

Appendix 1

Note on Statistical Methods and Data

The quantitative analysis involved time series analysis with data arranged in quarterly intervals. Because time series data tend to suffer from heteroskedasticity (White, 1980), one variable — net income — was logged, which reduced skewness and differences in measurement scales. Furthermore, preliminary testing revealed the presence of serial autocorrelation (Durbin, 1970). Addressing this problem, and the possibility that the relationship between financial performance and archival usage is endogenous (Roberts and Whited, 2013), Barclays performance was modeled using Vector Autoregression (VAR). The advantage of using a VAR model is that VARS models are unlikely to suffer from serial autocorrelation and facilitate the establishment of the direction of causality (Lütkepohl, 2005). VAR models combine several simultaneously evolving dependent variables and estimate each with an equation containing its own lags and the lags of the other variables (Sims, 1980). VAR models usually do not suffer from serial autocorrelation and facilitate the establishment of the direction of causality (Lütkepohl, 2005). Since the VAR technique requires that the variables be stationary, all variables except BCS, GDP, growth and income diversity were first differenced. The correlations between all the variables, presented in Appendix Table 2, show no indication of multicollinearity (Farrar and Glauber, 1967).

Insert Table 2 about here

In this study, EPS was modeled with BCS as an endogenous explanatory variable. The requests captured under PRS, GDP growth, LIBOR, net income, net interest income, income diversity, the

Tier 1 capital ratio, the volatility index, and U.K. consumer confidence were treated as exogenous control variables. Because bankers generally use equity-related variables as key performance indicators, taking other variables as givens (Admati and Hellwig, 2014), only EPS is treated as an endogenous variable. Pre-estimation diagnostics were carried out in order to optimize data fit. All selection order criteria, including Akaike's Information Criterion and the Hannan-Quinn Information Criterion, suggested that the VAR model include lags of the dependent variables up to three quarters. The exogenous variables were not lagged since financial markets generally respond quickly to events. After the VAR, we performed the so-called Johansen test (Johansen, 1995), which determines the presence of cointegrated, long-term relationships (Engle and Granger, 1987) that can lead to VAR misspecifications (Granger, 1981). However, no evidence for such a relationship was found.

Our VAR model, presented in Appendix Table 3, contains two indicators of market uncertainty: the average LIBOR highs and the average VIX closings. In our model of the number of archival requests by BCS, the LIBOR variable is insignificant, while the VIX closing appears to have a significantly negative impact ($p=0.024$). Our findings therefore disconfirm Hypothesis 1; market volatility did not stimulate the use of corporate archival documents.

Insert Appendix Table 3 about here

The effects of market volatility lend more support to Hypothesis 2 than to Hypothesis 1. We found that at a lag of three quarters, EPS negatively affects archival activity by BCS. When

the performance of the firm declines, senior decision-makers turn for guidance to historical documents the firm's archive. .

For an extra insight into the causality between Barclays' performance and the senior managers' use of its archive, we ran the Wald test of Granger causality. The results, depicted in Appendix Table 4, demonstrate that archival usage and the EPS figure significantly Granger cause each other. Hence, developments in the EPS figure were followed later in time by developments in archival usage, and vice versa. The existence of mutual Granger causality implies that these two variables were part of a mutual feedback mechanism. Beyond justifying the use of VAR in this study, the Granger causality tests support the idea that Barclays' utilization of the archive was at least in part a reaction to declining performance ($p=0.024$ for this direction of causality). Together with the results of the VAR model of archival activity, this finding provides ample support for Hypothesis 2.

One conclusion that can be drawn from Appendix Table 4 is that in this mutual feedback mechanism, archival activity also drove the EPS figure — in fact, with a p -value of less than 0.001 this direction of causality is much more significant. Our model of EPS in Appendix Table 3 provides more clues as to the nature of this causality. The effects of BCS archival requests are significant at lags two and three. Paradoxically, the effect at lag two is negative, while the coefficient at lag three is positive. Together, the results suggest that consulting the archive for strategic purposes eventually improves performance. However, the positive effects are not immediate; initially, archive utilization appears to decrease performance. This finding supports literature on the costs associated with archival activity (Lasewicz, 2015), and considering that the processing of archival resources is time consuming and directs valuable managerial resources away from other tasks, this is not totally surprising. The significant covariates all have intuitive

effects on performance. The eventual positive performance effects of strategic archival activity support Hypothesis 3.

Appendix Table 1: Descriptive statistics

Variable	N	Mean	St. Dev.	Min	Max
EPS*	39	-0.0588	0.6077	-1.402	2.0470
BCS	40	48.1750	28.2556	9.0000	142.0000
PRS*	39	0.2564	27.5408	-91.0000	42.0000
GDP growth	40	0.8900	0.9462	-1.600	2.500
Average LIBOR highs*	39	-0.1090	0.5794	-2.8967	0.6203
Net income ⁺	39	-0.0198	0.3417	-1.0284	1.1008
Net interest income*	39	63.9772	537.4393	-996.1655	1191.42
Income diversity	40	0.8368	0.0768	0.6128	1.0160
Tier 1 capital ratio*	39	0.1282	0.4018	-0.4000	1.2500
Average VIX closings*	39	-0.3576	8.2137	-16.5774	35.7835
UK consumer confidence*	39	-0.0141	0.3996	-1.0258	0.9717

*: first difference taken

+: first logged, then first difference taken

Appendix Table 2: Correlogram (N=39 for each variable)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) EPS	1.0000										
(2) BCS	-0.2016	1.0000									
(3) PRS	-0.0480	0.1413	1.0000								
(4) GDP growth	0.1691	-0.3798	0.1035	1.0000							
(5) Average LIBOR highs	0.2738	-0.5471	0.2107	0.4813	1.0000						
(6) Net income	-0.0903	0.2905	0.0042	-0.0469	-0.0370	1.0000					
(7) Net interest income	-0.0920	-0.1540	0.0064	0.3049	0.3631	0.2465	1.0000				
(8) Income diversity	-0.1717	0.1937	0.3881	0.0822	0.0961	0.0389	0.0130	1.0000			
(9) Tier 1 capital ratio	-0.2182	0.6542	-0.1151	-0.3762	-0.3851	0.3754	0.1507	0.1693	1.0000		
(10) Average VIX closings	0.3762	-0.2747	-0.2977	-0.0922	0.1133	-0.4470	-0.4171	-0.2804	-0.2866	1.0000	
(11) UK consumer confidence	0.0601	0.1602	0.0643	0.2066	0.1797	0.1372	0.5040	0.1488	0.2876	-0.4881	1.0000

Appendix Table 3: Vector Autoregression (VAR) Model of EPS and BCS. N=36. Endogenous variables in italics.

		<i>EPS</i>		<i>BCS</i>
<i>EPS</i>	L1	0.3101 (0.1438)	L1	1.7731 (4.6280)
	L2	-0.6291 (0.1226)***	L2	7.4101 (3.9476)~
	L3	0.2309 (0.1360)~	L3	-11.0661 (4.3778)*
<i>BCS</i>	L1	0.0098 (0.0051)~	L1	0.3528 (0.1636)*
	L2	-0.0153 (0.0039)***	L2	0.1280 (0.1262)
	L3	0.0097 (0.0032)**	L3	0.1914 (0.1036)~
PRS		0.0071 (0.0030)*		0.0918 (0.0952)
GDP growth		-0.0177 (0.0858)		3.4092 (2.7632)
Average LIBOR highs		-0.1091 (0.1682)		-8.5831 (5.4129)
Net income		1.430 (0.2933)***		18.0076 (9.4420)~
Net interest income		0.0001 (0.0002)		-0.0199 (0.0065)**
Income diversity		0.2268 (1.418)		-145.7356 (45.6378)**
Tier 1 capital ratio		-0.6254 (0.2509)*		21.0548 (8.0767)**
Average VIX closings		0.0716 (0.0136)***		-0.9875 (0.4366)*
UK consumer confidence		0.7178 (0.2875)*		1.5412 (9.2539)
Constant		-0.3255 (1.090)		135.8611 (35.0899)***

~p<.1 *p<.05 **p<.01 ***p<.001.

Appendix Table 4: Granger causality Wald test Chi² scores (null hypothesis: no Granger causality).

Equation Excluded Variable	EPS	BCS
EPS		9.208*
BCS	23.496***	

~p<.1 *p<.05 **p<.01 ***p<.001.

References

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Appendix 2

Our interview protocol and schedule was approved in advance by the research ethics committee at the third author's university, which adheres to Research Councils U.K. ethics rules and the General Data Protection Regulation directive. Our interviews were recorded with the participant's permission and then were transcribed, as is best practice in interview-based research (Bryman, 2009). All participants signed a consent form and were given the opportunity to request anonymity. When quoting the individuals who requested anonymity, we simply refer to them by interview number and give a general description of their role within the Barclays Group. Each interview lasted between 20 and 62 minutes, with the average interview lasting 40 minutes. In the course of our research, we accumulated a total of over 11 hours of interview recordings. The interviews took place between March 2018 and October 2018. The individuals we interviewed are in Appendix Table 2.

Appendix 2 Table 1. Individuals Interviewed

Interviewee name	Bank division	Job title	How Manager Uses Archival Data
Alistair Smith	Corporate Communications	Managing Director	Both
Antony Jenkins	All	CEO, 2012 to 2015	Both
Anonymous A	Investment Bank	Managing Director	Sense-giving
Cerys Llewelyn	Corporate Secretariat	Assistant Vice President	Sense-making
Danny Reardon	Group Corporate Communications	Head of Corporate Relations London and South East	Sense-giving

David Ward	Corporate Banking	Relationship Director, Barclays Retail and Wholesale	Sense-giving
Fiona Parke	Corporate Banking/Retail	Relationship Director	Sense-giving
Anonymous B	Corporate Secretariat	Head of Board Support	Both
Helen McCarthy	Corporate Banking	Relationship Support Manager	Sense-giving
India Smyth	Personal Banking	Media Relations Manager	Sense-giving
James Greenhead	Group Corporate Communications	Vice President - Campaigns, Content and Planning	Sense-giving
Julian Bucknall	Barclays UK technology	Head of People and Engagement for Barclays Technology	Sense-giving
Katherine Farthing	Legal	Barclays Legal, Vice President, Litigation, Investigations & Enforcement EME	Sense-giving
Laura Smith	External - Speak Media	Managing Editor at Speakmedia	Sense-giving
Ray O'Donoghue	Corporate Banking	Managing Director	Sense-giving
Robert Radcliff	Corporate Banking	Head of Content and marketing	Sense-giving
Stephen Doherty	Corporate Communications	Director of Barclays Corporate Secretariat	Both
Wayne Measor	Retail Product Control	Managing Director	Sense-giving

Interview Schedule

1. What is your role at Barclays bank? (self-describe their role)
2. What are your day-to-day activities of your role?
3. How did you become aware of BGA? What did you think their role in the company was before using them? What kind of records did you think they held?
4. What was you first approached them with? What help did you think they could provide? What did you expect them to be able to do?
5. Did they meet your expectations? Did you get what you expected? More? Less? Different?
6. Have Barclays become more interested in their history in recent years, regardless of the anniversary?
7. Have you recommended BGA to other co-workers when discussing work? Have you seen other areas where, based on your experience BGA could have input?
8. How aware of Barclays' history were you before your interactions with BGA? Has your contact with BGA affected how you see Barclays' history? If so, has this affected how you see the bank at all?
9. How often did you use/discuss Barclays' history in your job more generally? Has contact with BGA led you to discuss or use it more?
10. How important is Barclays' history to you? Since working with BGA, has it taken on more or less importance? Why?
11. Based on your experience with BGA, what kind of services would you like to see them offer in the future, both in terms of your day-to-day work but also professionally, or just out of interest?
12. Are you aware of if/how the records you create reach BGA? Is this something that is highlighted in your training/meetings/discussions etc?

13. Do you currently have any specific plans to use BGA again in the future, or ideas of how they may be able to help?
14. Had BGA not been part of Barclays, would you have approached them? Hypothetically, had the records been held at a private company or university, would you have use them in the same way? Can you think of anywhere else in the company you could have got the same or similar information or services?
15. Is there anyone else you can think of that I should speak to about this? Can you introduce me to them?