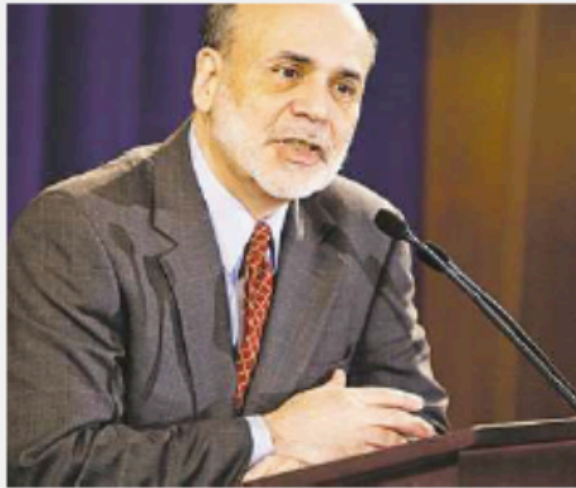
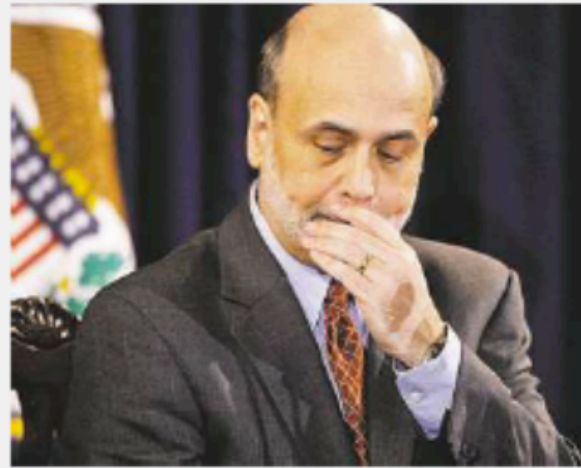


The Impact of News Readability on Market Response Times

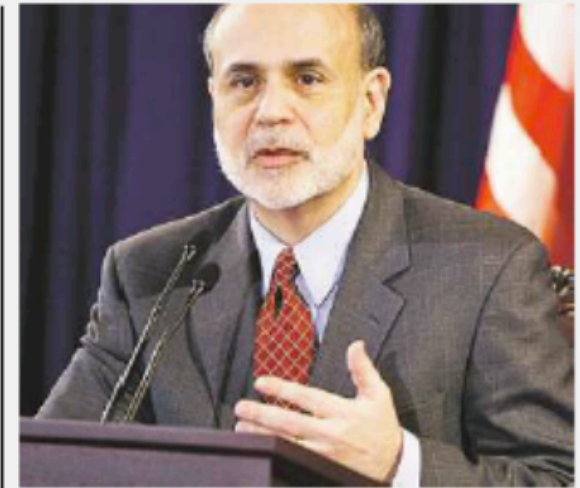
Nicholas J. Switanek
Kellogg School of Management
R in Finance
4.30.2011



... the [Fed's policy-making] committee sees the economic recovery as proceeding at a moderate pace.



Our expectation is that inflation will come down and towards a more normal level.



A lot of people are having a very tough time, so I can certainly understand why people are impatient.

ALL EARS ON BEN: In the first ever news conference by a Fed chairman, Ben Bernanke moved U.S. stock prices.

Bloomberg News (2) Abaca USA (center)

Fed Takes Foot Off the Gas

BY JON HILSEN RATH
AND LUCA DI LEO

The Impact of News Readability
on Market Response Times
Michael J. Dechow
Kellogg School of Management

The Federal Reserve used its first-ever news conference to siz-

that has yet to reach many Americans.

"It is very hard to blame the American public for being impatient." Fed Chairman Ben Bernanke said.

The combination of high unemployment, high gas prices and high foreclosure rates is a terrible combination and a lot of people are having a very tough time."

rising gas and food prices, the Fed chairman took his message directly to the public.

He aimed in part to better explain the thinking within a cen-

to react,
et reacts.

THE WALL STREET JOURNAL.

DOW JONES
A NEWS CORPORATION COMPANY

THURSDAY, APRIL 28, 2011 - VOL. CCLVII NO. 98

★★★★ \$2.00

DJIA 12690.96 ▲ 95.59 0.8% NASDAQ 2869.88 ▲ 0.8% NIKKEI 9691.84 ▲ 1.4% STOXX 600 282.12 ▲ 0.3% 10-YRTREAS ▼ 13/32, yield 3.368% OIL \$112.76 ▲ \$0.55 GOLD \$1,516.70 ▲ \$13.70 EURO \$1.4794 YEN 82.04

What's News—

Business & Finance

World-Wide

Berkshire Hathaway said former executive David Sokol violated the company's standards of business ethics and insider-trading policies, and was "misleadingly incomplete" in disclosures about his Lubrizol stock purchases. C1

■ **The Federal Reserve said** it would complete its \$600 billion bond-buying program in June, as planned, and maintain interest rates at an ultra-low level for now. A1

■ **Stocks rose in response**, with the Russell 2000 becoming the first benchmark since the financial crisis to carve out a new record. Gold also hit a new high. The dollar fell. C1

■ **Exelon is expected to disclose** that it has agreed to buy Constellation Energy in a stock-for-stock deal valued at about \$8 billion. B1

■ **Apple is scaling back** how much information iPhones store about where they have been and will stop collecting such data when users ask. A1

■ **States are probing** whether some of America's largest life insurers are failing to ensure that they pay out on policies of deceased customers. A1

■ **BP said it expects to resume** drilling in the Gulf of Mexico by the second half, as the company reported results for the first quarter. B1

■ **Wal-Mart is bringing back** rifles, shotguns and ammunition to hundreds of U.S. stores

■ **Obama plans to shuffle** his national-security team. CIA Director Leon Panetta will succeed Robert Gates as defense secretary, while Afghan war commander David Petraeus will head the spy agency. Ryan Crocker will take over the U.S. diplomatic mission in Kabul and Marine Lt. Gen. John Allen will be named to lead allied forces in Afghanistan. A4

The nominations reflect Obama's belief that conflicts can be better fought with smaller, covert forces.

■ **Storms in the South** killed at least 72 people, including 58 in Alabama. Officials approved plans to blow up a Missouri levee, flooding farms but saving towns, if rivers continue to rise. A3

■ **Ruling-party members in Syria** quit in protest at the government's crackdown, as the military pressed on with its drive to silence dissent. A15

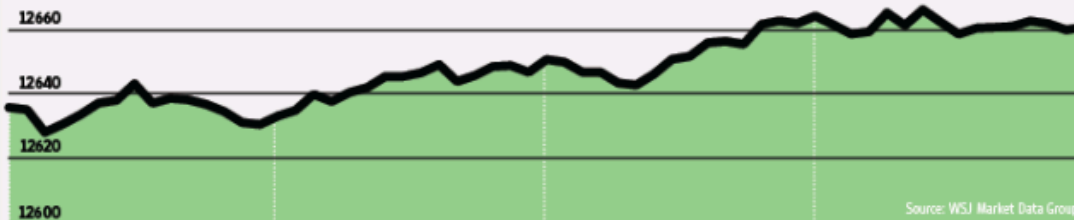
■ **An Afghan air force officer** opened fire on coalition forces, killing nine Americans, in the latest deadly attack by Afghan troops on their allies. A13

■ **Obama released his long-form** birth certificate to prove he is a native-born citizen, in a bid to stop a fringe issue from moving mainstream. A4

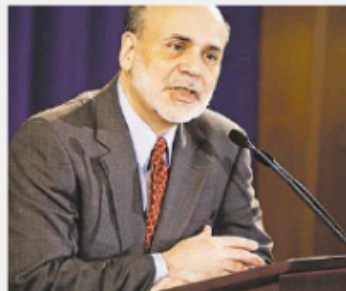
■ **Libya's government** is preparing for a long survival battle, stockpiling food and instructing civilians as young as 11 on the use of weapons. A15

The Chairman Speaks, and the Markets Listen

Dow Jones Industrial Average, minute by minute, during Bernanke's historic news conference



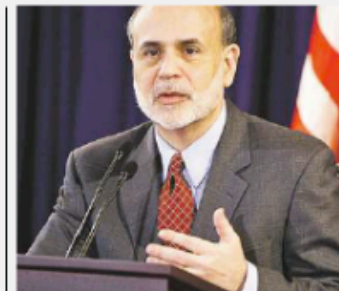
Source: WSJ Market Data Group



... the [Fed's policy-making] committee sees the economic recovery as proceeding at a moderate pace.



Our expectation is that inflation will come down and towards a more normal level.



A lot of people are having a very tough time, so I can certainly understand why people are impatient.

ALL EARS ON BEN: In the first ever news conference by a Fed chairman, Ben Bernanke moved U.S. stock prices.

Fed Takes Foot Off the Gas

BY JON HILSENRATH
AND LUCA DI LEO

The Associated Press
and Wall Street Journal
contributed reporting.

The Federal Reserve used its first-ever news conference to sig-

that has yet to reach many Americans.

"It is very hard to blame the American public for being impatient." Fed Chairman Ben Ber-

The combination of high unemployment, high gas prices and high foreclosure rates is a terrible combination and a lot of people are having a very tough time."

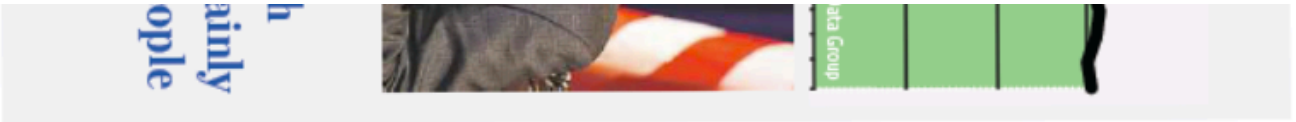
rising gas and food prices, the Fed chairman took his message directly to the public.

He aimed in part to better explain the thinking within a cen-

Bernanke News (2) Abaze USA (center)

¥ \$2.00

¥EN 82.04



Bloomberg News (2) Abaca USA (center)



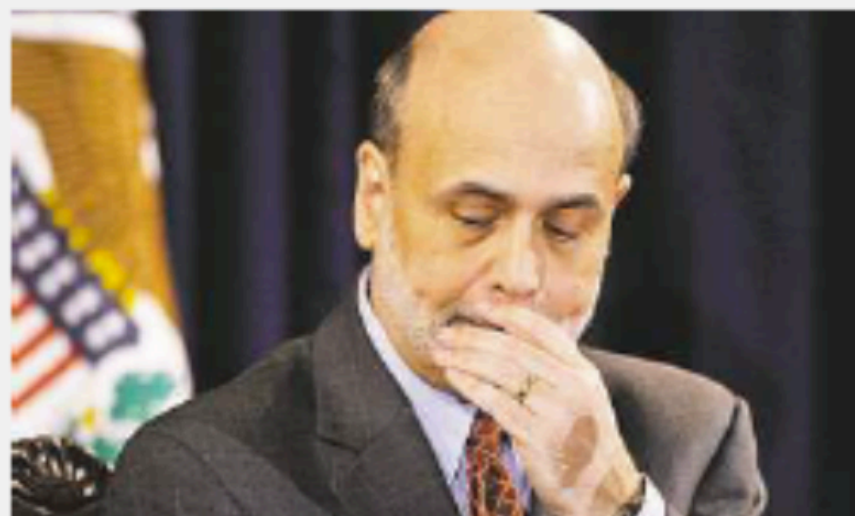
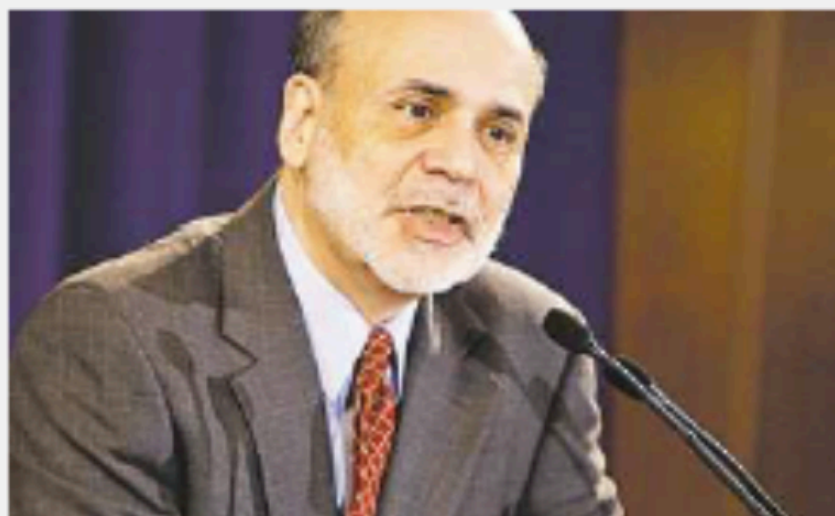
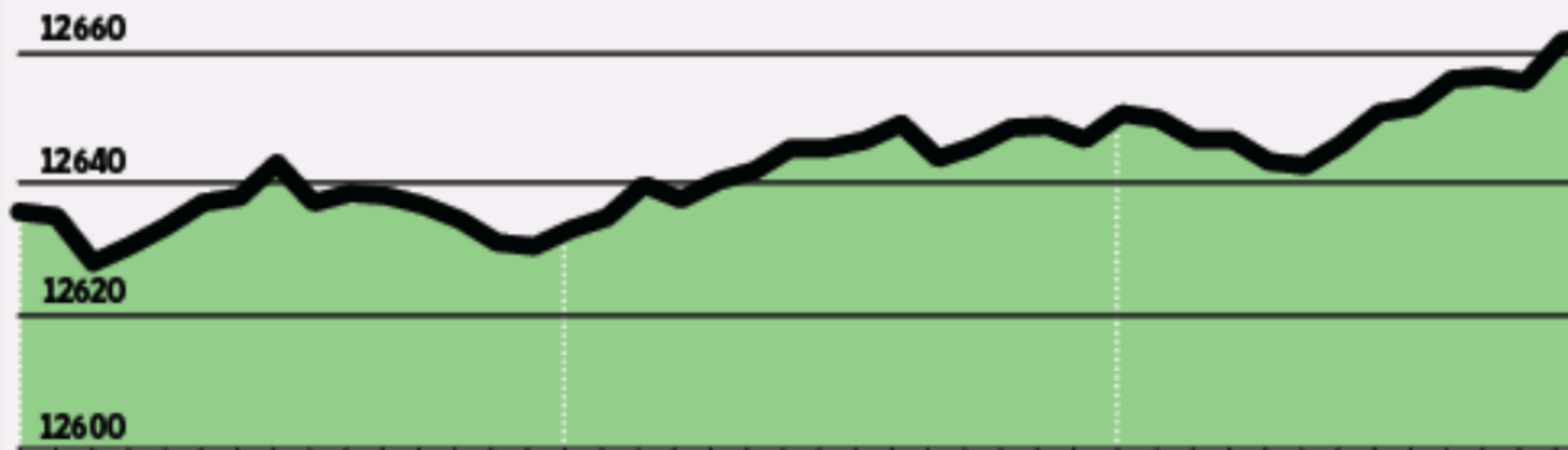
as

prices, the
message

phatav av-

The Chairman Speaks, and the Markets Listen

Dow Jones Industrial Average, minute by minute, during Bernanke's historic news conference



to react,
et reacts.

THE WALL STREET JOURNAL

DOW JONES
A NEWS CORPORATION COMPANY

THURSDAY, APRIL 28, 2011 - VOL. CCLVII NO. 98

★★★★ \$2.00

DJIA 12690.96 ▲ 95.59 0.8% NASDAQ 2869.88 ▲ 0.8% NIKKEI 9691.84 ▲ 1.4% STOXX 600 282.12 ▲ 0.3% 10-YRTREAS ▼ 13/32, yield 3.368% OIL \$112.76 ▲ \$0.55 GOLD \$1,516.70 ▲ \$13.70 EURO \$1.4794 YEN 82.04

What's News—

Business & Finance

World-Wide

Berkshire Hathaway said former executive David Sokol violated the company's standards of business ethics and insider-trading policies, and was "misleadingly incomplete" in disclosures about his Lubrizol stock purchases. **C1**

■ **The Federal Reserve said** it would complete its \$600 billion bond-buying program in June, as planned, and maintain interest rates at an ultra-low level for now. **A1**

■ **Stocks rose in response,** with the Russell 2000 becoming the first benchmark since the financial crisis to carve out a new record. Gold also hit a new high. The dollar fell. **C1**

■ **Exelon is expected to disclose** that it has agreed to buy Constellation Energy in a stock-for-stock deal valued at about \$8 billion. **B1**

■ **Apple is scaling back** how much information iPhones store about where they have been and will stop collecting such data when users ask. **A1**

■ **States are probing** whether some of America's largest life insurers are failing to ensure that they pay out on policies of deceased customers. **A1**

■ **BP said it expects to resume** drilling in the Gulf of Mexico by the second half, as the company reported results for the first quarter. **B1**

■ **Wal-Mart is bringing back** rifles, shotguns and ammunition to hundreds of U.S. stores

■ **Obama plans to shuffle his national-security team.** CIA Director Leon Panetta will succeed Robert Gates as defense secretary, while Afghan war commander David Petraeus will head the spy agency. Ryan Crocker will take over the U.S. diplomatic mission in Kabul and Marine Lt. Gen. John Allen will be named to lead allied forces in Afghanistan. **A4**

The nominations reflect Obama's belief that conflicts can be better fought with smaller, covert forces.

■ **Storms in the South** killed at least 72 people, including 58 in Alabama. Officials approved plans to blow up a Missouri levee, flooding farms but saving towns, if rivers continue to rise. **A3**

■ **Ruling-party members in Syria** quit in protest at the government's crackdown, as the military pressed on with its drive to silence dissent. **A15**

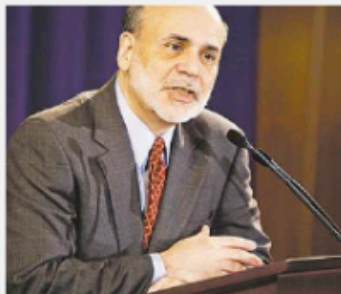
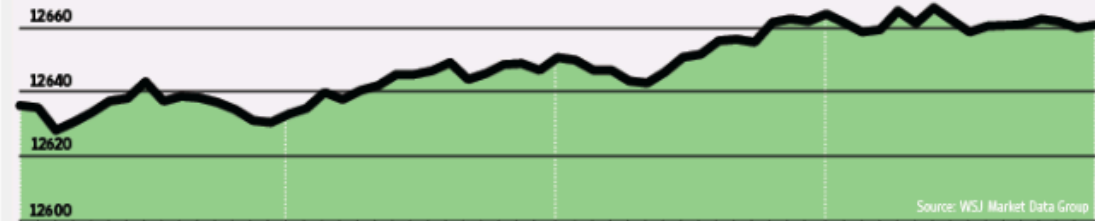
■ **An Afghan air force officer** opened fire on coalition forces, killing nine Americans, in the latest deadly attack by Afghan troops on their allies. **A13**

■ **Obama released his long-form** birth certificate to prove he is a native-born citizen, in a bid to stop a fringe issue from moving mainstream. **A4**

■ **Libya's government** is preparing for a long survival battle, stockpiling food and instructing civilians as young as 11 on the use of weapons. **A15**

The Chairman Speaks, and the Markets Listen

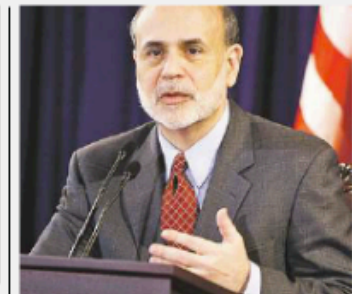
Dow Jones Industrial Average, minute by minute, during Bernanke's historic news conference



... the [Fed's policy-making] committee sees the economic recovery as proceeding at a moderate pace.



Our expectation is that inflation will come down and towards a more normal level.



A lot of people are having a very tough time, so I can certainly understand why people are impatient.

ALL EARS ON BEN: In the first ever news conference by a Fed chairman, Ben Bernanke moved U.S. stock prices.

Fed Takes Foot Off the Gas

BY JON HILSENRATH
AND LUCA DI LEO

The Associated Press
and Wall Street Journal
contributed to this report.

that has yet to reach many Americans.

The Federal Reserve used its first-ever news conference to sig-

"It is very hard to blame the American public for being impatient." Fed Chairman Ben Ber-

The combination of high unemployment, high gas prices and high foreclosure rates is a terrible combination and a lot of people are having a very tough time."

rising gas and food prices, the Fed chairman took his message directly to the public.

He aimed in part to better explain the thinking within a cen-

Bernanke News (2) Abaze USA (center)



THE WALL STREET JOURNAL.

DOW JONES
A NEWS CORPORATION COMPANY

THURSDAY, APRIL 28, 2011 - VOL. CCLVII NO. 98

★★★★ \$2.00

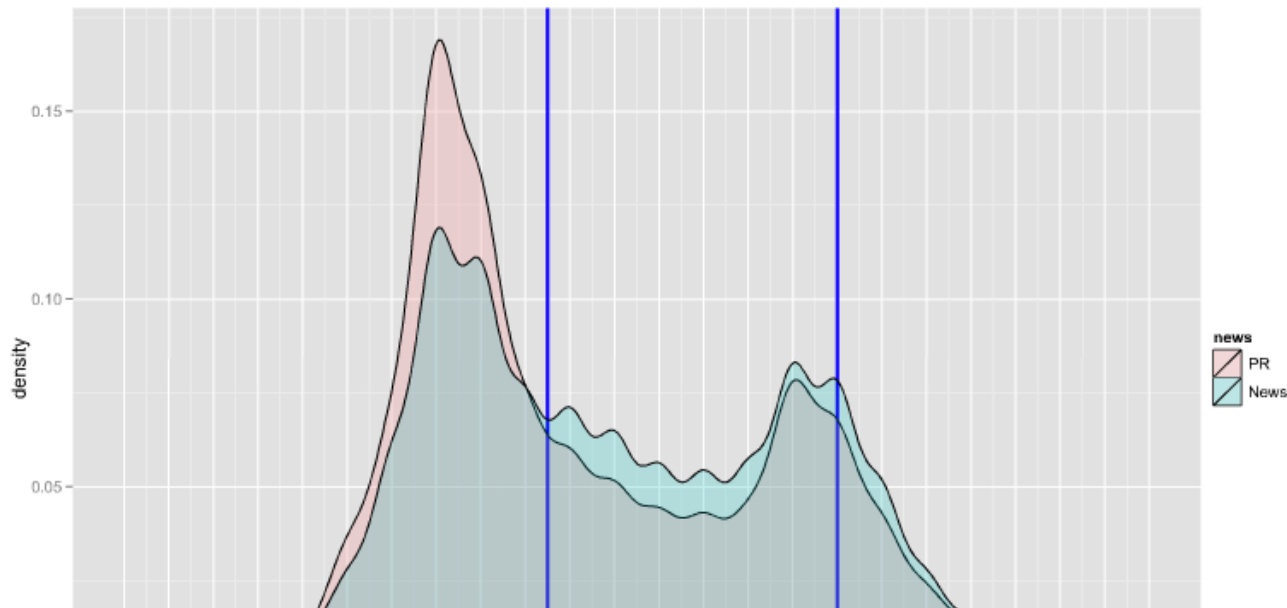
DJIA 12690.96 ▲ 95.59 0.8% NASDAQ 2869.88 ▲ 0.8% NIKKEI 9691.84 ▲ 1.4% STOXX 600 282.12 ▲ 0.3% 10-YRTREAS ▼ 13/32, yield 3.368% OIL \$112.76 ▲ \$0.55 GOLD \$1,516.70 ▲ \$13.70 EURO \$1.4794 YEN 82.04

The Chairman Speaks, and the Markets Listen

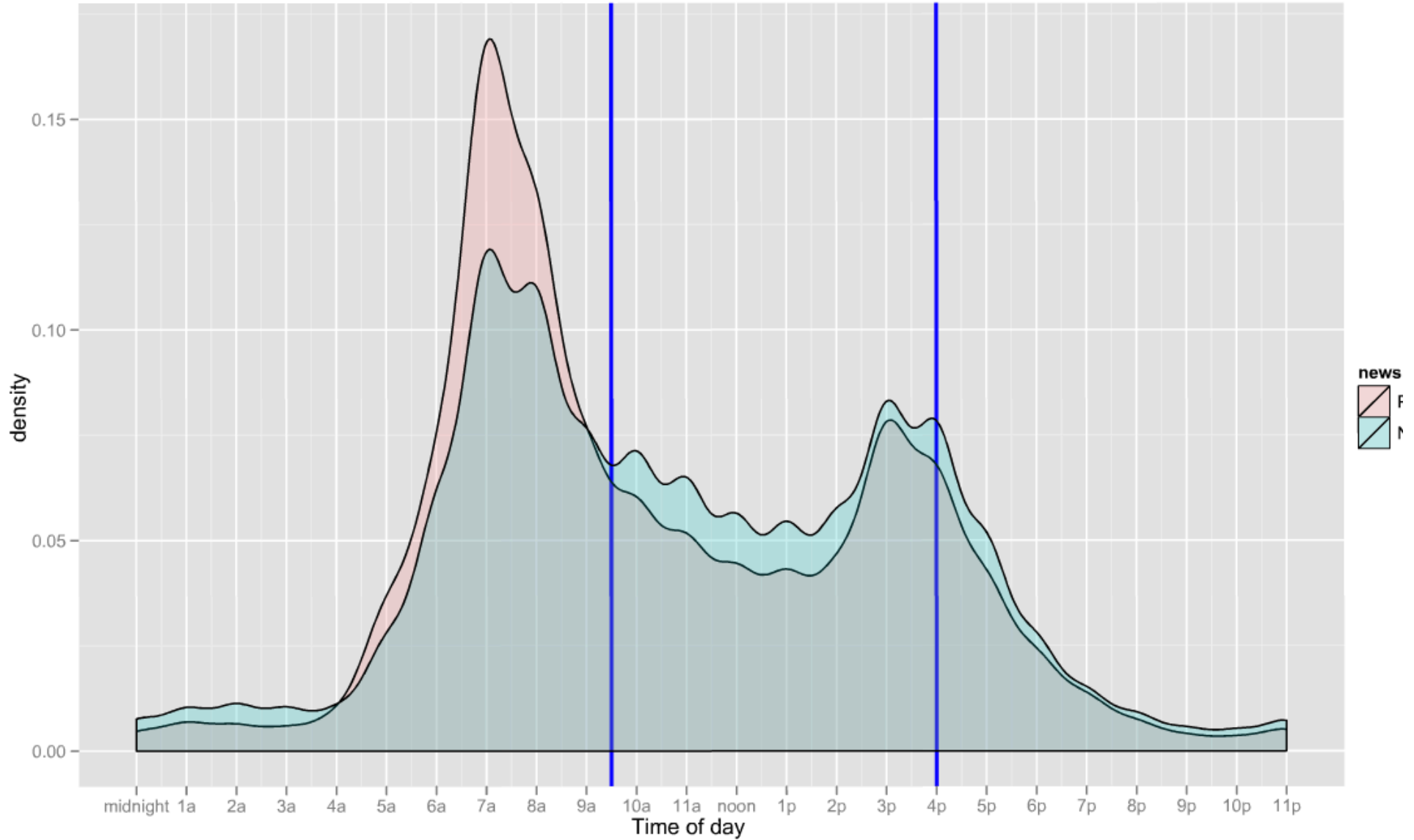




random sample of 1000 publicly traded firms
320,000 articles and press releases from 1994 through 2010



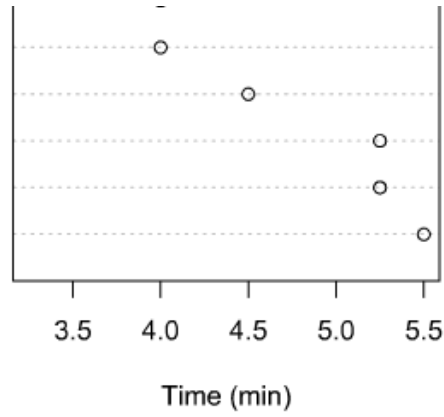
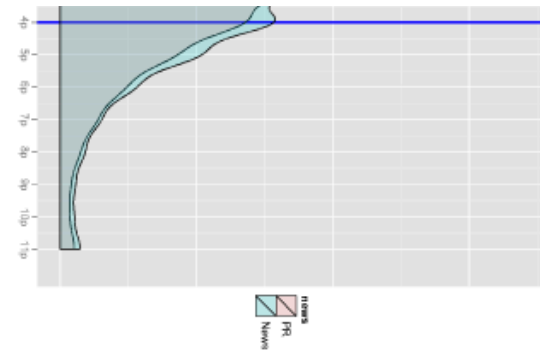
1000 articles and press releases from 1994 through



- 
- [1] Earnings
 - [2] Equity Markets
 - [3] Ownership Changes
 - [4] Acquisitions/Mergers/Takeovers
 - [5] Political/General News
 - [6] Funding/Capital
 - [7] Management Issues
 - [8] Analyst Comment/Recommendation
 - [9] Contracts/Orders
 - [10] New Products/Services
- 



ded firms
rom 1994 through 2010



housing

I expect there to be independent effects of features of the news texts themselves.

I'd like to know how long it takes for the market to react, so I need to have a measure of whether the market reacts.

2 hours of trades after the publication of news
Lee-Ready algorithm to identify trades as
buyer- or seller-initiated
To identify abnormal trading



Well what's normal?

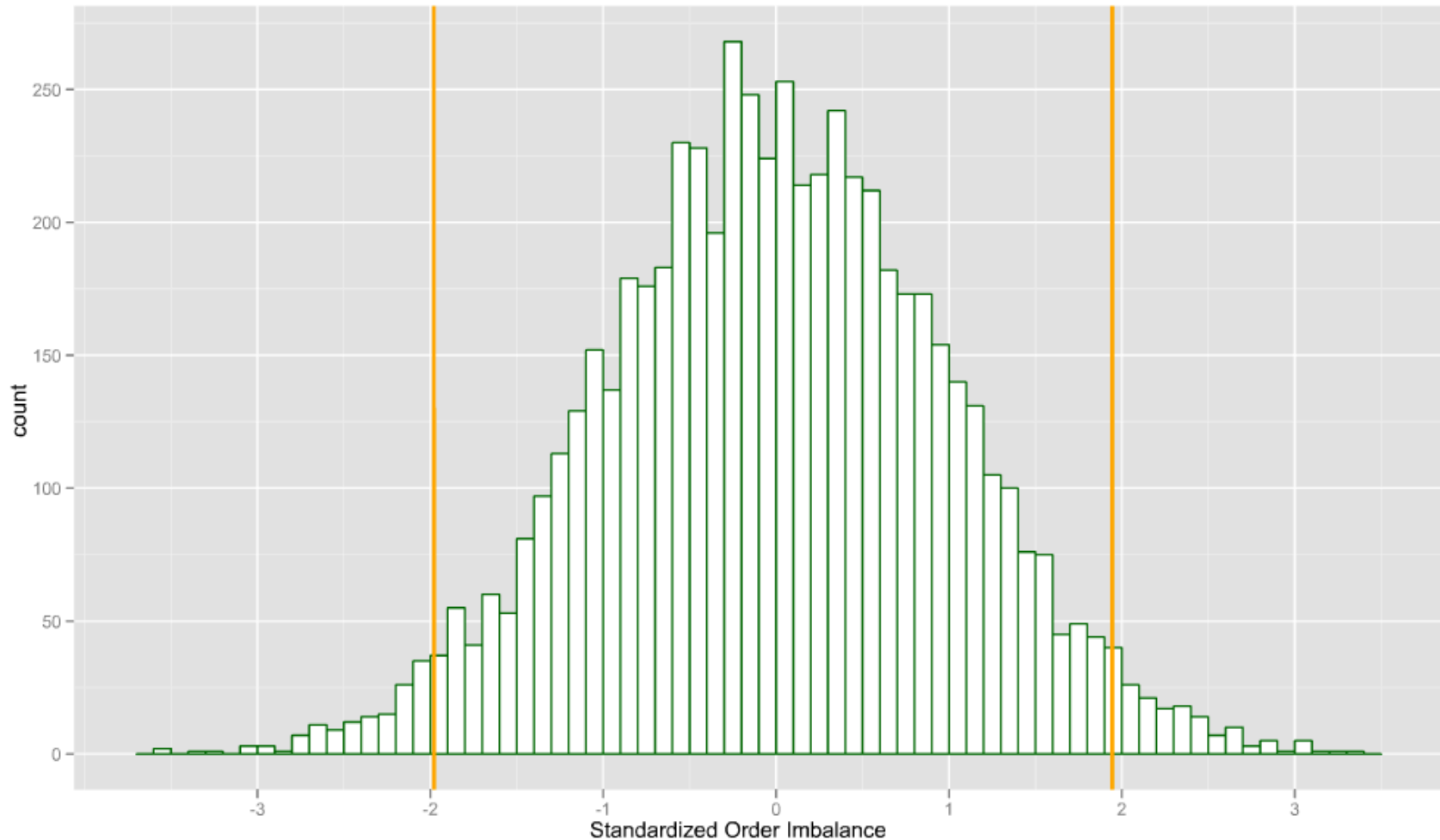
Estim:

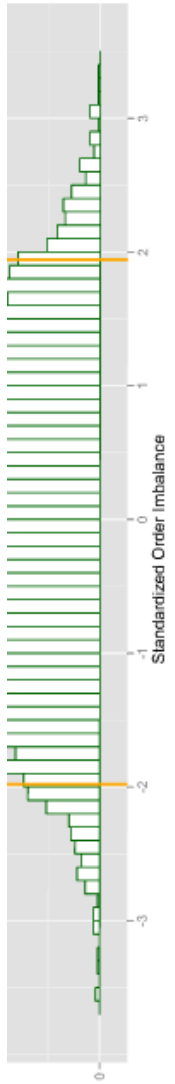


measure of whether the m

2 hours of trades after the publication of news
Lee-Ready algorithm to identify trades as
buyer- or seller-initiated
To identify abnormal trading

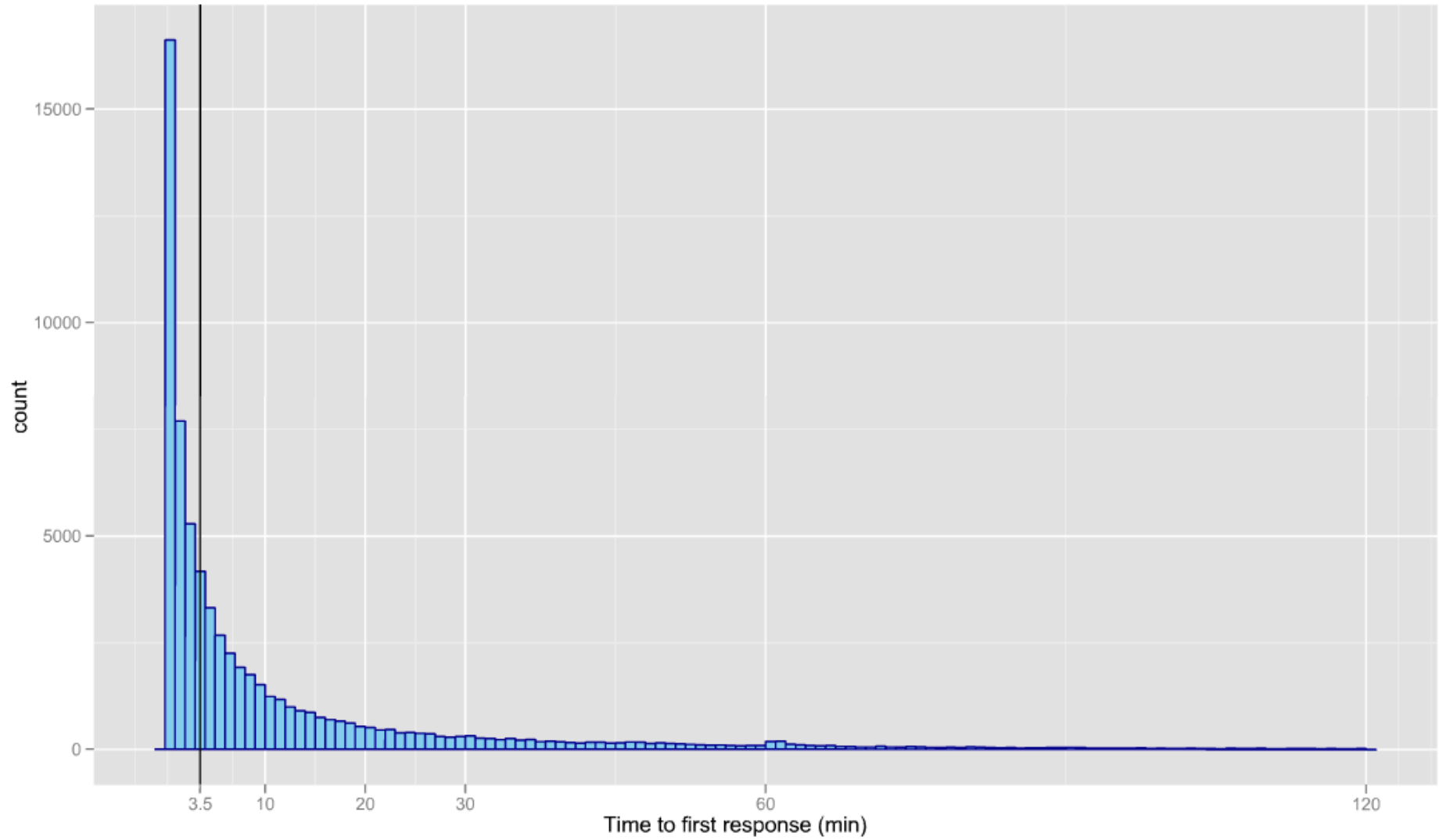
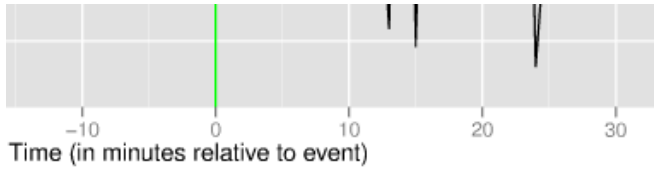
Well what's normal?



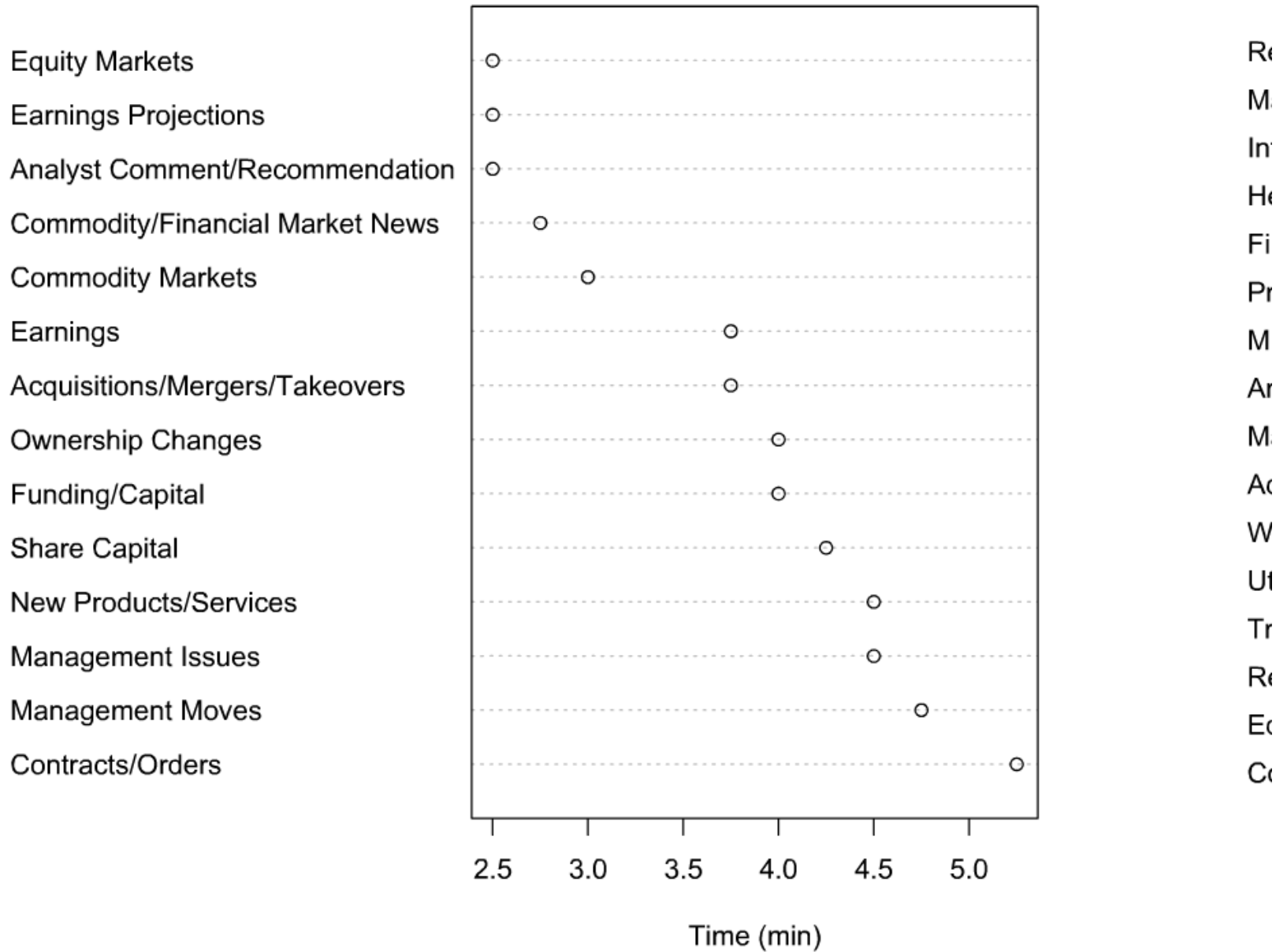


Order Imbalance





Median Response Times by News Subject



bject

Median Response Times by NAICS2



One fe
I exper
of feat



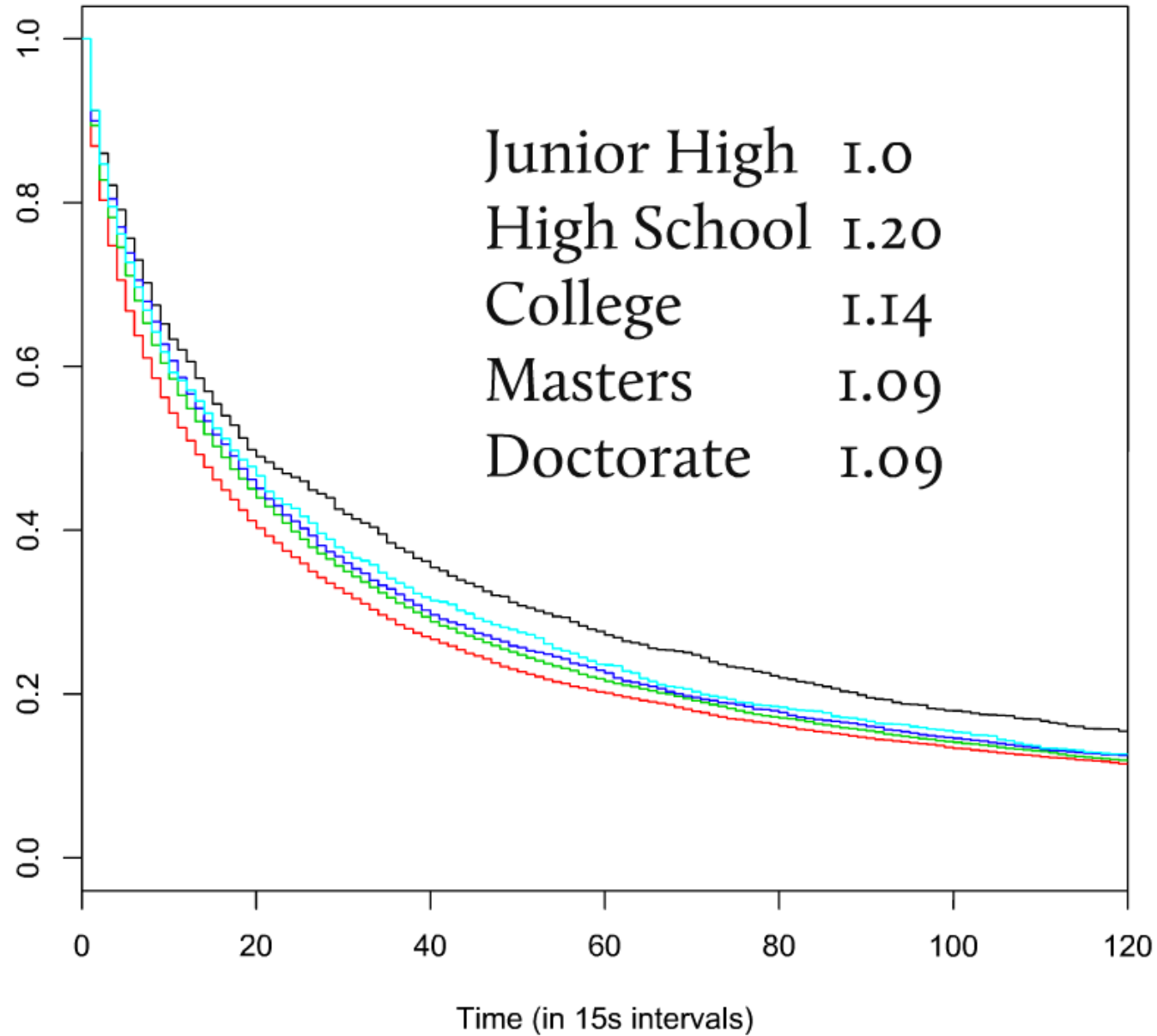
I expect there to be independent effects of features of the news texts themselves.

One feature worth attention is readability

I expect there to be independent effects of features of the news texts themselves. One feature worth attention is readability

Estimated Survival by Flesch Kincaid Grade Level

count



DOW JONES



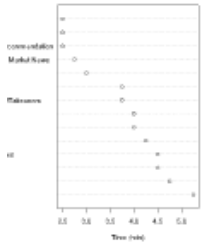
PR Newswire
United Business Media



THOMSON REUTERS

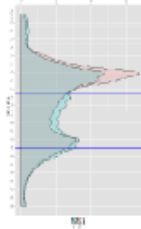
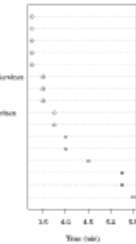
Business Wire
A Berkshire Hathaway Company

Median Response Times by News Subject

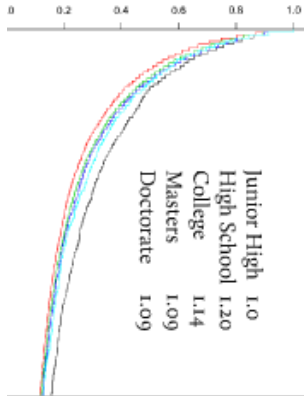


- Retail Trade
- Manufacturing
- Education
- Health Care and Social Assistance
- Finance and Insurance
- Professional, Scientific and Technical Services
- Arts, Entertainment and Recreation
- Management of Companies and Enterprises
- Accommodation and Food Services
- Wholesale Trade
- Utilities
- Transportation and Warehousing
- Real Estate and Leasing
- Educational Services
- Construction

Median Response Times by NASDAQ



random sample of from publicly traded firms
300,000 articles and press releases from 1994 through 2000

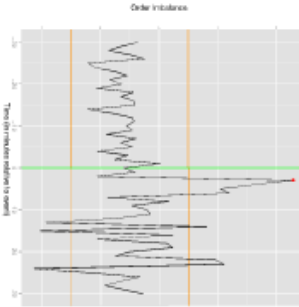
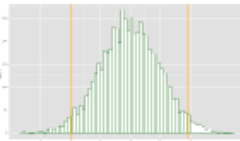


Estimated Survival by
Fresh Kinnard Grade Level

I'd like to know how long it takes for the market to react,
so I need to have a measure of whether the market reacts.

2 hours of trades after the publication of news
Low-Riskly algorithms identify trades in
buy-sell order
To identify downward trading

Well what's normal?



THE WALL STREET JOURNAL

THURSDAY, APRIL 25, 2011 • VOL. CCLVII NO. 98
DOW JONES INDUSTRIAL AVERAGE: 12,363.66 • NASDAQ: 3,269.88 • S&P 500: 1,191.94 • 10-YEAR TREASURY: 3.92% • OIL: \$112.76 • GOLD: \$1,516.70 • EURO: \$1.474 • YEN: 92.00

What's News—

Business & Finance World-Wide

Berkshire Hathaway sold Director executive David Sokol retained the company's standards of business ethics and insider trading policies, and was "moderately incomplete" in disclosures about his (later) stock purchases. **CI**

The Federal Reserve said it would complete its \$200 billion bond buying program in June, as planned, and maintain interest rates at an ultra-low level for now. **AI**

Strikes rose in response, with the Russell 2000 becoming the first benchmark to show the financial crisis to curve out a new record. Gold also hit a new high. The dollar fell. **CI**

Bankers are expected to disclose that it has agreed to buy Citicorp's energy in a stock-for-stock deal valued at about \$8 billion. **AI**

Apple is scaling back how much information it provides about where they have been and will stop collecting such data when users ask. **AI**

Strikes are pushing whether some of America's largest life insurers are failing to ensure that they pay out on policies of deceased customers. **AI**

BP said it expects to resume drilling in the Gulf of Mexico by the second half, as the company reported results for the first quarter. **AI**

Wal-Mart is bringing back rifles, shotguns and ammunition to hundreds of U.S. stores.

O巴马 plans to shut its 215 national security teams. CIA Director Leon Panetta will succeed Robert Gates as defense secretary, while Afghan war commander David Petraeus will head the spy agency. Ryan Crocker will take over the U.S. diplomatic mission in Kabul and Martin Li Gen John Allen will be named to lead allied forces in Afghanistan. **AI**

The nomination reflects Obama's belief that conflict can be better fought with smaller, covert forces.

Strikes in the South killed at least 72 people, including 58 in Alabama. Officials approved plans to blow up a Missouri levee. Flooding, farms but saving towns, if rivers continue to rise. **AI**

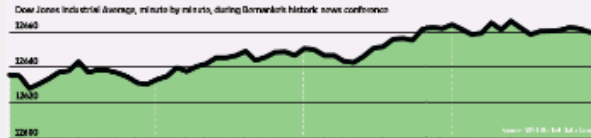
Holding-party members in Syria quit in protest at the government's crackdown, as the military pressed on with its drive to silence dissent. **AI**

An Afghan air force officer opened fire on coalition forces, killing nine Americans. In the latest deadly attack by Afghan troops on their allies. **AI**

O巴马 released his long-term birth certificate to prove he is a native-born citizen, in bid to stop a fringe issue from raising mainstream. **AI**

Libya's government is preparing for a long, unbroken strike by a long, unbroken national, stockpiling food and to diverting chickens as young, as it in the use of weapons. **AI**

The Chairman Speaks, and the Markets Listen



... the [Fed's policy-making] committee sees the economic recovery as proceeding at a moderate pace.

Our expectation is that inflation will come down and towards a more normal level.

A lot of people are having a very tough time, so I can certainly understand why people are impatient.

ALL EARS ON BERN: In the first ever news conference by a Fed chairman, Ben Bernanke moved U.S. stock prices.

Fed Takes Foot Off the Gas

By Jonathan Lippman **Columnist**
The Fed chairman took his message directly to the public. He aimed in part to better articulate the thinking within a central bank that has yet to reach many Americans. "It is very hard to blame the American public for being impatient," Fed Chairman Ben Bernanke said. "The combination of high unemployment, high gas prices and high foreclosure rates is a terrible combination and a lot of people are having a very tough time."

Word cloud containing terms like: growth, financial, think, dollar, first, rate, economic, know, factors, stable, increase, get, rate, labor, gas, one, course, really, but, seen, like, help, term, inflation, growth, financial, think, dollar, first, rate, economic, know, factors, stable, increase, get, rate, labor, gas, one, course, really, but, seen, like, help, term.