

2012 SECURITIES INDUSTRY BUSINESS CONTINUITY TEST

October 27, 2012

SUMMARY OF RESULTS

Test Lead By

Securities Industry and Financial Markets Association



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Summary of Results

Executive Summary

The 2012 test is part of an ongoing industry-driven backup site testing initiative that began in 2003 and is led by Securities Industry and Financial Markets Association (SIFMA)¹.

The 2012 test followed the format of prior industry-wide tests where firms submit test orders and transactions from their backup sites to the markets and industry utilities. The test involved components for Equities, Options, Fixed Income, Clearing and Settlement Utilities, Market Data, Payment Systems, Treasuries, Commercial Paper and FX. The exercise was supported by all major exchanges, markets and industry utilities. Participation in the test was voluntary and results for specific firms, exchanges, markets and utilities are retained in strict confidence by SIFMA.

Participants in the SIFMA test included **124 securities firms** and **56 market organizations**. During the test approximately **744 communications connections** were established between securities firms and banks and the exchanges, markets and utilities. **Test transactions on these connections were successful 97% of the time**. These results were generally comparable to prior tests. These results underscore the ability of the securities industry to operate through adverse conditions

In parallel with the SIFMA test on October 27, the Futures Industry Association led a backup site test of the futures exchanges and clients. The Futures test included 18 futures exchanges and clearing organizations. **In the futures test, 68 clearing/non-clearing firms and 46 trading firms participated. Between 87% -100% of firms tested successfully, depending on the exchange.**

¹ The Securities Industry and Financial Markets Association (“SIFMA”) brings together the shared interests of hundreds of securities firms, banks and asset managers. SIFMA’s mission is to support a strong financial industry, investor opportunity, capital formation, job creation and economic growth, while building trust and confidence in the financial markets. SIFMA, with offices in New York and Washington, D.C., is the U.S. regional member of the Global Financial Markets Association (“GFMA”). For more information, visit www.sifma.org.

Test Objectives

1. To assess the ability of securities market participants to operate through a significant emergency from their backup data centers and work area recovery sites and to examine the level of resiliency of the markets and the industry overall.
2. To provide firms and exchanges with an opportunity to test and evaluate their backup sites and backup communications with the markets on a single day.

Markets and Utilities Tested and Expanded Test Components

The 2012 test included components for Equities, Options, Fixed Income, Clearing and Settlement Utilities, Market Data, Payment Systems, Treasuries, Commercial Paper and FX.

Market participants included all major exchanges, markets and industry utilities plus major service bureaus and market data vendors. See **Appendix A** for list of participating market entities.

For 2012, the test was enhanced in a number of ways with new test components and additional participating markets.

- ✓ New exchanges and markets were added including Canadian Derivatives Clearing Corporation, MIAX, CLS and FXAll.
- ✓ A new test component was added for commercial paper that included Bloomberg and DTCC.
- ✓ Buy side firms were encouraged to participate in the test this year. A number of additional firms registered that conduct business directly with the exchanges, markets and utilities. We began experimenting with a test between buy side firms and broker/dealers that focused on private line testing. We plan to expand on this in 2013.

The Financial Information Forum assisted in coordinating with the services bureaus and market data vendors during the test.

Test Format

Participating firms, exchanges, industry utilities, service bureaus and payment banks, operating from backup sites (data center and work area recovery), simultaneously submitted scripted test transactions to markets and settlement entities and receive simulated confirmations. The test was not intended to be a simulation of any specific real event.

Firms and markets were requested to test from backup locations but, in some instances, this was not technically feasible. For a connection between a firm and a market to be considered a valid test interaction, at least one of the entities had to test from a backup site. A number of exchanges and markets and some firms run multiple “hot” sites as a normal data center configuration. In a multiple hot site configuration, order traffic is routed automatically to one or more of the sites and if a site fails, traffic is automatically shifted to the operational sites. This test did not require shutdown of one of the hot sites.

Test Participants Summary

Exchanges, Markets and Industry Utilities (Equities, Options, FI, Clearing, Treasuries, FX)	35
Securities Firms (Including those testing directly with markets and through service bureaus)	124
Service Bureaus	9
Market Data Vendors	7
Payment Organizations	1
Future Exchanges and Clearing Organizations	18

See Appendix A for a complete list of market entities participating. The names of the participating firms will not be released.

Overall Test Results

There were 744 test interactions in the SIFMA test components of which 97% were successful.

The success rate for 2012 is in line with results for the past few years.

The firms participating in the test account for greater than 85 percent of the normal market volume.

Notes: A test interaction is a connection between a firm and an exchange, market, service bureau or utility. Test interactions are considered successful if a two-way communication is recorded during the test window. Interactions that experienced issues that were corrected during the test window were counted as successful tests.

Successful Test Interactions by Market

Equities	97%
Options	97%
Fixed Income	95%
Clearing & Settlement	100%
Commercial Paper	100%
Treasury	100%
FX	100%
Payments	100%
Market Data	100%
Service Bureaus	97%
Total	97%

Types of Issues Resulting in Unsuccessful Test Interactions

The type of issues noted during this year's test are consistent with issues encountered in prior test except that the organizations experiencing the problems seem to vary from year to year. Types of problems include:

- ✓ General connectivity issues at firms
- ✓ System specific connectivity issues at firms
- ✓ System specific connectivity issues at one clearing bank

Observations and Conclusions

- This test and prior annual industry tests have consistently achieved extremely positive results that underscore the ability of the industry as a whole to operate through adverse conditions.
- One of the primary values of the annual test is the opportunity it provides for firms and markets to test their backup strategies collectively as an industry.
- The types of problems that caused the failures during this test were not so significant that, during a real event, they could not be addressed fairly quickly with full resources.
- Participants agree that it is valuable to continue to modify and expand the scope of the test each year.
- The backup strategies installed by securities firms and market entities performed extremely well.
- The need for firms to regularly and frequently test their backup connections to market entities is critical.
- Firms should ensure that appropriate controls are in place to manage changes to applications and hardware that may impact backup site connectivity to markets. Some of the problems seen during the test resulted from applications changes and hardware configuration changes that were installed since the last test.

Inquires About the SIFMA Test

Inquires about the test may be directed to:

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Futures Industry Test

For information about the Futures test led by Futures Industry Association, see <http://www.futuresindustry.org/business-continuitydisaster-recovery.asp>

Appendix A

PARTICIPATING MARKET ORGANIZATIONS

Equities

BATS BZX
BATS BYZ
Chicago Stock Exchange
Direct Edge EDGA
Direct Edge EDGX
NASDAQ
National Stock Exchange
NYSE/Euronext
NYSE/AMEX

Options

BATS Options
Boston Options Exchange
Canadian Derivatives Clearing Corporation
Chicago Board Options Exchange
ISE
MIAX
NASDAQ OMX PHLX
NYSE/ARCA
The Options Clearing Corporation

Fixed Income

BondDesk - ATS
MarketAxess - ATS
The Municenter - ATS
TradeWeb - ATS
Dealerweb - IDB
eSpeed - IDB
ICAP - IDB
Tullett Prebon – IDB
Bank of New York - Cllg Bank
JP Morgan Chase - Cllg Bank

Clearing/Settlement

DTCC
Omgeo

Payments

Fedwire
CHIPS
SWIFT

Market Data

Bloomberg
eSignal
Factset
Fidessa
FT Interactive Data
OCT Markets Group
SIX Telekurs
Thomson Reuters

Service Bureaus

Broadridge ICI
Broadridge BPS
Broadridge SIS
Fidessa
Lava Trading
OTC Markets Group SB
ReadQ
SunGard Phase 3
SunGard Vildi
Thomson Reuters BETA Systems

Treasuries

US Treasury Auctions
Govex

FX

Bloomberg Tradebook
Bloomberg FXGO
CLS
FXAll
Hotspot

Futures

Canadian Derivatives Clearing Corporation
CBOE Futures Exchange
CME Group
ELX Futures
ICE Clear Canada
ICE Clear EU
ICE Clear US
ICE Exchanges
International Derivatives Clearing Group
Kansas City Board of Trade
Mercado Español de Futuros Financieros
Minneapolis Grain Exchange
Montreal Exchange
New York Portfolio Clearing
NYSE Liffe US
Options Clearing Corporation