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ATM time series, 1967-2017

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ATM Time Series, 1967-2017

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Abstract:

This short note is a description of the dataset compiled during the drafting of *Cash and Dash: How ATMs and Computers Changed Banking* (Oxford University Press, 2018). The full dataset is deposited with the European Association for Banking and Financial History, and is available for download from the association's website.

JEL Classification: G21, N20, N22, N24.

Keywords: banking and technology; datasets

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In assembling this database Robert Reid and Claudia Reese were the main research assistants (2007-2009). Other contributors included, Carles Maxe (A Coruña), Gustavo del Angel (CIDE) and Martin Gannon (Strathclyde). I received priceless support at Bangor from Sergio Castellanos, Alessio Reghezza, Jungsik Son and Prachandra Shakaya.

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Data on the number of terminals enabled me to assess the diffusion of the technology throughout different countries. These estimates were then weighted by the size of the urban population to enable cross country comparisons. This was followed by assessments in the use of the device, that is, comparing and contrasting the volume of withdrawals versus the monetary value of the withdrawals. Most of these comparisons involved annual data and year-end values. However, for the UK it was possible to ascertain use per hour of the day.

Also of importance was establishing the number and evolution of shared networks. These estimates provided an insight into the industrial organization of ATM networks which was then supported by documentary evidence as to how and why participants joined these networks, the technical challenges, organizational politics and other business dynamics (such as the prevalence of Visa and Mastercard in retail payments). As a result, it was possible to establish how global access to cash and liquid balances through ATMs is in fact a collection of otherwise independent, national shared ATM networks.

Data for the UK also includes the frequency of complains within the financial services ombudsmen around so-called “phantom withdrawals”. The performance of these enabled me to establish the prevalence of customer dissatisfaction with the technology as well as to explore issues around pay-to-use and free-to-use ATMs.

Finally, a point with the literature of gender and automation in retail banking is the role of labour saving devices. In this regard data for the UK in terms of number of employees, number of terminals and number of retail branches were compared with that collected for the USA by Bensen (2015). My estimates arrive at a similar

conclusion to the later study, namely a significant lag between the adoption of technology and the reduction of staff. Rather than looking at the trade-off between capital and labour, an argument is also made to utilise transaction volume as a key driver for performance in retail banking.

Selected References

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Description of ATM Time Series Dataset

(Please download and save the file on your computer to be able to open the links)

| Spreadsheet name | Content | Source | URL |
|---------------------------------|---|--|---|
| Ombudsmen investigations | Investigations pursued by retail financial services ombudsmen, 1986-2008 (UK) | Annual reports of Banking Ombudsman Service (BOS), Building Societies Ombudsman (BSO) and Financial Service Ombudsman (several years). | http://bankinghistory.org/wp-content/uploads/Ombudsmen-investigations.xls |
| Milestones | Technological, judiciary and industry turning points in the development of the ATM, 1959-2017 | Various | http://bankinghistory.org/wp-content/uploads/Milestones.xlsx |
| ATM use and ownership in the UK | +Number of Free to use vs pay to use ATMs (UK), 1994-2006 +Number of bank-owned vs IAD owned/manged ATMs(UK), 1994-2006 +Total stock of ATM at year end, 1967-2015 +Stock of ATM by banks and building societies, 1975-1990 +Transaction volume, number of transactions and number of ATM cards p.a., 1975-2003 | Link, Payments Council, Statista, Bátiz-Lazo (2009), Barrie (2006), Lloyds Banking Group, British Bankers Association, APACS. | http://bankinghistory.org/wp-content/uploads/ATM-use-and-ownership-in-the-UK.xlsx |
| UK bank branches and employees | +Aggregate employment by type of bank, 1980-2015 +Employment and branches Lloyds Banking Group, 1865-1995 +Average weekly employed staff in the UK at six selected banks, 1967-2015 | Office of National Statistics, BIS Red Book, annual reports. | http://bankinghistory.org/wp-content/uploads/UK-branches-and-employees.xlsx |

| Spreadsheet name | Content | Source | URL |
|----------------------------|---|---------------|---|
| Cross country ATM adoption | +ATM stock in Canada, selected years +ATM stock in India, 2011-2016 +ATM stock and shared networks in Japan, 1974-2015 +ATM and cash dispenser stock in South Korea, 1992-2015 +ATM stock and shared networks in Sweden, 1967-2015 +ATM stock, shared networks and usage in Spain, 1982-2015 +ATM stock and shared networks in the USA, 1970-2010 | Various | http://bankinghistory.org/wp-content/uploads/Cross-country-ATM-adoption.xlsx |