## Studies in Applied Economics

## UNOFFICIAL LONDON STOCK TRADING DURING THE STOCK EXCHANGE SUSPENSION OF 1914

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Johns Hopkins Institute for Applied Economics, Global Health, and Study of Business Enterprise



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The *Studies in Applied Economics* series is under the general direction of Professor Steve H. Hanke, Co-Director of the Institute for Applied Economics, Global Health and Study of Business Enterprise (hanke@jhu.edu).

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#### **About the Author**

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#### Summary

The following study analyzes unofficial trading of stocks during the London Stock Exchange suspension of trading in 1914 at the start of World War I. Extensive data obtained from the London *Financial Times* uncovers stock prices from the unofficial market during the period from August 15, 1914 to January 4, 1915. This study intends to illustrate the relationship between global financial markets and the outbreak of one of the most devastating wars in history. The analysis shows how a recovery of prices in the unofficial market corresponded with worldwide events during the closure of the exchange. An accompanying spreadsheet workbook lists daily prices in the unofficial market.

## **Acknowledgements**

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JEL codes: G01, N24

#### Introduction

The early months of 1914 were a high-water mark in global financial markets. Innovation in technology and financial instruments stimulated tremendous growth and openness in global markets. Capital flowed freely from country to country, and markets throughout the world experienced connectivity and cohesiveness that allowed for great advancement. All of the major global economies except China were on the gold standard, and forex arbitrage opportunities were capitalized by buying and selling international bonds listed on one's domestic exchange. This advancement united global economies, and more specifically, made European exchanges one integrated market. Markets in the first half of 1914 were strong, and the fact that a global financial crisis would soon occur was not apparent.

The Great War was put into motion on June 28. Amid escalating tensions in the Balkans, a young Serbian nationalist named Gavrilo Princip assassinated Archduke Franz Ferdinand, the heir to the throne of the Austro-Hungarian Empire. The assassination was the tipping point in what was already an extremely fragile situation in the Balkans. Austria-Hungary received full support from Germany on July 6, and on July 23 issued an ultimatum to Serbia, essentially instructing it to suppress anti-Austrian propaganda and extricate terrorist organizations, or face military action. Although Serbia cooperated with many aspects of the ultimatum, Austria-Hungary deemed the response inadequate, and declared war on Serbia on July 28. Four days later on August 1, Germany declared war on Russia after news broke that Russia, which saw itself as a defender of the Balkan Slavs, was mobilizing its army against Austria-Hungary. Shortly thereafter, Germany's invasion of Belgium, in violation of a longstanding treaty obligation to respect Belgium's neutrality, brought Great Britain into the war (Keegan 1998, 37).

The outbreak of world war stimulated the most severe systematic financial crisis in London's history. A recent study of the financial crisis of 1914 has claimed that it was unlike any other crisis in history. The typical activities that lead to a crisis—asset bubbles, credit expansion, euphoria, and speculative mania—did not occur (Roberts 2013, 15). Markets were calm in London in the early summer of 1914, and they were relatively steady even after the assassination of Archduke Franz Ferdinand. The real displacement moment for markets occurred on July 23 when Austria issued a final ultimatum to Serbia. The ultimatum, and in turn the realization of the likely impending eruption of world war, supplanted greed with fear in investors, and began the chain of events that led to stock market closures all over the world.

The displacement moment on July 23 brought British investors to the realization that a financial crisis was imminent (Durden 2014). They flocked to the stock exchange and the Bank of England in order to sell their assets for cash and gold. There was fear around the City of London that a massive selling would occur, spurring a sharp fall in prices and the failure of many firms. Furthermore, as more and more citizens realized their need for liquid assets, a run on the banks was forthcoming. Over the next week, from July 24 to August 1, every one of London's key financial markets collapsed, including the foreign exchanges, the discount market, and the stock market (Roberts 2013, 13).

The primary reason the London Stock Exchange was closed was because of the impact a massive sell-off of assets would have had on brokers and jobbers. Brokers acted as agents for non-member buyers and sellers, and jobbers quoted buying and selling prices for securities, providing liquidity. On a daily basis, brokers and jobbers conducted business, and hundreds of transactions were made. However, the individual transactions were not actually completed until settlement day, when buy and sell orders were matched and crossed. If a broker had a deficit or surplus on his account, he would settle the outstanding trades with cash. However, massive swings in security prices would unsettle many brokers' accounts, and force them into bankruptcy. Stock exchange officials realized that a massive sell-off of assets would force the majority of brokers into bankruptcy, and further worsen the financial panic.

Due to the openness of global financial markets, every major market throughout the world was in danger of collapsing. On July 27, the Paris "Coulisse" market, Brussels, and Oslo exchanges all closed. The next day saw the closure of the Lisbon, Oporto, and Madrid markets. Shortly thereafter Amsterdam, Antwerp, Berlin, Milan, Rome, and St. Petersburg all closed their exchanges. London and New York were the last two exchanges open come July 30. But, due to the financial strains placed on the system and the disastrous effects a firehouse sale of assets would have had, the NYSE and the London Stock Exchange both decided to close their doors. Officials came to a conclusion that there was no avoiding a massive sell-off if the exchanges remained open, and the communal sale of assets would collapse the entire system. On Friday, July 31, the London Stock Exchange officially closed its doors. The doors could not be reopened until an effective way to settle all outstanding transactions was constructed.

Despite the closure of the exchange on July 31, an unofficial stock exchange arose on Throgmorton Street in London, just steps away from the Stock Exchange building and the Bank of England. Investors still had to hold their prior assets until a settlement day was agreed upon, but securities could now be traded on the unofficial market. The unofficial market gave the Stock Exchange Committee some time to determine the best way to proceed with the crisis. The first trading on the unofficial exchange was recorded on August 15. Trading resumed on this exchange until the House (the official stock exchange) reopened its doors on January 4, 1915.

This study analyzes the price movements of various securities through the duration of the unofficial stock exchange in London. More specifically, the study brings to light the relationship between the price recoveries of securities and the events of World War I. The prices obtained in the study are recorded from daily issues of the London *Financial Times*. Beginning on August 15, nominal prices of major securities were printed on the front page of the *Financial Times*. Furthermore on the 15th, an "Approximate Guide to Private Negotiations" was released. The guide is shown in Figure 1. On September 23, the first full table of security prices was printed. Prices were printed in this fashion until the reopening of the exchange on January 4.

The *Financial Times* is the only known credible source that printed prices from the unofficial market. (It should be mentioned that in that era, the *Financial Times* was a well reputed

newspaper in the City of London, but far from the international powerhouse it is today.) The London *Daily Mail* ran its own exchange for the convenience of readers, but my examination of the prices recorded indicates that they were not related at all to global

financial markets. All the prices and calculations recorded in this study can be seen in the accompanying spreadsheet workbook.

## The Unofficial Market on Throgmorton Street

The opening of the unofficial stock exchange was critical for the survival of London's financial economy. The continued trading of securities on Throgmorton Street facilitated the market evaluation of firms, domestic and international trade, and most important, held steady the fragile confidence of investors. Although the House was closed, brokers, jobbers, and investors gathered every day on Throgmorton Street to privately exchange securities. Figure 3 presents a picture from the *Financial Times* that depicts a typical scene from the unofficial market on Throgmorton Street, located right in front of the House. The first official recording of security prices was published on August 15. The release can be seen below along with the "Approximate Guide to Private Negotiations."

Figure 1. Approximate Guide to Private Negotiations (Financial Times, August 15, 1914)

# STOCK EXCHANGE PRICES.

## APPROXIMATE GUIDE TO PRIVATE NEGOTIATIONS.

For purposes of reference and for the general convenience of our readers we publish below a selection of the leading securities dealt in on the Stock Exchange, together with the closing prices of Thursday, 30th July which was the day before the House closed, also the last "Making up" prices. The quotations are mainly nominal, but they should prove useful, both as an assistance to the memory and as an approximate guide to private negotiations. These tables should now be cut out for reference, as we shall henceforward cease to publish them.

Figure 2: First listing of nominal prices

(Financial Times, August 15, 1914)

Consols	694
Local Loans	68
London County Council 3 per Cent.	79
Metropolitan Cons. 3 per Cent,	86
Bank of England	245
Port of London 32 per Cent	86
Canada 4 per Cent. (1940-66)	944
New South Wales 4 per Cent.	
(1942-62)	95
New Zealand 4 per Cent. (1929)	97
Ontario 44 per Cent	965
Queensland 4 per Cent. (1940-50)	96
Quebec 42 per Cent. South Africa 10-Year Bonds	98
South Africa 10 Vear Bonds	94
West Australia 4 per Cent. (1942-62)	954
West Muserame + pri dente (and and and	002
Canadian Pacific	160
Grand Trunk Ordinary	113
Missouri	23
Missouri	116
Union Pacific	511
U.S. Steels	512
Marconi	17
Marconi	
Rubber Trusts	5/6
Chartered	12/3
Consolidated Gold Fields	1+3
Consolidated Gold Tierra	54
Rand Mines	175
Van Ryn Deep	11.2

Only the securities listed in Figure 2 were traded on the unofficial exchange from August 15 to September 23. The reader will observe that the first and largest group is a collection of British Empire government bonds (sometimes called "government stock") plus the common equity of the quasi-official Bank of England. At the time, the London Stock Exchange traded bonds as well as equities. The remaining groups are equities: the second is leading North American stocks; the third is British industrial stocks, and the last is South African gold stocks. On September 23, many more prices were listed, and trading volumes increased on Throgmorton Street. Securities of particular importance for Great Britain included those listed in the Financial Times under the categories "British Funds" and "Home Rails." All of these security prices throughout the crisis are recorded in the spreadsheet workbook that accompanies this study.

The unofficial market played a critical role in the containment of financial panic and the revival of the London Stock Exchange. The continuation of trading allowed certain failing firms to be restructured and recapitalized. The lack of an unofficial market could have resulted in the collapse of the entire system. The absence of an unofficial market would have resulted in zero price signals to indicate firms of necessary restructuring. The market was imperative for firms to keep in order.

Figure 3: Throgmorton Street (Financial Times, October 3, 1914, 3)



## **Methodology of This Study**

The London financial crisis of 1914 has been referred to as the "unknown financial crisis." The crisis was not preceded by many of the typical factors that stimulate a panic and crisis. Furthermore, the crisis did not proceed as a typical crisis would. Not much had been written concerning the crisis until Richard Roberts's (2013) book *Saving the City: The Great Financial Crisis of 1914.* In his book, Roberts analyzes the factors leading to the crisis, and explains how the crisis was ultimately contained and resolved. Roberts focuses on the crisis itself rather than the unofficial stock exchange. In speaking with Roberts as part of my research for this paper, he informed me that the only known source for analyzing prices from the unofficial exchange was the *Financial Times*. Therefore, this is the source I used for all of my primary data.

I examined each daily issue of the *Financial Times* from July 1 to January 30, barring Sundays, when the *Financial Times* was not published. To fully understand the price movements and recovery of securities during the crisis, it is critical to see how prices moved both before and after the crisis. Each issue of the *Financial Times* shows stock prices on the front page along with a brief overview of the stock exchange from that day. Figure 4 depicts an example of a typical section of the front page presenting prices and a market overview.

The securities I primarily analyzed were British Funds and Home Rails. The British Funds I analyzed were the most important British equities from 1914. Some of the principal equities were Consols (British Government bonds), Bank of England Stock, and Transvaal 3 percents (sensitive to gold prices). Home Rails were also critical equities in 1914. Rail securities were some of the highest-volume traded securities during this era. My study contains a day-by-day price analysis of all British Funds and Home Rails. Furthermore, I recorded a daily market commentary from each day of the crisis. The market commentary helps illustrate why prices moved the way they did. The market commentary was retrieved primarily from the stock exchange report on the first day, but also from other sections of the Financial Times. Major events occurring in foreign markets and in the war are shown in Table 1 and the appendix table of market color to accurately illustrate why prices fluctuated.

My study intends to accurately depict how and why prices moved and ultimately recovered during the crisis. Studies have been done to show why the crisis occurred and how the stock exchange was ultimately reopened. However, my study is distinctive in that it traces the movement of stock prices when the official stock market was closed. Unfortunately, the *Financial Times* did not provide information about the estimated volume of trading on the market during the war compared to prewar volume trading. However, the gathered data from the *FT* will still give an accurate depiction of trading on the unofficial market during the war.

## Figure 4: Financial Times Stock Exchange Section

(Financial Times, September 23, 1914)

STOCK E	XCHANGE.		_	Pre- Price on Price 30 J'ty
			FOREIGN AND COLONIAL R	
DEALINGS RESTRICTED, BU	T OIL SHARES SUPP	ORTED.	FOREIGN AND COLONIAL R Antidiguate Peri, Oct	### ### #### #########################
	on properties		Buenos Ayres Great Southern Ord.	9936 102
THE QUESTION	OF REOPENING.		Central Argentino Ord.	89% v2 37 39
For the moment no fresh developments	. In the following list of nomi	nal prices	Grand Trunk of Canada Ord. Do. do. 1st Pref	41 43 1114 1134
of a tangible character are taking place	In the following list of nomi quotations are adjusted to obtainable:—	the latest	Do. do. 2nd do Do. do. 3rd do Do. do. 4 pc Guaranteed	24 21
in the direction of the reopening of the Stock Exchange. The matter has passed	_	Pro- Price on SOJ'ly	Guayaquil and Quite 5 pe bonds	48 47%
out of the hands of the Special Commit- tee appointed by the House. That Com-	BRITISH FUNDS.	Price  30J'IX	Do. 1st Pref.	100 10155
mittee embodied its recommendations in	Consols Local Loans	6815 60 81 81 81 6815 71,5 10 87 17,5 10 87 18 87 18 8	San Paulo Unites Railways of the Havana Ord.  Lines Railways of the Havana Ord.  45 po Debs.	205 216 5
a report some days ago, which, after being considered by the Committee for	Census  Frien Land CN, pe, mult 3 per Cent  London County Sy, pe  Metropolitan Count, 9 per Cent  Metropolitan Count, 9 per Cent  Bank of Rog and  Port in Landon 3/9 per Cent  Don 3/2 per  Transvand 3/9 per  Transvand 3/9 per	6812 60 81 81 71 71 72 71 86 87 86 87 78 80 245 2471 728 87 728 87 88 87 88 87 88 87 91 82 91 82	INDUSTRIALS.	87   91
	Metropolitan Cons. 5 per Cent. Metropolitan Water Board B	78x 80	Alog Carbi le.  Borni le.  B	1A: 29; 2 7 6 7; 1 135 1 135 1 135 1 135 1 137 1 157 1 136 1 158 2 2 3 4 5 4 5 4 5 2 5 5 4 5 2 5 5 5 5 5 5 5 5
Government. It remains for the Govern- ment, in consultation with the leading banking interests, to deliberate further	Port of Lamon 3) <sub>2</sub> per Cent. India 3 pe	841/A 87	Ash (C.) Pref. Belgravia Dairy	1.4 29/ 2 7 7 6 7 7 6 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1
banking interests, to deliberate further	Transvari 3 po	91 92	Borax Cons. Def. Bovril Ord. British Automatic	13 188
and to arrive at a comprehensive and authoritative plan. That action is not being hurried we believe to be because in the most responsible circles it is felt	Canada 4 per Cent. Registered	1 2411 27	Bricish American Tobacco Pref	32/ 188 1 1/ 15/ 13/ 15/ 16/6 1/h 3/2 4/5 92/2 96/2 20/ 1/6 21/2 22/2
in the most responsible circles it is felt	Do. 5 per Cent. Inscribed	85% 83 79 80	Bryant and May Ord.	20: 146
	Natal - j2 per Cent, Inscribed	86 ta 87 79ta 80	Curtis's and Harvey Ord.	18/ 18 5
hurried action is necessary or advisable. With every day that passes progress is	Do. 3's per Cent. do.	921a x 95	Fast India Sugar Pref. Purness withy	23.5 25 6 771 80%
being made with the liquidation of the Account, the imposition of a q per cent, interest charge in itself coercing people	Do, of per Cent, do.  Do, o per Cent, do.  New Zenland a per Cent, Hoscibesi	54 1 97 56 1 97 56 1 98 1 99 56 1 99 5	Francis of this Francis of thi	23.5 25.6 25.6 2773 24 25.3 24 26.4 26
	Do. 4 per cent. do	8-14 18	Lever Brothers "C" Pref.	5 57
purchased to do so. Again, the existence of a moratorium is an important	Queensland 4 per Cent. Inscribed	14 15	Maypole Duiry Def.	250 250
obstacle to the resumption of Stock Exchange business, and in this connec-	Do. St. per Cent. do.	57 58 75 19	Read Brothers Ord.	255 250 250 33 37 2 155 156 154 155 156
Exchange business, and in this connec- tion it is regarded as probable that the	South Australia 4 per Cent. Registered	2914 90 2914 90	Schweppes Pref. Tarry (E. W.) Ord.	11 11 11
present moratorium, which is due to end	Tasmania 5/9 p. r Cent. Incentest	80% 90 9.% 90%	Van den Berghs	21. 21.
on the October, will be extended, possibly in a modified form. Admittedly the de- velopment that will do most towards	Do. 312 Pr Cent. do.	88 29 29 29 29 29 29 29 29 29 29 29 29 29	Waste Heat and Gas Waterlow Det	231, 26
velopment that will do most towards paving the way for a reopening of the	Western Australia 4 per Cent. Inscribed The do. Sig per Cent. do.	2011 80 8411 97 9114 92 8514 83 8514 89	Read Bowhere Ord. Schwerpas Peri. 1. Echael Peri. 1. East Peri. 1. Waster Start and Ga. Waster Start and Ga. Wester Start and Ga. Wester Start Peri. 1. William Peri. 1.	25 25 13 13 13 13 13 13 13 13 13 13 13 13 13
House would be news of a decisive success	Do. do. 312 per Cent. do Do. do. 3 per Cent. do	8554 83 8554 89	Wel-bach Opd. White (R.) and Sons Pref	6 7 7 8 1 8 1 1 8 1 1 8 1 1 8 1 1 8 1 1 8 1 1 8 1 1 8 1 1 8 1
for the Allied Armies, and on this score the City is waiting in a spirit of hopeful	Queensland - per Cent. Attenta Province 4/2 per cent. Registered	90 100 90 90	Winterway Laidiaw Prof.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
anticipation.	Montreal City 4 per Cent. Registered	100 101	Barker (John) Pref.	STORES.
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gress of the great battle now going on	Social City 5 per cent	93 y 97 93 y 97 93 y 97	Harrosts (B.A.) Ord.	13
on the Aisne, although favourable on the whole, was not of a sufficiently de-	Vancouver and D.st. Dramage 4% per Cent. Winnipeg City 41; per Cent. Registered	25 x 35	Maple Ord	13 43 55 45 40 40 40 12 6 15 12 6 20 1
	New South Wales 4 per Cent	100 101	Settratge Pret.	402 5/6 400 4.00 12.6 15/ 12.6 20.1 15.6 20.1 23. 25/ 5. 5.6 23/ 21/ 18.6 20.0
revival of public interest in securities, and while members again assembled in	Southern Sigera - per Cent. Saskatch was Province - per Cent. Union of South Afraca - per Cent. Cat. div.	100 101 101 102 93 94	Spiers and Pond Ord. Do. Prof. Wallis (T.) Ord.	23 2/5 5 56
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of business to occupy their attention. Extensive inquiries among dealers in the	Calgary tity 5 per Cent. Dune in City 2/2 per Cent. Manual City 2/2 per Cent.	100 101	Angle-American Ord	106 105
various markets elicited a fairly general	Newtonia that City 5 per Cent. Newtonia that the per Cent.	100 101 0 91 58 89 86 83	Direct United States	2236 2234 65 163
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is little question that brokers will again	Do. 5 per Fait ting. Do. 4 per Reseasion.	61: 64:5 64: 95:2 61: 64:5 60: 61:2	Mexican Light and Power ot. James' Pail Mall Electric (£5 shares)	15% 16 37% 41% 5 5%
receive plenty of inquiries from their clients and dealings will again become.	Do. 4 pt 1911 Do. 5 pt 1915	100	BANKS.	35. 4
clients and dealings will again become, at all events, as free as was the case a week or ten days ago, when the German	Do. 5 pc 1215 San Pauto) Bulgarian 6 pc 122	7.12 705a 97 72 90 94 95 99 775a 80 87 9056	Capital and Counties Imperial O. toman	25 30% 125 11 235 26
week or ten days ago, when the German advance on Paris was effectually checked.	Chilian 4/2 to 1826 Do. 5 po 1876	87 9035 9035 90 1035 9436	St. James Pail Mail Blectric & Barws) BANKS. Agricultural of Egypt Gapital and Countries. Imported to toman Licords. Lic	235, 26 25 27M 1332 142 85 51 195 204 24 385 125 13 103 12
OIL SHARES IN DEMAND.	Chinese 5 pc 1:95	95 95	London City and Midland London County and Westminster National Provincial (£12 p.t.)	854 2054 195 2054 1255 1.5 1051 12 37 4054 27 3152
Consols remained about 683, and the few dealings which took place in Colo- nial Government and Corporation stocks	Chinese 5 pc 1/29.  Do. 4 v, pc Gold 1998.  Do. 5 pc Rey, Lu. (Shangnai Nanking).  Do. 5 pc Reyg, Gold Loan 1/24 Scrip.  Celembian 1898.  Cuten Loan 5 pc	81% 85 81% 85 81% 25	National of Egypt National of South Africa	125 13
nial Government and Corporation stocks were again effected at the quotations	Luban Loan 5 pe Do. 4/2 pc Envirtum United 4 pc	94 94 94 94 94 94 94 94 94 94 94	Union and Smiths BREWERIES.	27   315
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benefit to the gilt-edged market. Busi-	Guatemaia 4 pc	46 46 15 6 7	Guinness Ord Do. Pref	9.9 15 101½ 115½ 330 300 134½ 142½ 32 2
theless, in these times it is satisfactory	Jajan 4 pc 1555 155, 4 pc 15-5 Do, 4 pc 15-10	75'- 80 71'- 71'-	St. Louis Brewery Ord. South African Breweries Ord. Do. Pref.	18/ 18/9
celled, and that the leading dealers'	Do. 4', pc 1905 (lst Series)	73': 80 67': 71'5 81 59 81 87 91'5 97 93'5 93 81'5 85	Threlfail's Brewery Pref. Watney Combe Debs.	156 1276 18/ 1279 20 6 1 6 70 72 35 3934
daily upwards of £10,000. Yesterday	De. 4: per Serip	935 93 811 85		
dian, Indian and kindred securities, and	Peruvian Corporation Preference	791, 83	Aerated Bread Presterick Hotels Pref.	376 416 576 576
dealers are confident that as soon as the Germans are forced back on their own	Do. Debentures  Peruvian Govt, 5% Le (Sat) Lean of 1905	29% 92% 8.6 91%	Holbern and Frascati Ord	376 486 556 576 325 336 306 156
nial Government and Corporation stocks were again effected at the quotations previously ruling. The fixing of minimal proviously ruling the fixing of minimal proviously ruling the fixed provided the provided provided the provided provide	Carlotte Land 19 pe  Figure 1 to 1 t	76% 79	Accept Record Freedrick Match Perf Gerton Hotels Ord. Hollow and Francati Ord. Hotel York Perf Lyons Ord. Savoy Hotel Ord. Do. Pref.	374 454 524 574 24 574 30 6 10 30 7 10
the Committee. Home Rails maintained a firm appear-	Do. 412 pc Rails (Armavir-Touapse)	9036 93 87 92	IRON, STEEL AND ENGINE	852 933
Home Rails maintained a firm appears ance and for Grout Northern Deferred, Chatham Ordinary and Dover "A." American Rails were idle and South Among Industrials there was nothing of interest, but Oil shares continued to at-	Pentral Composition Perference  10. Distance of the Composition of the	36, 412 3919 8.19 9119 19 05 765, 79 87 90 903, 95 903, 95 77 92 77 95 903, 903, 903 903, 90	Armstrongs Babcock and Wilcox Browingham Small Arms Bolckow Vaughants Brown (John) and Co.	28 6   39 6
Chatham Ordinary and Dover "A."	Caledonian Ord	61 . 61	Birmingham Small Arms Bolckow Yaughams	50/ 42 1 21 9 25/ 25.6 7 3 7.6
American Rails were quiet, but firm.	Caledonian Ord. HOME RAILS.  Do. Def. Great Central Pref. Do. Def.	195 205		
interest, but Oil shares continued to at-	Great Northern Def.	44 415 83 83	Kynoch Ord. Do. 5 pc Debs.	11 7's 6
tendency of prices was again favourable.	Great Western	10516 :0636 5012 51	Pease and Partners South Durham Steel	1116 1217 6 23/6 24 6
and the Preference were wanted at 10.	London Brighton and South Coast Def	61 61 105 114 1195 2034 1954 415 1955 1955 1955 1955 1955 1955	Cory (Wm.) and Son (Street Keep Kyne) (Son Son Son Son Son Son Son Son Son Son	20 21 12 9 13 9
interest, but Oil shares continued to attract a fair amount of attention, and the tendency of prices was again fivourable and the Preference were wanted at 10. North Caucasians further rose to 30s and Ural Caspians at 12 and Spies at 10s 6d both showed modest improvements. Eagle Transport Treference were bur for the state of the tendency of the property of the state	Calcidonian Ord.  Great Central Feef  Great Northern Def.  Great Northern Def.  Great Davier Pret  Great Davier Central	116% 121 28 28 102% 166 22 31%	LAND.	
ments. Eagle Transport Preference	Metropolitan Do. District	19 19	Bovril Australian Estates British North Borneo. Decrats Hudson's Bays	13/ 15/
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## **Price Analysis**

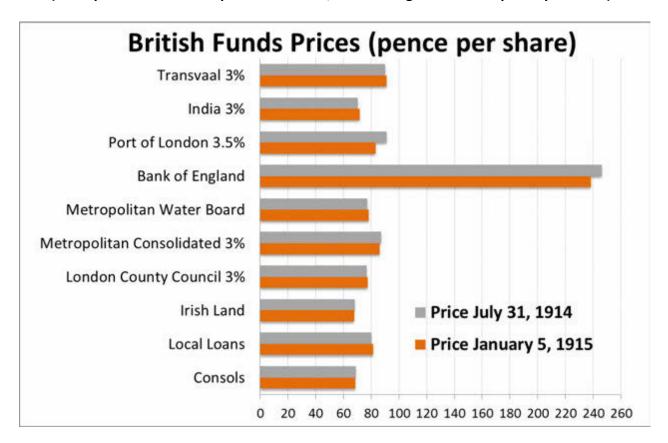
My stock price analysis during the London financial crisis of 1914 begins with what the *Financial Times* called "British Funds"—British Empire bonds, including the bellwether British Consol, and Bank of England equity. I traced the ten primary British Funds that apparently had the highest volumes of trading in 1914. A cumulative analysis of the ten British Funds finds that prices dropped 12.25 points from July 31 to January 5, the first day prices were recorded after the House reopened. Prices dropped significantly from July 30 to July 31, but I was more interested in analyzing the recovery of prices rather than the initial sinking of prices once the crisis hit.

The two British Funds that dropped the most during the span of the crisis were Bank of England stock and Port of London bonds. Bank of England stock declined significantly during the week leading up to the closure of the House on July 31. The stock sank 6 pence per share from July 24 to July 31, dropping from 250 pence to 244 pence. (Stocks were quoted in pence. Recall that under the pre-decimal currency system, £1 = 240 pence.¹) The reason for this significant slump was the fire sale of assets for cash and gold. Given the high price of the Bank of England stock, it was the primary asset that investors were trying to sell in order to obtain more liquid assets. Bank of England stock continued to drop throughout the crisis. Next, the Port of London stock also realized a significant price drop. Trade became very restricted during the crisis, especially overseas trade. The Port of London experienced diminished usefulness in the war given the lack of overseas trade. Therefore, this stock dropped in value.

Transvaal 3 percents increased in price during the crisis. Transvaal was the world's most concentrated gold-mining region, gold was obviously in high demand, and imports of gold significantly increased through the crisis. Consols remained relatively stagnant throughout the crisis as investors waited for Settlement Day. Figure 5 depicts the price change of all ten British Funds during the crisis. The graph marks the price of the security on July 31, the first day of the closure, and January 5, the first day of prices once the London Stock Exchange was reopened.

<sup>&</sup>lt;sup>1</sup> American and Canadian stocks were an exception, being quoted in dollars. The Canadian and American dollars were equal at the time. For bookkeeping purposes, the London Stock Exchange valued the dollar at the round multiple of \$5 = £1\$, whereas the official parity of exchange was a less convenient \$4.8665635 + £1. Consequently, a New York security trading at \$100\$ was equal to a London security trading at \$102.75 (Financial Review 1915, 89).

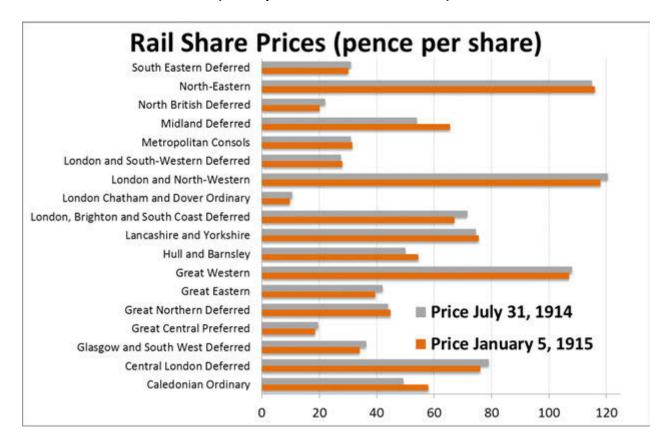
Figure 5: British Funds Prices, July 31, 1914 and January 5, 1915 (Bond prices relative to a par value of 100; Bank of England stock in pence per share)



The next category of stocks to analyze is Home Rails. Railways were perhaps the leading industry of the 19th and early 20th centuries for their importance in economic modernization, which is reflected in them being some of the most heavily traded securities on the London Stock Exchange. Home Rails therefore give a good rough indication of the overall state of the equity market in London. On the unofficial exchange during the 1914 crisis, Home Rails continued to be heavily traded, being among the small percentage of stocks listed in the *Financial Times*.

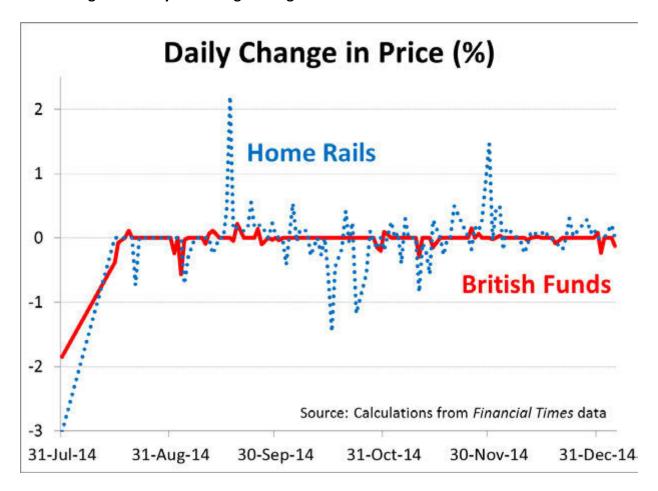
Home Rails experienced an overall price appreciation during the life of the unofficial exchange. The 18 Home Rails I analyzed cumulatively increased by eight points during the closure of the exchange. My research suggests that a potential reason for this price appreciation was that the war brought increased demand for railways to transport war material and soldiers. Figure 6 depicts prices on July 31 and January 5.

Figure 6: Home Rails Prices on July 31, 1914 and January 5, 1915 (Pence per share of common stock)



Next, let us examine the daily price changes that occurred from July 31 to January 5. I calculated the percentage change in prices for both British Funds and Home Rails on a daily basis, and then graphed the results to depict the overall price fluctuations that occurred during the crisis. Coupled with market color, the study then correlates price fluctuations with events that triggered the movements. Major events that occurred in other foreign exchanges as well as in the war itself were often responsible for major fluctuations in prices. Figure 7 illustrates the daily percentage change in prices during the crisis. This figure is followed by a table comparing major market and military events with substantial days of price fluctuations. A full list of market color commentary can be seen at the end of the study.

Figure 7: Daily Percentage Change in Prices for British Funds and Home Rails



**Table 1: Events Possibly Related to Price Movements** 

## **Major Events in British Markets**

July 31, 1914	London Stock Exchange closes, prices drop significantly
August 4	British Government announces involvement with unofficial exchange
August 15	First nominal prices printed since closure of the House
August 21	Foreign trade rules released, home rails drop in price
September 9	Chancellor of the Exchequer announces war expenditures
November 11	Parliament reopens
November 18	Settlement Day occurs and enthusiasm rises on the street
January 5, 1915	London Stock Exchange reopens

### **Major Foreign Market and World War I Events**

June 28, 1914	Archduke Franz Ferdinand assassinated
July 23	Displacement moment for investors, Serbia doesn't accede to ultimatum
July 30	Russia mobilizes army
August 1	Germany declares war on Russia
August 3	Germany declares war on France
August 4	Germany invades Belgium, Great Britain declares war on Germany
August 19	U.S. President Woodrow Wilson announces U.S. neutrality
September 5	First Battle of Marne begins, initiating trench warfare
November 3	U.K. announces North Sea as military area, creating blockade on Germany
December 12	New York Stock Exchange reopens for stock trading

#### Conclusion

The financial crisis of 1914 was unique in many ways. The openness of markets allowed for connected international trade and financial flows to an extent that would not be the case again for many years. Due to the connectedness of markets, the outbreak of World War I put every major market and economy in the world in danger, especially in Europe. My study first and foremost prints prices from the unofficial stock exchange in London that have not previously been analyzed. My analysis of prices show the recovery of prices for Home Rails in Britain, but the slump of British equity prices, mainly due to the decrease of prices in Bank of England and Port of London securities. Furthermore, the study brings to light the relationship between price movements and major World War I events. Although price volatility was not extreme throughout the duration of the crisis, there was a correlation between price movements and major worldwide events. It is important to note that after the House reopened, prices increased significantly. If the unofficial exchange had not existed during the crisis, prices might not been able to recover once the House opened because price signals would have been impaired for a long period, creating great uncertainty about the condition of the firms and bond issuers quoted on the London Stock Exchange.

## Appendix: Market Color from the *Financial Times* during the Suspension of Trading

Date	Market Color
30-Jul-14	London Stock Exchange experiences one of the worst days in history. Stock
	Exchange Committee holds meeting to consider the closing of the exchange.
31-Jul-14	London Stock Exchange closes its doors. Banks close.
01-Aug-14	Major movement at the Bank of England to withdraw gold.
02-Aug-14	(Sunday)
03-Aug-14	
04-Aug-14	Announcement made that upon reopening, there will be organized support of the government towards the exchange, apparently a first in the history of any stock exchange.
05-Aug-14	Reports released showing that the gold position within the Bank of England is very strong. Confidence increases.
06-Aug-14	Leaders of the banking world in conference with the Chancellor of the Exchequer to complete financial arrangements for the adjustment of the new
	banking policy during the crisis.
07-Aug-14	"Approximate Guide to Private Negotiations" released. First sign of unofficial stock market.
08-Aug-14	Banks reopen doors in England for first time since closure on July 31.
09-Aug-14	(Sunday)
10-Aug-14	All UK railways put under government control.
11-Aug-14	French Government breaks off all relations with the Austro-Hungarian government. Political tensions continue to rise throughout Europe.
12-Aug-14	July output of gold from the Transvaal (South Africa) mines is largest ever recorded.
13-Aug-14	Chancellor of the Exchequer completes arrangements with the Bank of England to terminate the present deadlock on the money market and allow for the immediate resumption of trade and commerce.
14-Aug-14	Access to credit restored. Treasury notes issued on a convertible-into-gold basis.
15-Aug-14	Bankers meet on Throgmorton Street for first time to conduct unofficial business. The unofficial market officially begins. First nominal prices recorded in the <i>Financial Times</i> .
16-Aug-14	(Sunday)
17-Aug-14	Sir William Plender, first Baron Plender, announces that all interactions with London branches of German and Austrian banks may be resumed.
18-Aug-14	Confidence recovering slightly as unofficial market grows.
19-Aug-14	Bank of England receives huge gold imports as demand for gold grows.
20-Aug-14	Government begins to take larger role in the assistance of trade and commerce.

21-Aug-14	List of items not allowed to be exported released. After much debate, tea is left off the list.
22-Aug-14	Increased talks of government intervention in the stock exchange.
23-Aug-14	(Sunday)
24-Aug-14	First week of unofficial trading provides increased confidence, but no further
	advancements are made on setting an official reopening of the exchange.
25-Aug-14	Allies begin initiating attacks across the whole Western Front.
26-Aug-14	Citizens notified that trade with Germany will continue to be interrupted.
27-Aug-14	Bank of England announces release of new treasury certificates to increase lines
	of credit amongst consumers. German Treasury sells £4 million of Canadian
	Pacific securities to try and cripple London Stock Exchange.
28-Aug-14	Statements released presenting figures on rapid monetary recovery since closure of the exchange.
29-Aug-14	Liverpool Chamber of Commerce releases proposal to Government to stimulate
	the resumption of overseas traffic to accelerate trade.
30-Aug-14	Financial Times presents new guide to private negotiations in light of increased
	trading on the unofficial market.
31-Aug-14	Sir Johns French, first Earl of Ypres, issues report on British Army and their
	success. Confidence improved.
01-Sep-14	Announcement made that overseas commerce with America could be resumed
	soon.
02-Sep-14	United States prices rising, increasing confidence in Europe.
03-Sep-14	Stock volume report for August issued- reports gradual increase in volume traded since July 31.
04-Sep-14	Gold report issued showing significant recovery of value and volume of gold.
05-Sep-14	
06-Sep-14	(Sunday)
07-Sep-14	Increased concern arises in Germany about the state of their finances. The
-	German economy was the weakest of all combatant nations at the beginning of
	the war, and it continues to be of significant concern for the nation now.
08-Sep-14	Discount rates experience significant drop.
09-Sep-14	Chancellor of the Exchequer announces the financing of the war will take
•	precedence over all other monetary activities.
10-Sep-14	U.S. Federal Reserve Board considers plan to have American banks underwrite a
	fund of £150 million credit to be used as clearing house for British-American
	debts.
11-Sep-14	Trading with the Enemy Bill released to properly monitor all transactions with
	enemy nations.
12-Sep-14	Trade reports show that during the first month of war, only 25% of trade returns
	have been effected, mainly the cotton trade and construction of vehicles.
13-Sep-14	(Sunday)
•	

14-Sep-14	Announcement made that various firms of auctioneers will begin auctions of shares of stock in the unofficial market.
15-Sep-14	Stock Exchange Committee decides to fix a minimum price for trust stocks.  General sentiment on Throgmorton Street is best since the crisis began. Lots of animation on the street.
16-Sep-14	Influx of Treasury bills into the market.
17-Sep-14	Lack of news on war decreases confidence of investors. Trading on Throgmorton Street reduced.
18-Sep-14	Release of price restricts business and trading decreases further.
19-Sep-14	No further news from the war released. Minimum fixed prices and lack of news continue to cripple business.
20-Sep-14	(Sunday)
21-Sep-14	A half million pounds sterling in gold was received by the Bank of England.
22-Sep-14	
23-Sep-14	More nominal prices released to the public on the unofficial market.
24-Sep-14	Three ships lost in the North Sea decreases confidence amongst investors. Sellers of shares could not find buyers.
25-Sep-14	A plan is constructed to end the fixed minimum prices put into effect September 15 as they have crippled investments over the past 10 days.
26-Sep-14	One of the worst weeks on the unofficial market comes to a close as a lack of new on the war does not generate confidence in investors. Prices drop all week.
27-Sep-14	(Sunday)
28-Sep-14	Increased measures taken to prohibit any sort of trading with enemies.
29-Sep-14	Throgmorton Street draws largest crowds since the opening of the unofficial market, but dealings still at a minimum. Little movement in prices observed.
30-Sep-14	Stock Exchange Committee submits plan to Government to safeguard the interests of borrower and lenders, as well as debtors and creditors in dealing with the market and Bank of England. Arrangement should help increase investor confidence in making deals. Very good step towards reopening the exchange.
01-Oct-14	The news circulated yesterday about the allied success in the Battle of the Aisne significantly increases investor confidence. Animation on Throgmorton Street.
02-Oct-14	Increased investor confidence takes over on Throgmorton Street. Significant increase in demand for home and colonial rail stocks.
03-Oct-14	Stock Exchange Committee comes to a decision that will prohibit dealings in American stocks at prices below the English equivalent of the New York closing quotations of July 30th.
04-Oct-14	(Sunday)
05-Oct-14	Government announcement: it is illegal to "enter into any new transaction or complete and transaction already entered into with an enemy in any stocks, shares or other securities."

06-Oct-14	Committee's decision from Saturday regarding American stocks reduces
	investor confidence in American stocks, and brings trading to a standstill.
07-Oct-14	Announcements from Saturday and Monday really crippling market.
08-Oct-14	New short-term 5 percent British Treasury bill issued. High demand on
	Throgmorton Street for it.
09-Oct-14	Investors inquring for bonds of Eastern allies Russia and Japan.
10-Oct-14	Reduction in deposit rates increases demand for high-class stocks such as
	Consols and Colonial Government stocks. Investors want to transfer their funds
	into sound investments.
11-Oct-14	(Sunday)
12-Oct-14	The fall of Antwerp over the weekend reduces investor confidence. Prices drop.
13-Oct-14	Foreign exchange table released for first time since exchange closure.
14-Oct-14	Stock Exchange Committee issues fixed minimum prices for American stocks
	in order to facilitate an increase in trading.
15-Oct-14	
16-Oct-14	Bank of England receives strong return from the week in their dealing with both
	gold and reserves. Transactions in the unofficial market still at a minimum.
17-Oct-14	
18-Oct-14	(Sunday)
19-Oct-14	As the end of the moratorium is in sight, expectations arise that the Stock
	Exchange Committee will announce it's terms on stock exchange loans.
20-Oct-14	Recent success in the war over the weekend announced. The sinking of four
	German destroyers increases confidence on Throgmorton Street.
21-Oct-14	Continued positive news on the war increases confidence on Throgmorton
	Street, but transactions still low.
22-Oct-14	Talks resume about the opening of the stock exchange. House predicted to open
	November 18, but no official opening of the exchange will occur.
23-Oct-14	A large amount of business was conducted on the Royal Exchange between
	London, Paris, and New York as overall attitude towards the Allies' efforts in the
	war turns positive.
24-Oct-14	The dealing of commodities begin to rise. Positive attitudes prevail as the
	financial system begins to return to the norm.
25-Oct-14	(Sunday)
26-Oct-14	After a few weeks of allied success in the war, the Germans ramp up efforts to
	break allied lines.
27-Oct-14	As confidence has been rising over the past week, an increase in demand is seen
	in the highest class securities including Home Railway Prior stocks and the best
20.0-1.44	American bonds.
28-Oct-14	Courth African valuation agrees as short to Fortund
29-Oct-14	South African rebellion comes as shock to England, creates nerves for some
20 Oct 14	Investors.  An influx of 62 E million of gold and 61 million of recornes increases Bank of
30-Oct-14	An influx of £3.5 million of gold and £1 million of reserves increases Bank of

	England's position.
31-Oct-14	The entrance of Turkey into the war spurs increased demand for short-term
31-001-14	notes.
01-Nov-14	(Sunday)
02-Nov-14	Latest positive news from France, Belgium, and Poland increases confidence
U2-NUV-14	
	throughout England. Military report states that war should be over much sooner than initially expected.
03-Nov-14	United States elections occurring today. Investors in both America and London
05 1101 14	waiting to see results.
04-Nov-14	Increased confidence about war efforts and US elections spurs demand for
01110121	highest class stocks once again.
05-Nov-14	Stocks in US rise rapidly after results of election.
06-Nov-14	The day for dividend settlements is quickly approaching, and all of the talk on
	Throgmorton Street concerned the rules to be passed soon.
07-Nov-14	
08-Nov-14	(Sunday)
09-Nov-14	The crisis proposes new issues for the Investment Trusts that are to close to.
	Talks open about what to do with the trusts.
10-Nov-14	Business was dull today, but prices remain steady despite lack of transactions.
11-Nov-14	Parliament reopened today, and talks were initiated about an early issuance of
	Government stock for the purposes of carrying on the war.
12-Nov-14	The financial position of Britain is evaluated. It is beginning to be understood
	that massive losses will be seen due to the war efforts, and taxation will be
	higher for the coming years.
13-Nov-14	Emergency rules released for the handling of the closure of the exchange and
	the handling of settlements.
14-Nov-14	The demand for the highest class stocks continues to increase, and in some
	cases the floating supply has disappeared.
15-Nov-14	(Sunday)
16-Nov-14	Confidence high on Throgmorton Street as structure is returning to the market
_	with the latest Emergency Rules and impending War Loan.
17-Nov-14	Business in the unofficial market predicted to increase significantly after
_	settlement this week.
18-Nov-14	Dividend settlement to occur today. Lots of enthusiasm on the street today.
19-Nov-14	Wednesday's settlement went very well. After much preparation, many firms
_	were able to settle, barring six. Business expected to increase after this.
20-Nov-14	As expected, there was much action on Throgmorton Street Thursday, and
	many prices saw increases.
21-Nov-14	The successful settlement Wednesday has investors hopeful that the exchange
	will be opened within a month. Business continues to grow on Throgmorton
	Street.
22-Nov-14	(Sunday)

23-Nov-14	Review of the Swiss Bank on the war states that finances will play a significant
	role in the outcome of the war. The side that exhausts funds first will be in
	trouble.
24-Nov-14	Russian victory in Poland increases confidence, home rails on the rise.
25-Nov-14	
26-Nov-14	American markets on the rise upon news that the New York Stock Exchange
	would be reopened for dealings on listed bonds Saturday.
27-Nov-14	Big victory for Russia on the battlefield spurs demand for Russian bonds.
	Animation on the street at the highest point since the beginning of the unofficial
	market.
28-Nov-14	Saturday caps a strong week in the unofficial market. American stocks and
	South American rails make large, positive price movements.
29-Nov-14	(Sunday)
30-Nov-14	November ends on a positive note. The settlement was successful, industrial
	and mining markets grew, and the exchange is expected to reopen within the
04.5	next month.
01-Dec-14	Foreign trade in healthy condition after positive transactions in the unofficial
02 Dec 14	market.
02-Dec-14	Impending NYSE opening and allied success in the war spurs increased demand
03-Dec-14	for foreign bonds.  Despite lots of positive information and business, prices remain relatively
03-Dec-14	stagnant on the unofficial market.
04-Dec-14	War loan currently in high demand.
05-Dec-14	November returns released. Bank of England stock rises upon solid returns.
06-Dec-14	(Sunday)
07-Dec-14	NYSE officials meet to discuss opening of the exchange. Sentiment high that
	NYSE would be opened by weeks end.
08-Dec-14	Announcement made in the United States that the NYSE will resume full activity
	Saturday. Confidence increased in Britain.
09-Dec-14	Prices hold steady despite news that Germans have taken Lodz (Poland).
	Business is slow however.
10-Dec-14	Russian war costs announced- extremely high.
11-Dec-14	Bank of England officials meet to discuss potential change in bank rate, but no
	change is made.
12-Dec-14	Wall Street officially opens for trading in a specified number of stocks and
	bonds.
13-Dec-14	(Sunday)
14-Dec-14	Opening of NYSE Saturday increases investor confidence on Throgmorton
	Street. American stocks rise significantly.
15-Dec-14	As the war continues to accelerate, Germans are faced with advancing
_	economic pressures.
16-Dec-14	The reopening of Wall Street accounts for healthy tone on Throgmorton Street.

17-Dec-14	Foreign developments deemed responsible for slowness of unofficial market, and contraction in dealings was very noticeable.
18-Dec-14	Less animation on Throgmorton Street, but prices remain resilient, and hold steady.
19-Dec-14	As a result of the progress made between the Treasury, the banks, and the Stock Exchange Committee, there are ample grounds to believe that the House will be reopened on the first full working day of 1915January 4th.
20-Dec-14	(Sunday)
21-Dec-14	Domestic trade reports reveal positive returns throughout the crisis.
22-Dec-14	Due to Germany's increasingly severe economic condition, the mark experiences a significant depreciation.
23-Dec-14	As the holidays approach, unofficial market experiences small upward prices changes. Tone very positive on the street.
24-Dec-14	Unofficial market closes for the holidays.
25-Dec-14	(Christmas Day)
26-Dec-14	(Boxing Day)
27-Dec-14	(Sunday)
28-Dec-14	New stock exchange rules released with impending opening.
29-Dec-14	Unemployment report released. Unemployment has decreased over the past few months as need for workers has been rapidly jolted due to the war.  Unemployment numbers increase market confidence.
30-Dec-14	American stocks in high demand as recent opening of NYSE has seen very positive business within the United States.
31-Dec-14	Prices on Throgmorton Street rise slightly as 1914 comes to a close.
01-Jan-15	Business slow on the street as final preparations for reopening the formal stock market are made.
02-Jan-15	
03-Jan-15	(Sunday)
04-Jan-15	
05-Jan-15	The House (stock exchange) reopens after five months of closure. Official trading in select stocks and bonds resumes.

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