Data Appendix to "It Depends on Where You Search: Institutional Investor Attention and Underreaction to News"¹

January 2017

In this appendix, we describe in detail how to obtain the attention data from a Bloomberg Terminal. We first show how to find and view the raw data in Bloomberg. Next, we explain how to install the Bloomberg Excel Add-in. Finally, we explain how to import the Bloomberg attention data using the Excel Add-in.

A.1 Bloomberg's Attention Measures

The Bloomberg variable upon which we base our AIA measure is called "News Heat – Daily Max Readership" and has the API (Application Program Interface) data field names "NEWS_HEAT_READ_DMAX" and "NW016". The measure, available only at the daily frequency, is created using the maximum daily number from the hourly measures which are available in real time only. The real time hourly measure is named "News Heat – User Activity (Realtime)" and has API data field names of "NEWS_HEAT_USER_ACTIVITY_RT" and "RQ369". Figure A.1 displays the full set of "News Heat" variables in Bloomberg as well as their associated data field names.

To view the "News Heat – User Activity (Realtime)" for a specific stock on the Bloomberg terminal, type the ticker symbol followed by "Equity" and then either the data field name (i.e., "RQ369"), or "News Heat", and then select the appropriate field from the drop down menu. Figure A.2 shows that "News Heat – User Activity" for Google had a value of 3 at 10:28 AM on January 29, 2016.

¹ Ben-Rephael, Azi, Zhi Da, and Ryan Israelsen, 2017, Data Appendix to "It Depends on Where You Search: Institutional Investor Attention and Underreaction to News" available on SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2692181

A.2 – Installing the Bloomberg Add-in for Excel

While it is also possible to view and export historical daily data (e.g., News Heat – Daily Max Readership) directly from the Bloomberg software, it is more efficient to use the Bloomberg Add-in in Excel which uses Bloomberg's API.

To check whether the Bloomberg Add-in is installed, open Excel. If there is no "Bloomberg" tab, it is likely not installed. The Add-in can be installed by running the file "BBAddIn.exe" which can be reached either by navigating to the folder "C:\blp\DAPI\dde" or by searching for "Install Office Add-ins" in the Start Menu (See Figure A.3). After running the file, click on "Install" (see Figure A.4). Once the installer has finished, the window will indicate whether the installation was successful. If there was an installation error, re-running the installer and/or opening and closing Excel often resolves the problem. If the Bloomberg Add-in was successfully installed, there should be a "Bloomberg" tab (as shown in Figure A.5).

A.3 – Importing Bloomberg Data into Excel

Once the Add-in is installed correctly, open the Bloomberg Import Data Wizard by choosing "Import Data>Real-Time/Historical>Historical End of Day" from the "Bloomberg" tab in Excel as shown in Figure A.5.

Step one of the Bloomberg Data Wizard requires you to create a list of securities for which to import data. As seen in Figure A.6, this can be done by entering securities one at a time, or by using either an index or another list of securities. For example, to select the entire list of securities for the Russell 3000 index, type "RAY" (Bloomberg's abbreviation for the Russell 3000) into the "Indices" field and (once the "Available securities" field is populated) click on "Add all". After adding the list of securities, click "Next" to move to step 2.

In step 2, we add the fields of interest to the query. This can be done by searching for fields using the "search text" box, or by navigating through a directory based on categories of fields (using the "Categories" tab). In our case (as seen in Figure A.7), we add the attention variable by searching for the words "news heat" and selecting the appropriate variable from the

lists of variables matching the search. In this case, we select "News Heat – Daily Max Readership" and click "Add".

Step 3 allows the choice of date range for the query (shown in Figure A.8). Choose the appropriate range and click "Next".

In Step 4 of the wizard, the user can exclude or include non-trading days. This can be seen in Figure A.9. Bloomberg's attention measures are only available for trading days. In our case, we include all calendar days, but crucially, we do NOT select "carry over last value". Instead, we choose to indicate missing data with blank spaces.

Step 5 of the wizard is not relevant for the attention data. Choose "Yes" (if not already selected) for "Follow DPDF Settings" and click "Next".

Step 6 (shown in Figure A.10) determines the layout of the exported data. Select "Only first security" under the category "Show labels." If this is not selected, dates are listed to the right of data for each security as opposed to a single time to the right of the first security. After clicking "Finish", the data should appear similar to that displayed in Figure A.11.

(Menus to R	oturn			
news heat	scuin		Page 1/1	Search Bloomberg: Results
1)Top Results		Sort By Relevance Category	AU	
General		Data Fields		-
2)Companies	2	4) News Heat - User Activity (Realtime)	R0369	NEWS_HEAT_USER_ACTIVITY_R
3)Functions		⊉)News Heat - Story Flow (Realtime)	R0368	NEWS_HEAT_STORY_FLOW_RT
4)People	3	4) News Heat - Max Story Flow	NW012	NEWS_HEAT_PUB_DMAX
5)FAQs		44) News Heat - Daily Max Readership	NW016	NEWS_HEAT_READ_DMAX
6)Definitions		6) News Heat - Average Readership	NW015	NEWS_HEAT_READ_DAVG
J)Reference		4) News Heat - Daily Average Story Flow	NW013	NEWS_HEAT_PUB_DAVG
B)Excel Library		Ø) News Publication - Daily Number of Stories	NW014	NEWS_HEAT_PUB_DNUMSTORIE
9)Data Fields	7			
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11)Law				
Securities				
12)Equities				
14)Fixed Income				
15)Currencies				
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Figure A.1 – Bloomberg's News Heat Data Fields

Figure A.2 – News Heat – User Activity for Google on January 29, 2016 at 10:28 AM

GOOG US Equity	Field Information for R0369
News Heat - User Activity (Realtime)	NEWS_HEAT_USER_ACTIVITY_RT
	3
A measure of readership interest in number of times people call up sto CN on the ticker looking for news. A the 30-dayaverage. Scores of 1-4 i top of the range. This field update:	a company relative to the previous 30 days, based on the ries with the ticker attached and the number of times they run A score of 0 indicates readership is not widespread or is below indicate readership is unusually high, with 4 representing the s in realtime.
90) Definition Australia 61 2 9777 8600 Brazil 5511 2395 9 Japan 81 3 3201 8900 Singapore 65 6212	0000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000 2 1000 U.S. 1 212 318 2000 Copyright 2016 Bloomberg Finance L.P. SN 816554 EST GMT-5:00 G457-3648-0 29-Jan-2016 10:28:23



Figure A.3 – Locating Excel Add-in Installer

Figure A.4 – Installing the Excel Add-in





Figure A.5 – Bloomberg's Import Data Wizard in Excel



Bloc	omberg Data Wizard - History - St	ep 1 of 6 - Create a list of Securities	?	×
Enter security		S <u>e</u> lected securities:		7
Security identifier:		A UN Equity		^
Market sector:	Index 🗸	AA UN Equity AAC UN Equity		
ldentifier <u>t</u> ype:	Ticker-Exchange V	AAL UW Equity AAMC UA Equity AAN UN Equity		
Select securities		AAOI UQ Equity AAON UW Equity AAP UN Equity		
Fr <u>o</u> m:	Indices V	AAPL UW Equity AAT UN Equity		
Available se <u>c</u> urities		AAVL UQ Equity AAWW UW Equity		
A UN Equity AA UN Equity	^	ABAX UW Equity ABBV UN Equity		
AAC UN Equity AAL UW Equity		ABC UN Equity ABCB UW Equity		
AAMC UA Equity AAN UN Equity		ABCD UR Equity ABCO UW Equity		
AAOI UQ Equity AAON UW Equity	~	ABCW UW Equity ABEO UR Equity		~
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Bloomberg	14	Cancel < <u>B</u> ack <u>N</u> ext >	<u>F</u> ini	sh

Figure A.7 – Step 2 - Choosing "News Heat – Daily Max Readership" in Bloomberg Data Wizard

E	Bloomberg Data Wiz	zard - Histo	ry - Step 2 of	6 - Create a list	of Fields	? ×
Field source:	Bloomberg Fields	¥		Selected fields:		
Search text:	news heat		Reset	News Heat - Daily	Max Readership	
Filter:	Asset Class Field 1	Гуре	Search			
Display values for:	Select	~				
Categories Li	ist Favorites					
Type Name	Mnemonic	Value				
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News Heat	- Daily NEWS_HEAT_R	EAD	>			
News Heat	- AVER NEVVO_HEAT_R	EAD				
News Heat	- Max NEWS_HEAT_PU	JB_D				
News Public	cation NEWS_HEAT_PU	JB_D				
Also available as His Maximum value of N	storical field Jews Heat - User Activity (Re	time) (RQ369	^			
midnight local time for	R ACTIVITY BT for the data or the parent company's time	ay. Field updates zone.	s at 12			
More field details	s 🕻	Add	Add All	Add To Favorites	Remove	Remove all
Bloomberg	14	-	Cancel	< Back	Next >	Finish

Figure A.8 – Step 3 - Choosing Date Range in Bloomberg Data Wizard in Excel

Calendar type:	Calendar 🗸	Periodicity:	Daily	~
Date Format:	Date 🗸	Calendar Code:	Calendar Default	•
frame				
Fixed time se	ries			
 Date 	From: 1/ 1/2016	To: 1/28/20	016	Current
O Period	From: CQ1 🗸 2015 🗘	To: CQ1	∨ 2016 ‡	Current
 Relative time 	series			
End date:	 Today 	O Date:	1/31/2007	*
	C Last Reported Period	O Period: C	Q1 V 2016	A T
Number of	periods: 1 🗘 Days	~		

Figure A.9 – Step 4 - Non-trading days and missing data in Bloomberg Data Wizard in Excel

Bloomberg Data Wizard	- History - Step 4 of 6 - Set History Parameters ?
Currency	
Security default	
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Include all calendar days (Rep) red for the	Only for mist security" check box on the "Layout Options page (teo 6).)
Filler value for non-trading intervals. O Ca	arry over last value 🔘 #N/A N/A 💿 Blank 🔘 Carry back next value I/A 🔷 Custom:
Scaling Factor Enter a value to sc	ale the Historical Time Series
Quote (yield quoted securities only)	Points
Yield	Specify maximum # of points
O Price	Data points: 1
Quote Calculation	
Closing quote	
O Quote GPA	
Bloomberg 14	Cancel <back next=""> Finish</back>

Figure A.10 – Step 6 - Layout Options in Bloomberg Data Wizard in Excel

 Existing worksheet: [Book1]Sheet1!\$A\$1 New worksheet Show labels Security Date Field Only first security Field Orientation Horizontal Vertical Multi-sheet Single security per sheet Show security ID on tab Time ordering Chronological Reverse chronological Data set aggregation Aggregate in a single cell 	Data placement	Table L	ayout				
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4	1/2/2016						
5	1/3/2010	2	3				
7	1/4/2010	2	3	0	4	0	
8	1/6/2016	2	4	0	4	0	
9	1/7/2016	4	4	0	4	0	
10	1/8/2016	1	4	0	1	1	
11	1/9/2016			-			
12	1/10/2016						
13	1/11/2016	3	4	0	3	0	
14	1/12/2016	2	4	0	4	0	
15	1/13/2016	0	2	0	2	0	
16	1/14/2016	0	1	0	0	0	
17	1/15/2016	0	1	0	0	0	
18	1/16/2016						
19	1/17/2016						
20	1/18/2016	0	0	0	0	0	
21	1/19/2016	2	1	0	0	0	
22	1/20/2016	0	1	0	0	0	
23	1/21/2016	0	1	0	0	0	
24	1/22/2016	0	1	0	0	0	
25	1/23/2016						
26	1/24/2016						
27	1/25/2016	4	4	4	0	1	
28	1/26/2016	1	0	3	0	0	
29	1/27/2016	0	1	2	0	0	
30	1/28/2016	2	1	4	0	0	

Figure A.11 – Bloomberg Attention Data Imported to Excel