All		Directed	All		Manual Received	All		Market Halted	All		Not Held	All	
Covered Orders	>=		Shares 00-09 Secs	>=		Avg Realized Spread	>=		At-the-Quote Shrs	>=		At-the-Quote Avg Secs	>=	
Covered Shares	>=		Shares 10-29 Secs	>=		Avg Effective Spread	>=		Outside-the-Quote Shrs	>=		Outside-the-Quote Avg Amt	>=	
Cancelled Shares	>=		Shares 30-59 Secs	>=		PI Rate	>=		Outside-the-Quote Avg Secs	>=		Outside-the-Quote Avg Secs	>=	
Market Center Shares	>=		Shares 01-05 Mins	>=		PI Avg Amt	>=		Outside-the-Quote Avg Secs	>=		Liquidity Enhancement	>=	
Away Shares	>=		Shares 05-30 Mins	>=		PI Avg Secs	>=							
Fill Rate	>=		Age Execution Secs	>=		Effective / Quoted	>=							
Type	All		Unit	All		Unit								

### Results

605

Detail	Order ID	Security Type	Market Center	Date	Symbol	Type 605	Order Size	Share Type				Share Time				Avg Spread		Price Improvement			At The Quote		Outside The Quote			Exec Se	
								All	Cancelled	Market Center	Away	00_09 Secs	10_29 Secs	30_59 Secs	01_05 Mins	05_30 Mins	Realized	Effective	Shares	Avg Amt	Avg Secs	Shares	Avg Secs	Shares	Avg Amt		Avg Secs
	253000193	NMS	Client1	01/27/2009	AAPL	At-quote	500-1999	1000	0	0	1000	0	900	100	0	0	\$0.4700	(\$0.1200)	1000	\$0.0700	28.4	0	0.0	0	\$0.0000	0.0	2
	253001351	NMS	Client1	01/27/2009	AAPL	Market Order	100-499	100	0	0	100	100	0	0	0	\$0.3360	(\$0.0040)	100	\$0.0120	0.0	0	0.0	0	\$0.0000	0.0		
	252983587	NMS	Client1	01/27/2009	AAPL	Market Order	0-99	24	0	0	24	24	0	0	0	\$0.5600	\$0.0200	0	\$0.0000	0.0	24	0.0	0	\$0.0000	0.0		
	252986866	NMS	Client1	01/27/2009	AAPL	Market Limit	100-499	100	0	0	100	100	0	0	0	\$0.1398	\$0.0198	100	\$0.0001	0.0	0	0.0	0	\$0.0000	0.0		
	252988399	NMS	Client1	01/27/2009	AAPL	Market Order	100-499	100	0	0	100	100	0	0	0	\$0.2660	\$0.0160	100	\$0.0020	0.0	0	0.0	0	\$0.0000	0.0		
	252989519	NMS	Client1	01/27/2009	AAPL	Market Order	0-99	20	0	0	20	20	0	0	0	\$0.0300	\$0.0200	0	\$0.0000	0.0	20	0.0	0	\$0.0000	0.0		
	252990140	NMS	Client1	01/27/2009	AAPL	Market Limit	500-1999	500	0	0	500	500	0	0	0	\$0.0998	\$0.0298	500	\$0.0001	0.0	0	0.0	0	\$0.0000	0.0		
	252990891	NMS	Client1	01/27/2009	AAPL	Market Order	0-99	31	0	0	31	31	0	0	0	(\$0.1200)	\$0.0300	0	\$0.0000	0.0	31	0.0	0	\$0.0000	0.0		
	252992431	NMS	Client1	01/27/2009	AAPL	Inside-quote	500-1999	1000	1000	0	0	0	0	0	0	\$0.0000	\$0.0000	0	\$0.0000	0.0	0	0.0	0	\$0.0000	0.0	10	

# SUNGARD Visualization of Execution Metrics

## Execution Speed vs Arrival Time Stamp

[ Edit ] All Daily Demo - 2 (10057)

**Filters** [ Reset ] [ Clear ] [ Go ]

Order Type = Market Limit Symbol = Text

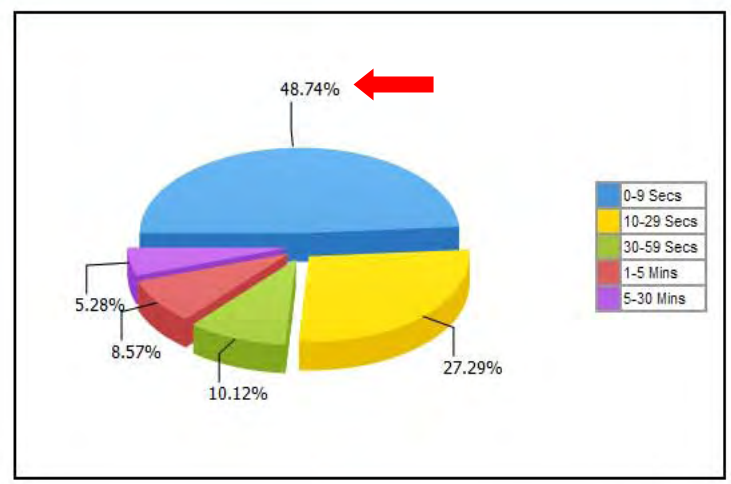
Order Size = All

Type All Unit All  Direct Reports

### Results

Market Center	0-9 Secs	10-29 Secs	30-59 Secs	1-5 Mins	5-30 Mins
Client1	47.56	26.63	9.88	8.37	5.15

Records 1 - 1 of 1; Records per page 20 [ Go ]



# SUNGARD Visualization of Execution Metrics

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## Execution Quality -- Price Improvement Shares, At Quote and Outside Quote

[ Edit ] All Daily Execution Quality - PI\_ATQ\_OTQ (10027)

### Filters

[ Reset ] [ Clear ] [ Go ]

Order Date: All

Shares 00-09 Secs: >=

Covered Orders: >=

Order Type: = All

Shares 01-05 Mins: >=

Shares 10-29 Secs: >=

Covered Shares: >=

Order Size: = All

Shares 05-30 Mins: >=

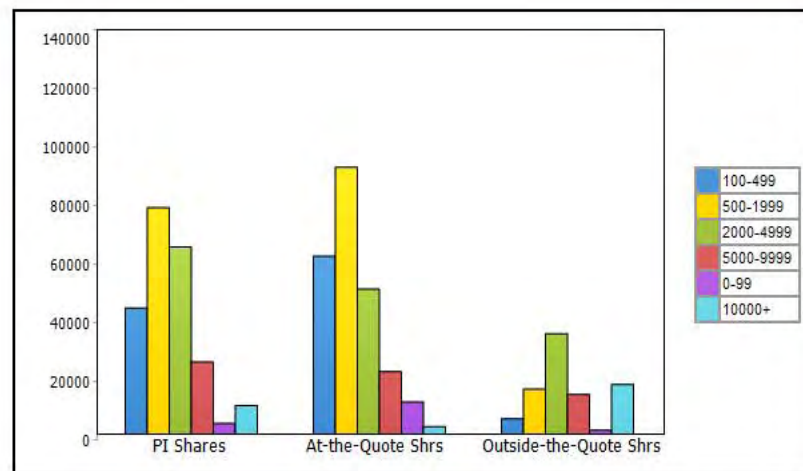
Shares 30-59 Secs: >=

Type: All Unit: All  Direct Reports

### Results

Order Size	PI Shares	At-the-Quote Shrs	Outside-the-Quote Shrs
100-499	43,719	61,602	5,402
500-1999	78,430	92,411	15,649
2000-4999	64,886	50,252	34,859
5000-9999	25,000	21,731	13,819
0-99	3,813	11,167	1,440
10000+	10,000	2,700	17,300

Records 1 - 6 of 6; Records per page 20 [ Go ]



# Protegent Trading Compliance – Best Execution Data Comparison Tool Review

## At Quote Review

[ Edit ] All Performance At Quote (10015)

### Filters

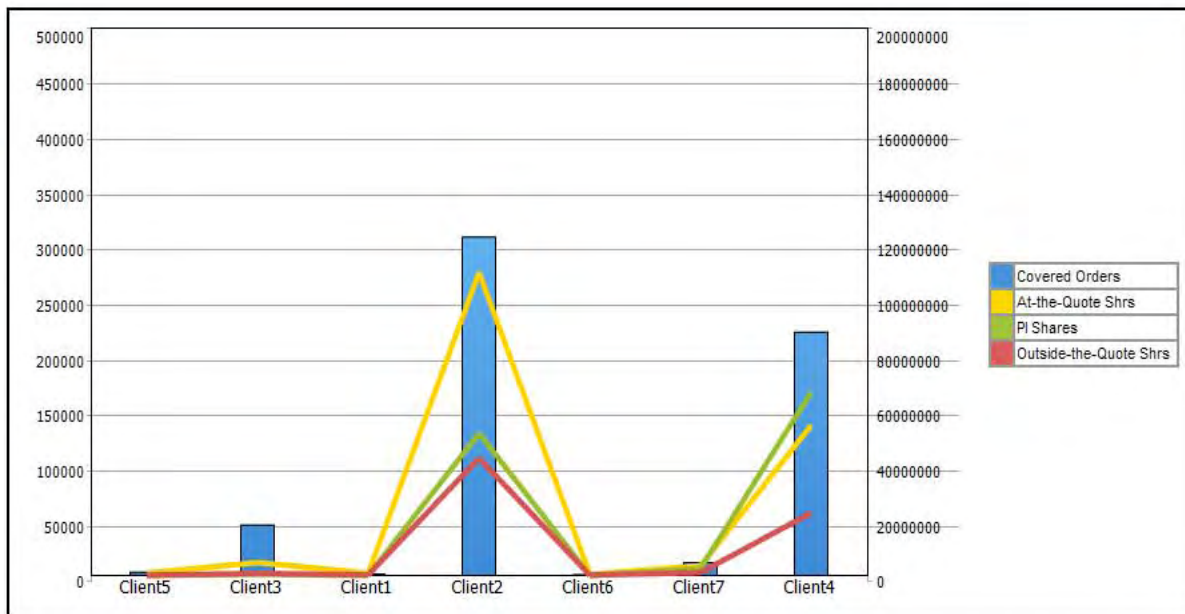
[ Reset ] [ Clear ] [ Go ]

Month = All  
 Market Center = Text  
 At-the-Quote Shrs >=   
 Order Size = All  
 Symbol = Text  
 Avg Realized Spread >=   
 At-the-Quote Avg Secs >=   
 Order Type = All  
 Covered Orders >=

### Results

Market Center	Covered Orders	At-the-Quote Shrs	PI Shares	Outside-the-Quote Shrs
Client5	2,983	932,621	61,515	219,989
Client3	46,199	4,786,694	682,213	781,963
Client1	1,596	890,488	58,844	336,091
Client2	309,332	110,826,988	52,017,450	42,952,716
Client6	931	457,120	32,913	211,130
Client7	11,990	3,593,265	2,586,899	1,109,754
Client4	222,515	54,945,055	67,097,343	22,949,311

Records 1 - 7 of 7; Records per page 20 [ Go ]



# Protegent Trading Compliance – Best Execution Data Comparison Tool Review

Library Schedule Queue

## Average Price Improvement by Market Center

[ Edit ] All Performance Price Improvement (10002)

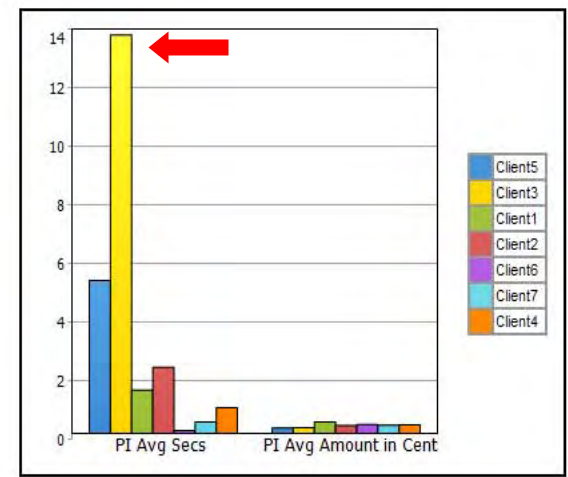
### Filters

[ Reset ] [ Clear ] [ Go ]

Month = All Market Center = Text PI Avg Amt >= Order Type = All  
 Symbol = Text PI Avg Secs >= PI Shares >= Order Size = All

### Results

Market Center	PI Avg Amount in Cents	PI Avg Secs
Client5	0.19	5.3
Client3	0.20	13.8
Client1	0.40	1.5
Client2	0.28	2.3
Client6	0.31	0.1
Client7	0.29	0.4
Client4	0.30	0.9



Records 1 - 7 of 7; Records per page 20 [ Go ]

- **Is there a point of optimal balance in this new trading environment?**

**...If so, how do I get there?**

# SUNGARD Protegent Trading Compliance – Trade Cost Analytics

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## Order Execution Costs [ Edit ]

### Filters

[ Reset ] [ Clear ] [ Go ]

Month = Jul 2008	Allocation = All	Security Type = All	Executions >=
Name	Charge Group = All	Primary Exchange = All	Shares >=
Vendor	Charge Type = All	Route Venue = Text	Rate >=
ID >=	Price Group = All	Exe Venue = Text	Amount >=

### Cost

[ Add ] [ Delete ]

Detail	ID	Month	Vendor	Name	Allocation	Charge Group	Charge Type	Price Group	Security Type	Primary Exchange	Route Venue	Exe Venue	Executions	Shares	Rate	Amount	Delete
<input type="checkbox"/>	10001	Jul 2008		AMEX POSTED ORDERS	Rated	Order Handling	Posted	> 1	L	American Stock Exchange	AMEX	AMEX	945	200,388	-0.001700	-340.600000	<input type="checkbox"/>
<input type="checkbox"/>	10002	Jul 2008		AMEX NON-POSTED ORDERS	Rated	Order Handling	Non-Posted	> 1	L	American Stock Exchange	AMEX	AMEX	800	169,541	0.003500	593.390000	<input type="checkbox"/>
<input type="checkbox"/>	10003	Jul 2008		AMEX ROUTED ORDERS	Rated	Order Handling	Routed	> 1	L	American Stock Exchange	AMEX	AMEX	1,054	223,362	0.004000	893.450000	<input type="checkbox"/>
<input type="checkbox"/>	10004	Jul 2008		AMEX POSTED ORDERS < \$1/SHARE	Rated	Order Handling	Posted	< 1	L	American Stock Exchange	AMEX	AMEX	0	0	0.000500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10005	Jul 2008		AMEX NON-POSTED ORDERS < \$1/SHARE	Rated	Order Handling	Non-Posted	< 1	L	American Stock Exchange	AMEX	AMEX	0	0	0.001500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10006	Jul 2008		AMEX ROUTED ORDERS < \$1/SHARE	Rated	Order Handling	Routed	< 1	L	American Stock Exchange	AMEX	AMEX	0	0	0.003500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10007	Jul 2008		AMEX ODDLOT ORDERS	Rated	Order Handling	OddLot	<>	L	American Stock Exchange	AMEX	AMEX	51,747	99	0.040000	3.960000	<input type="checkbox"/>
<input type="checkbox"/>	10008	Jul 2008		LISTED POSTED ORDERS	Rated	Order Handling	Posted	<>	L	New York Stock Exchange	NYSE	NYSE	12,922	10,970,280	-0.001800	-19,746.500000	<input type="checkbox"/>
<input type="checkbox"/>	10009	Jul 2008		LISTED NON-POSTED ORDERS	Rated	Order Handling	Non-Posted	<>	L	New York Stock Exchange	NYSE	NYSE	8,258	2,739,440	0.003400	9,314.120000	<input type="checkbox"/>
<input type="checkbox"/>	10010	Jul 2008		LISTED ROUTED ORDERS TO NYSE	Rated	Order Handling	Routed	<>	L	New York Stock Exchange	NYSE	NYSE	13,739	1,750,645	0.001500	2,625.970000	<input type="checkbox"/>
<input type="checkbox"/>	10011	Jul 2008		LISTED ROUTED ORDERS TO OTHER MARKET CENTERS	Rated	Order Handling	Routed	<>	L	New York Stock Exchange	NYSE	NYSE	0	2,912,732	0.003500	10,194.560000	<input type="checkbox"/>
<input type="checkbox"/>	10012	Jul 2008		LISTED POSTED ORDERS < \$1/SHARE	Rated	Order Handling	Posted	< 1	L	New York Stock Exchange	NYSE	NYSE	0	0	0.000500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10013	Jul 2008		LISTED NON-POSTED ORDERS < \$1/SHARE	Rated	Order Handling	Non-Posted	< 1	L	New York Stock Exchange	NYSE	NYSE	0	0	0.001500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10014	Jul 2008		LISTED ROUTED ORDERS < \$1/SHARE	Rated	Order Handling	Routed	< 1	L	New York Stock Exchange	NYSE	NYSE	0	0	0.003500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10015	Jul 2008		LISTED ODDLOT ORDERS	Rated	Order Handling	OddLot	<>	L	New York Stock Exchange	NYSE	NYSE	4	2,719	0.040000	108.760000	<input type="checkbox"/>
<input type="checkbox"/>	10016	Jul 2008		OTC POSTED ORDERS	Rated	Order Handling	Posted	<>	OTC	NASDAQ Stock Exchange	INET	NASD	4,158	2,881,547	-0.001800	-5,186.780000	<input type="checkbox"/>
<input type="checkbox"/>	10017	Jul 2008		OTC NON-POSTED ORDERS	Rated	Order Handling	Non-Posted	<>	OTC	NASDAQ Stock Exchange	INET	NASD	1,589	1,100,994	0.003400	3,743.380000	<input type="checkbox"/>
<input type="checkbox"/>	10018	Jul 2008		OTC ROUTED ORDERS	Rated	Order Handling	Routed	<>	OTC	NASDAQ Stock Exchange	INET	NASD	1,993	1,381,299	0.004000	5,525.200000	<input type="checkbox"/>
<input type="checkbox"/>	10019	Jul 2008		OTC POSTED ORDERS < \$1/SHARE	Rated	Order Handling	Posted	< 1	OTC	NASDAQ Stock Exchange	INET	NASD	0	0	0.000500	0.000000	<input type="checkbox"/>
<input type="checkbox"/>	10020	Jul		OTC NON-POSTED ORDERS <	Rated	Order	Non-	< 1	OTC	NASDAQ Stock	INET	NASD	0	0	0.001500	0.000000	<input type="checkbox"/>

# Protegent Trading Compliance - Trade Cost Analytics

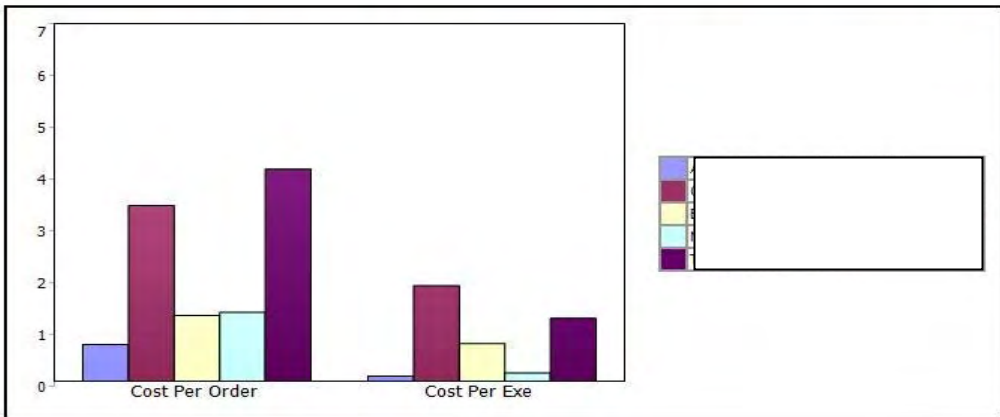
## Vendor Cost per Order and Execution

### Vendor Cost By Order/Execution

[ [Edit](#) ] All  Cost  Vendor Cost By Order/Execution (10046)

**Filters** [Reset](#) | [Clear](#) | [Go](#)

Month =  All  Charge Group =  All  Charge Type =  All  Price Group =  All



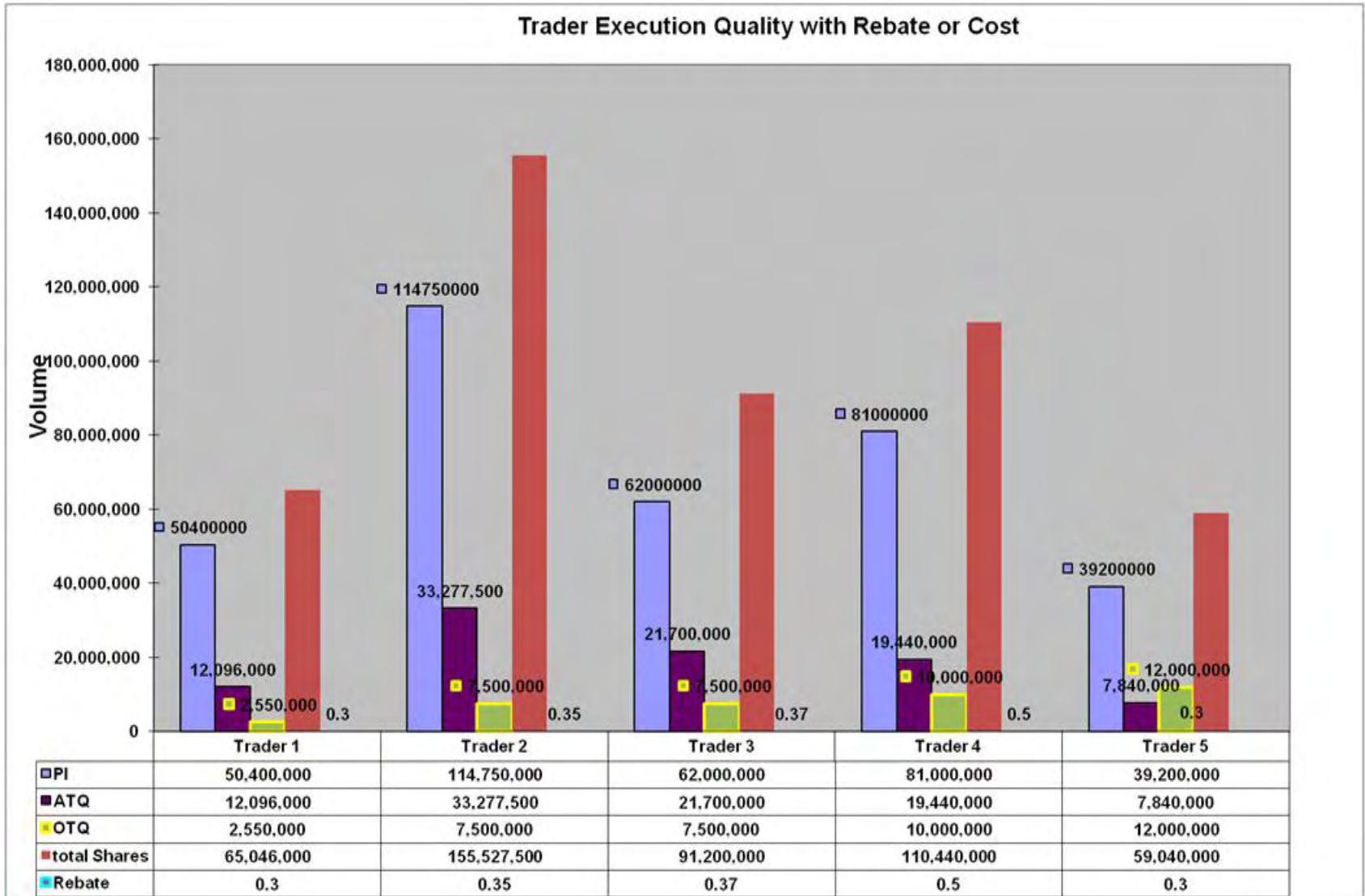
### Results

Vendor	Cost Per Order	Cost Per Exe
	\$0.721236	\$0.103315
	\$3.438419	\$1.872145
	\$1.286354	\$0.741893
	\$1.353932	\$0.164001
	\$4.153949	\$1.234199

Records  - 5 of 5; Records per page

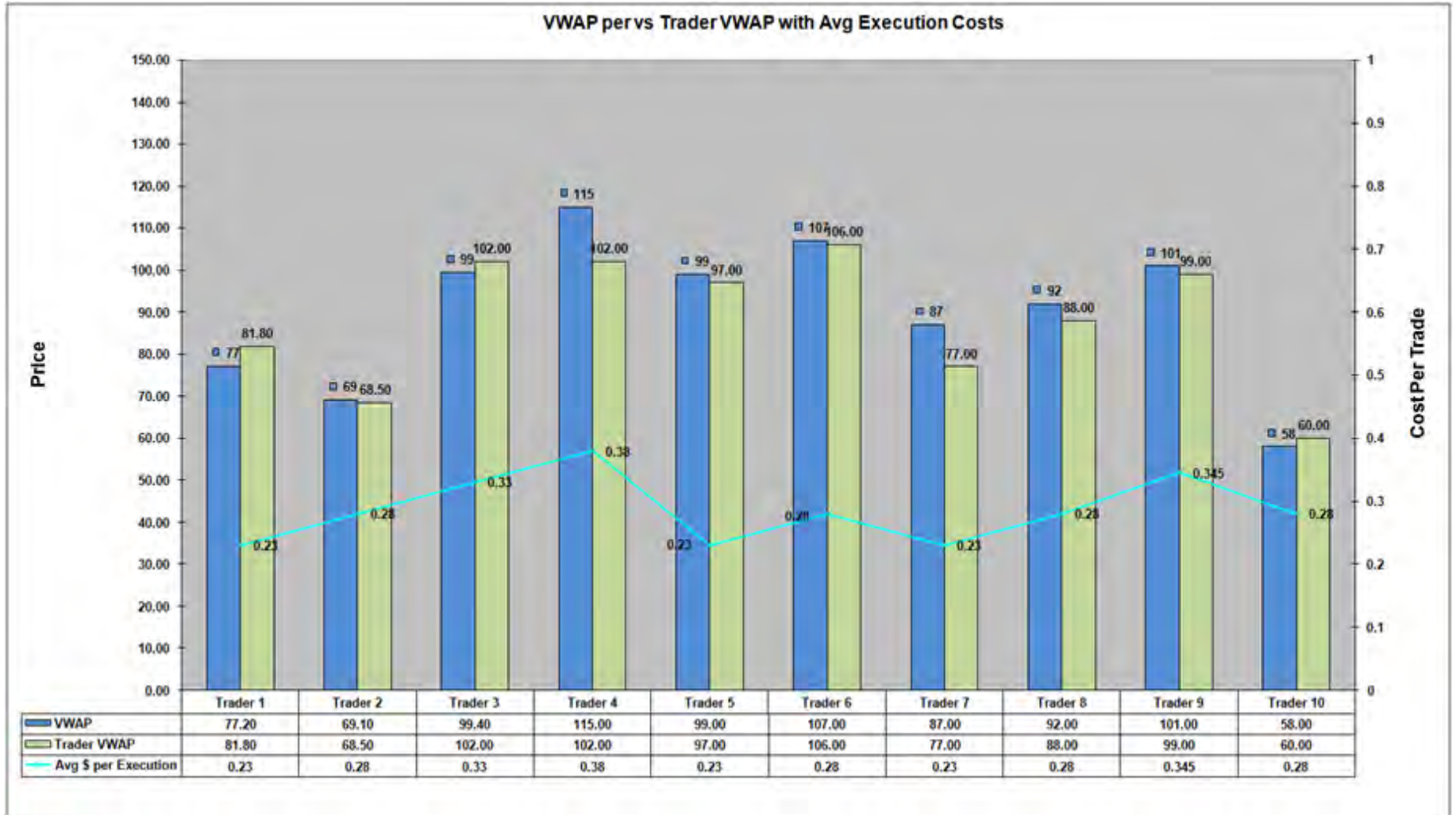
# Trade Cost Analytics

## The Balancing Act: Best Execution vs. Cost



# Trade Cost Analytics

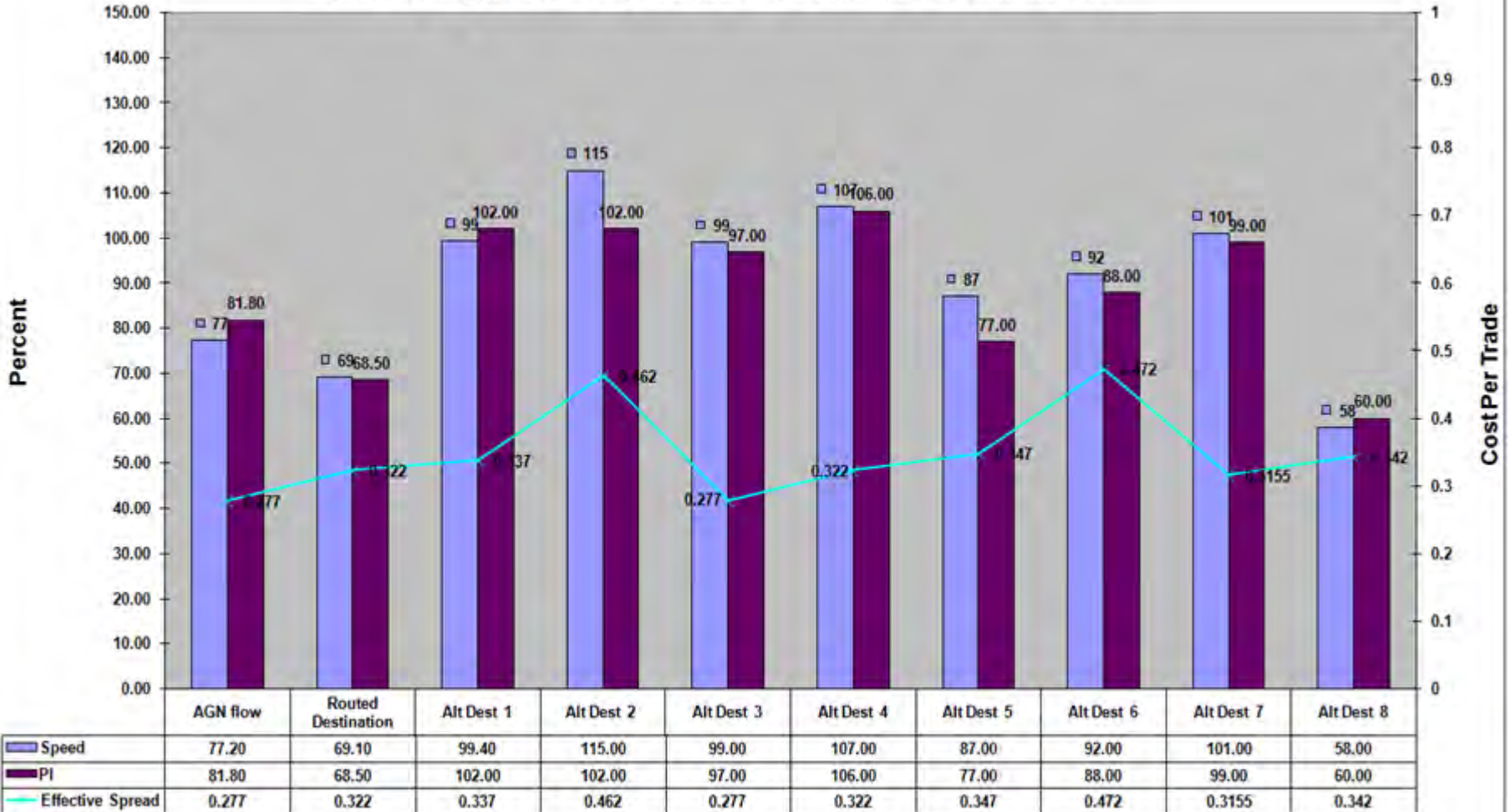
## The Balancing Act: Best Execution vs. Cost



# Trade Cost Analytics

## The Balancing Act: Best Execution vs. Cost

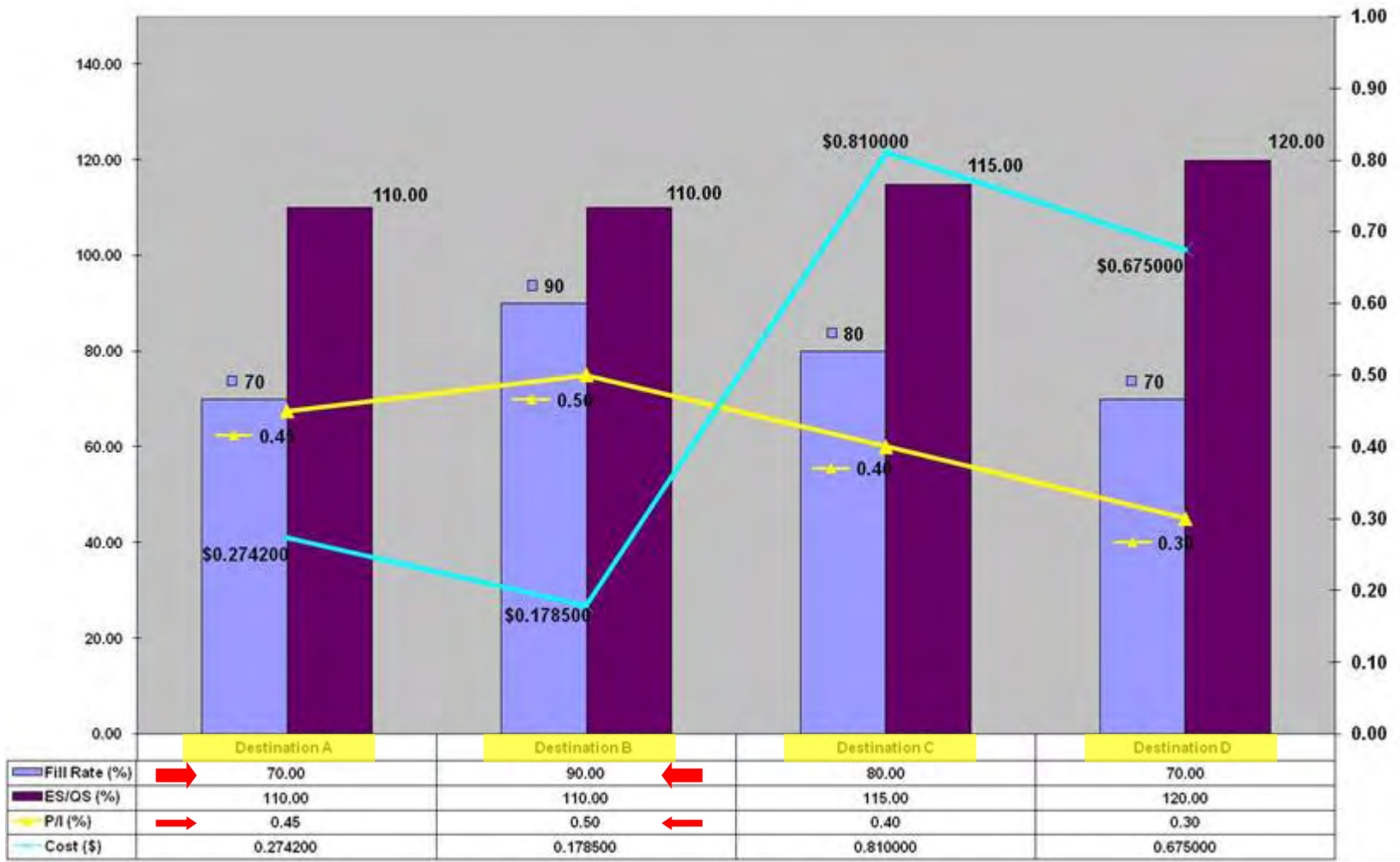
Review of Agn Flow vs Destination vs Alternate Destinations



# Trade Cost Analytics

## The Balancing Act: Best Execution vs. Cost

Execution Quality Metrics vs. Cost per Order





- Protegent Trading Compliance provides tools to review Execution Quality at new levels of granularity
- Understanding cost is **not** difficult – understanding the reason behind the costs is most important
- Bringing them together provides the ability to balance Best Execution and associated attributable Costs

**Email**



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- [anthony.becker@sungard.com](mailto:anthony.becker@sungard.com)



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**April 22-24, 2009**

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