Access to Cash in the UK

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1 Executive Summary

- For 2000 years, until 1966, only cheques were a viable alternative to cash as a payment method for the UK public.
- The progress of alternative methods has depended on massive marketing and the creation of artificial advantages for the alternatives.
- Cash continues to be an important payment method and store of value for the majority of the UK public and businesses.
- Access to cash – notes & coins; deposit & withdrawal – is threatened by the closure of bank branches, removal of bank ATMs and a failure to see sufficient transaction-set innovation.
- Access to cash is further manipulated, in most countries around the world, by international payment schemes, governments and regulators.
- International comparisons indicate that where there is a level playing field in terms of payment methods, cash remains the preference of the public.
- Cash is the only viable alternative to domination of UK – and world – payments by international card schemes.
- A number of vital measures are identified to safeguard and improve access to cash in the UK, including the creation of a new independent Cash Circulation and Access Regulator, reporting to the Bank of England, to safeguard the public interest in every respect.
- Maintenance of cash as a payment choice in the UK is vital to ensure
    - financial inclusion for all;
    - competition to control cost of all payment types;
    - solid backup against technical failures and cybercrime.

2 Introduction

This document is a comprehensive overview of payment methods used in the UK, their history and how they reached the position they occupy in 2018.

Recommendations are made as to steps which must be taken to safeguard access to cash for both the UK public and businesses.

It has been written by two acknowledged experts on payments, who have only one motive in preparing the document: to ensure that the interests of the UK public and businesses who choose to use cash are put first when access to cash is being considered.

3 The Emergence of Cash

3.1 History

Before cash there was barter, essentially the direct and immediate swapping of essential items and services.

Cash itself has been in existence since 650BC, with the first coins minted in Lydia, on the western coast of modern Turkey. Currency made its way into Rome in the 3rd century BC, where the state used it to pay the army, the civil servants and to supply the whole economy. It was now a vital tool of economic exchange and store of value.

Coins were the only form of cash until about 800AD, when the Chinese developed the first banknote. The first European banknote was produced in Sweden in 1660.

3.2 Background to Cash Use in the UK

In the UK, the Royal Mint was founded in 886AD. It continues to produce coins for the UK. The Bank of England was founded in 1694 and first issued banknotes in 1695. Both the Royal Mint and Bank of England are owned by the Treasury Solicitor, on behalf of the UK government. The Bank of England has the same owner.

Cash, though sometimes criticised for being expensive, actually earns HM Treasury a profit each year. This profit is running at well over £1 billion a year currently. It is derived from seigniorage; the difference between the cost of the physical production of cash and its purchasing power.

Banknotes were initially supported by gold held at the Bank of England. This practice ended in 1931, since when banknotes have nominally been supported by securities held at the Bank.

Cash and cheques were the only payment method available to the UK public until 1966.

The situation for the UK public is neatly summed up by this extract from a newspaper article referring to that year:

> "In 1966, three years before Neil Armstrong would take the first steps on the moon, families had no internet to search for information, no mobile phones, no online banking or ATMs and no tax-efficient ISAs",
> Daily Mail, 27 September 2016

The rather obvious question is "How did the public get access to cash in 1966?"

There were three primary sources.

Firstly, their wages. In 1966, millions of UK workers, particularly the weekly paid, received their wages in cash, in a brown envelope, hand delivered at their place of work. On average, they received £20.6s.1d. This equates to around £370 today.

Secondly, at bank or building society branches. There were no ATMs, of course, so customers presented personal cheques or passbooks at counters and in return were given the cash they required. No exact figure for the number of branches where cash was available in 1966 is to be found. However, Briefing Paper 385 issued on 9 February 2018 and held in the House of Commons Library confirms that even in 1997 there were 15,875 bank and building society branches in the UK. There are unlikely to have been fewer in 1966, when there were more banks and building societies trading than in 1997.

Thirdly, by cashing a personal cheque at a retailer. The Cheque Guarantee Scheme, guaranteeing the payment of cheques up to £50 in value, started in 1965 and ended in 2011. However, traditionally retailers were prepared to cash cheques for customers they knew and trusted. This still happens today, though the number of cheques used in the UK has decreased significantly in the intervening years.

In some ways, 1966 was a watershed year –and not just because England won the Soccer World Cup. 1966 was the year the first credit card was issued in the UK. This was the birth of Barclaycard, which was followed by Access in 1972.

4 The emergence of cards

4.1 Credit cards

Credit cards were launched on the UK public in 1966, initially as a charge card, with credit limits set at £100 and £200. A year later, in 1967, Barclaycard became the first card to offer extended credit, with interest charged at 1.5% per month on anything unpaid after 25 days from statement issue.

It was not until 1977 that the blue, white and gold card linked up with Visa and the Visa logo was added.

In 1972, the other big four banks in the UK came together to issue the Access card, linked with the Eurocard scheme (now MasterCard).

Credit cards were created by lenders because, in 1966, the UK public were not heavily enough in debt to generate fast-growing profits.

In those days, you spent the money you had. If you wanted to spend more than you could earn or than family or friends were prepared to advance you, a Pawnbroker might lend you against an asset (some desperate people even pawned false teeth!). Otherwise, an overdraft or loan from your bank was the route to limited debt. Mortgages in those days were strictly linked to house purchase. Mortgages of over 100%, second mortgages and equity release were products yet to be invented.

Interestingly, another source of funding in the UK also started to emerge in the mid-1960s, in the shape of credit unions, where local people came together to save and lend small sums to each other. The first recorded British credit union appeared in Hornsey, North London, in 1964, with the participants being families of Caribbean heritage. Credit unions were not regulated until the Credit Unions Act 1979. Today, they offer current accounts, savings accounts (not always with interest), payroll deductions, standing orders, insurance and loans. They have gained strength since Building Societies largely disappeared after demutualisation in the 1990s.

There were a few plastic cards around before 1966, of course, such as American Express (1963) and Diners Club (1962), but they really hadn't caught the public imagination to any significant extent. Plastic itself was considered to be a bit "naff", analogous at the time to "Made in Hong Kong". In other words, cheap and cheerful enough, but not expected to last.

No one realised then just how long plastic could last. Now a glance at any beach provides the answer.

Anyway, in those happy, carefree days, payments equalled cash - and personal debt was not a big issue. It was to be avoided, not sought.

However, one thing we now know about debt is that it makes lenders huge profits. Recent experience of this includes Wonga, with their multi thousand % loans, but back in the 1960s there were no such heavily marketed products on offer. There were unregulated loan sharks – there always have been – but they operated on a local basis, usually within low-income areas.

Lenders needed to change that, so they invented credit cards. These bits of plastic made getting into debt easier, which is what the lenders wanted.

4.2 Public acceptance of credit cards

The cards were not an overnight success. The public seemingly did not see the need for them.

Part of the reason, of course, may have been that, from 1967, cash was even more readily available to the public than previously. For it was in 1967, on 27 June, that the world's first ATM was installed, at a Barclay's branch in the London Borough of Enfield.

Cash was reliable, available and understandable. The idea of paying by plastic was completely alien to most, and there was a strong view that credit cards were an undesirable American import. Indeed, Barclaycard was based on Bank of America's BankAmericard, which had been launched in 1958. The public also had the suspicion that the credit card was an inflationary system that encouraged people to spend money they did not have.

So what did lenders do in the face of this public apathy? There was a massive advertising campaign, with the largest ever newspaper advertisements, plus films shown at cinemas. Some of the marketing depicted a woman wearing only a bikini, with her card tucked into the waistband. Hardly subtle but oddly similar to more recent contactless card advertising, which featured a man in only swimming shorts carrying out his shopping by passing down a slide.

But, despite the forceful marketing, people weren't asking for cards fast enough - so Barclays decided to give everybody a card without being asked, sending out a million cards to its customers.

Of course, they wouldn't get away with that today, with consumer protection much more to the fore, but in the 1960s no thought was given to that. The Access launch in 1972 was similarly accompanied by unrequested postal deliveries, with a typical credit limit of £250 - equating to around £3500 in today's money.

From 1978, the main slogan of Access was "Your Flexible Friend", which featured in many television adverts, accompanied by an animated Access and his friend Money, with earlier adverts featuring the bumbling "Fat Wallet".

The impact of such cards was particular noticeable in relation to young adults. For example, students developed funding techniques such as using their cards to withdraw cash at one counter at their bank branch - and then going to the next counter to use that same cash to pay their Access bill.

Note, by the way, that in those days debt was still considered embarrassing, so no one would have withdrawn the cash on a credit card and paid the bill at the same counter.

So that is how it all really started, when lenders managed to persuade the UK public that it was acceptable to get into personal debt. Today, average household debt (leaving mortgages aside) in this country is around £13,000. Total credit card debt in June 2018 was £72.1bn. Per household, this is £2,650. (Source: themoneycharity.org.uk)

4.3 Debit cards

Debit cards did not appear in the UK until much later - in 1987 - because lenders hadn't yet devised a way of making significant profits from them. They knew the public in those days were not going to use debit cards instead of cash, so they had a puzzle to solve.

Internet shopping, which started in 1994, gave cards a huge shot in the arm in the UK. In other countries, this was not necessarily the case. In several countries, Germany for example, the public insisted that internet purchases were made on a "cash on delivery" basis.

To this day, in countries such as Indonesia, internet shopping remains a mainly cash-on-delivery proposition.

In the UK, the public was told they had to pay in advance when ordering goods on the internet. So they did.

At peak times of the year, the internet now accounts for 20% plus of retail sales in the UK. This represents a land grab for card issuing lenders - and now also for Pay Pal and others, who have muscled their way into the rich vein of potential profits

Meantime, the debit card issuers solved their difficulty in manufacturing really high profits from their bits of plastic.

4.4 Card fees

4.4.1 Point of sale (POS)

Card fees at point of sale are usually hidden to the user. The retailer pays a range of fees, including interchange (per transaction fee paid by retailer to card issuer) and scheme fees. Recent regulatory changes within Europe now prevent fees being imposed on consumers for use of cards, but card costs can obviously be incorporated in retail prices, as with any other operational cost.

4.4.2 UK ATMs

The majority of ATMs in the UK are Free-to-use for UK debit cardholders.

20% of UK ATMs apply charges, but this accounts for only 2% of the transactions (source: link.co.uk, 2017 figures). In remote locations, where operational costs are higher and usage lower, the fees are applied to ensure cash access for local public and businesses.

Card issuers are able to negate that user fee for their account holders using a charging ATM if they wish, but no card issuer has yet used that option.

4.4.3 Debit cards used internationally, at POS and ATM

Debit card issuers have supplemented their domestic income, the percentage extracted from retailers for each card purchase, with high charges levied on debit card users when travelling. According to the Office of National Statistics, UK residents made 72.8 million overseas visits in 2017, with £44.8 billion spent during those visits. So a huge potential "win" for card issuers, because the major UK banks charge their account holders fees on top of the exchange rate, for both purchases and cash withdrawals made abroad. These fees are usually known as the "foreign transaction fee" (a percentage of the purchase/cash amount) and a "bank fee" (often a fixed rate fee).

These fees total between 2.5% and 5% of the purchase or cash withdrawal amount.

Where cash is withdrawn from ATMs abroad by a UK cardholder, the UK "bank fees" are higher than for a card purchase, typically 2% or £1.50 flat fee for cash, as opposed to £0.50 for a purchase.

Here is a full analysis of a sample transaction, recently carried out at a French ATM, using a UK-issued Debit Card:

€250 was requested at the ATM.
Dynamic Currency Conversion was not selected.
The converted amount charged to the customer's current account was just over £223. Based on the tourist exchange rate, it should have been £221.
Cumulative revenue for UK bank: £2.
The bank charged the customer £6.68 as a transaction fee for an International Debit Card Transaction.
Cumulative revenue for UK bank: £8.68.
Finally, the bank charged the customer £1.50 as a fee for withdrawing cash on a debit card internationally.
Cumulative revenue for UK bank: £10.18.

The interchange fee for an international ATM cash withdrawal in France is €0.75 or £0.68. This is the cost recovery payment to the bank operating the ATM, which covers every domestic cost associated with the provision and operation of the ATM, including cash costs, plus the Visa international settlement fees. This payment ensures that an averagely efficient ATM operator does not incur a loss on the transaction.

It is clear that there is a significant difference between the cost of delivery of a cash withdrawal at a French ATM and the price a UK debit cardholder pays a UK bank for the transaction.

Some commentators claim that cash is an expensive payment method. However, it can be seen from the above example that the cost of delivery of cash to the customer at an ATM represents only around 7% of the revenue enjoyed by the card-issuing UK bank.

Why is it necessary to make cash so expensive for bank customers travelling overseas?

Quite simply, to make Debit Card purchases overseas appear an attractive alternative.

Here is an extract from a recent email communication from a UK bank to a customer, advertising the attractiveness of card purchases abroad:

Using your card abroad

With a 2.99% transaction fee and no purchase fees to pay, it only costs an extra £2.99 when you spend £100. Here are some examples of how the fees breakdown.
A day at a water park for four could cost you Entry tickets: £100 **+** Non-sterling transaction fee: £2.99 (2.99%) **+** Non-sterling purchase fee £0.00 =
TOTAL £102.99

Patently, if the UK bank only charged customers for an overseas ATM cash withdrawal on a cost recovery basis – in our example transaction, only £0.68 to withdraw 250 Euros - a debit card payment would look highly unattractive by comparison to a cash payment.

Those who are anti-cash or simply do not understand the dynamics of the payments market continually portray cash as being “incredibly expensive”. The facts do not tally with the operating costs involved. Cash is made expensive by those who profit from high cost payment methods. A relatively low cost competitor – which cash **could** be – does not suit their needs at all.

5 The war on cash and the introduction of contactless cards

According to commentators, “as recently as 2006, more than 60% of all transactions in the UK were made in cash” (The Daily Telegraph 13 August 2018.)

In fact, the UK-based Association of Convenience Stores claimed as recently as 2017 that 76% of all UK convenience store purchases continue to be made using cash (The Local Shop Report 2017-ACS).

Incidentally, the World Bank continues to report that cash is used to make over 80% of payments worldwide. (The Global Findex Database 2017 – World Bank Group).

The continuing use of cash by the public in the UK and elsewhere was –and remains – extremely frustrating for the International Card Schemes and their participant banks.

Visa Inc., in particular, has long considered cash one of its biggest competitors and has been taking steps to chip away at it. Visa’s “War on Cash” was announced a decade ago and getting rid of cash remains a priority for Visa Chief Executive Al Kelly, who took over late in late 2016, especially as cash and cheque transactions continue to grow globally.

“We’re focused on putting cash out of business,” Mr. Kelly said at Visa’s investor day in June 2017, adding that converting cheque and cash to digital and electronic payments is the company’s “number-one growth lever”.

In 2007, no doubt coincidentally, at roughly the same time as Visa was announcing its “War on Cash”, Mark Fisher, a Director of Royal Bank of Scotland Group, was telling the first Board meeting of the UK Payments Council that “I have told my people that I do not want ATMs”. Since ATMs were even then the main delivery mechanism for cash and their significance has since grown in this respect because of the rapid demise of bank branches, Fisher’s declaration can very much be viewed as the commencement of the UK banking community’s efforts to rid the economy of cash.

Visa and their participant banks work closely together on every aspect of their mutual businesses, so it would be no surprise if the “War on Cash” is a shared goal.

A big issue for Visa has been persuading customers to use debit cards for low-ticket purchases.

Part of the problem was the need to require a Personal Identification Number (PIN) to be used in conjunction with an EMV debit card.

EMV gets its name from the credit card issuers that founded this standard: Europay, MasterCard and Visa. They started working on EMV in 1993 and were later joined by Discover, JCB, UnionPay and American Express to form EMV Co. The first version of EMV came out in 1994, although it took a few years before it saw widespread use across Europe.

An EMV card is characterised as a smart card, with an integrated chip that interacts with POS and ATM systems for authentication. An EMV debit card, used with a PIN, provides a high level of security for a payment.

However, it traditionally necessitated inserting the card in a payment terminal to permit the entry of the PIN with the terminal keypad.

Most retailers and their customers did not view this as a worthwhile exercise for a low-ticket payment.

Retailers also had issues with paying merchant interchange fees – often 3% plus - to debit card issuers on low value and often low margin transactions.

The card schemes could adjust their merchant fees for low-ticket purchases but that did not solve the problem of convenience. EMV + PIN was simply not considered convenient.

The answer proved to be contactless cards, whereby the chip on a NFC-enabled (Near Field Communications) card can share data with a point of sale device in a wireless manner, without the need for internet, and using minimal power.

Such cards were first introduced in the United States in 1997. The first significant use of the technology in the UK was by Transport for London (TfL), when they launched the Oyster Contactless Payment Card in 2003.

The first contactless bank debit card appeared in the UK in 2007. The card could simply be tapped on the payment terminal, with no requirement to use a PIN.

Contactless cards were relatively slow to be adopted by the UK public. The tipping point was in 2014, when TfL allowed Visa and MasterCard customers to use their contactless cards on all forms of transport in London. Within one year, TfL were able to report that visitors to the UK from over 70 countries had used their contactless cards for travel in London.

It was also in 2014 that TfL banned the use of cash to pay for fares on London Buses. Although minor cost savings and security were cited by TfL as the reasons for this decision, it is likely this was part of the major deal done with Visa and MasterCard to allow their cards to gradually usurp Oyster.

Interestingly, Oyster was modelled initially on the Octopus Card, which was launched in Hong Kong in 1997. The Octopus Card is used for all transportation in the former colony but can also be used to make purchases in shops and restaurants. Tellingly, some commentators attribute the lack of “progress” towards a cashless society in Hong Kong to the existence of Octopus. Hong Kong residents are content to use Octopus for transport and some other purchases, but also choose to use cash away from their travelling experience.

Oyster could have mirrored the success of Octopus, had TfL not surrendered their card’s advantages to Visa and MasterCard.

In any event, by 2017, Visa were able to report

> “The study of 2,000 consumers in the UK shows that two-thirds (66%) of Brits have used contactless cards to make a payment since they were introduced in September 2007 (The contactless revolution 10 years on. 4 September 2017 – Visa).

The same year, UK Finance, a trade association for the finance sector, published a “Contactless 10 Year Report”. This report’s highlights were 1) that the rush to issue contactless cards had left the UK with two per adult in 2015; by far the highest ratio in Europe and 2) contactless transactions had been negligible in 2013, the year before TfL effectively surrendered control of ticket payments to the Visa and MasterCard contactless products.

There are a number of concerns about contactless cards, including a lack of security (e.g. a PIN is typically only required every 8-10 payments) and the encouragement of the vulnerable to potentially spend more than they can afford. However, there is no doubt that massive marketing support, allied to collaboration between the card schemes and organisations supposed to act in the public interest, such as TfL, has led to contactless gaining wide acceptance with the UK public.

6 The position of cash today

In almost every country in the world, cash in circulation increases each year. Amongst the very few exceptions are markets such as Sweden, where the supply of cash has been manipulated by vested interests. (See Section 7.1 and Appendix B)

Cash is, of course, used as a store of value as well as a payment method. This may well explain the demand for more cash in most markets. In an insecure world, which most people would judge today's to be, the public seem to desire the comfort of holding cash.

There is also the strong possibility that the use of cash for payments is underestimated. Every cash transaction is not recorded and analysed Big Brother–style. Which, of course, is, to many honest and law-abiding citizens, another attractive feature of cash as a payment method.

Many see cash as a counter-balance to the power of the three giant international card schemes: Visa, China Union Pay and MasterCard. Without cash, these three organisations would to all intents and purposes control world payments, acquiring fledgling competitors as these attempt to grow, and increasing the fees they charge retailers and other organisations making use of their services as they see fit. Without competition from cash, the only resistance to the power of the card schemes would have to come from regulators and governments, from whom little meaningful resistance has been evident to date.

Cash has been astonishing resilient. True, it has its supporters but, in essence, there is no significant marketing budget anywhere on the planet deployed to support the role of cash.

In the UK today, cash is the only means of payment used by several million people. That in itself would be a good reason for maintaining access to cash in every community around the UK. However, beyond that relatively small number of people, there are millions more for whom cash is their preferred payment and yet further millions who, whilst they do not use cash as their preferred method, wish to retain the flexibility to use cash as and when they so choose.

No survey ever conducted has demonstrated that a significant percentage of the UK public wish to see their society become cashless.

That cash has prospered for so long, against the determined and often ferocious marketing of competing payment methods, is a testament to the public's enduring preference for fiat currency.

7 Some Lessons from Other Markets

7.1 Sweden

Sweden is the poster child of those who seek to create a cashless future.

A recent report on the Swedish market is attached in Appendix B.

The report highlights

- Manipulation of the whole cost of cash by the subsidiary of the commercial banks appointed by the Central Bank to manage the currency.
- A significant reduction in bank branch numbers.
- The almost complete elimination of remaining bank branches from any role in the deposit or withdrawal of cash, for individuals and businesses.
- A significant reduction in ATM numbers by the bank-owned ATM utility “Bankomat”, a reduction not justified based on usage levels of the ATMs.
- Insufficient innovation to allow ATMs to be adequate substitutes for lost bank branches.

The Swedish Central Bank and government are now considering steps to compel banks to offer comprehensive cash services at their branches, due in the main to concerns that financial inclusion is being threatened by the seeming rush towards a cashless society.

7.2 Switzerland

In contrast to Sweden, cash is the most common method of payment for households in Switzerland.

A recent report from the Swiss Central Bank presents the following highlights (see Appendix B for further information):

- Excellent Payment Choice for Swiss residents and visitors.
- High continued usage of cash: 70% by number, 45% by value of all purchases.
- Good usage of high denomination banknotes.
- Low take up of wearables and Payment Apps, though they are available.

Switzerland is country where there have been no concerted efforts to market new payment methods or, importantly, to limit the use of those which already exist.

It is clear that, without such market manipulation, cash remains a firm choice of the Swiss public. The Swiss National Bank have reported the “… multifaceted use of payment methods by households in Switzerland. The results [of our survey] indicate the well-functioning coexistence of cash and cashless payment methods, as well as a high level of satisfaction with existing payment options on the part of households.", SNB, Press Release, 31 May 2018.

Interestingly, ATMs in Switzerland average 1800 cash withdrawals per month, whereas in Sweden, Bankomat remove ATMs which fail to achieve 5500 cash withdrawals per month. This is surely firm evidence that limiting access to cash is a clear commercial bank strategy in Sweden. Public preferences seem not to be a factor in their strategy.

7.3 Singapore

In Singapore, ATMs average 20,000 cash withdrawals per month, believed to be the busiest in the world. Singapore was also the first country where Uber had to accept cash to be able to trade successfully. Yet Singapore is also a country open to all payment innovations, including wearables. Until recently, there had been no manipulation, simply perfect Payment Choice for the public and businesses. However, this may be changing (see 9.1 below).

7.4 Canada

A 2017 paper based on the results of two surveys by the Bank of Canada, showed the continued popularity of cash in Canada. (Acceptance and use of payments at the point of sale in Canada | Bank of Canada Review, Autumn 2017). Highlights included:

- Cash is almost universally accepted, by 94 per cent of SMBs and 98 per cent of LBs
- Consumers prefer cash for smaller value transactions: 51% of volume and 24% of value

7.5 New Zealand

An annual MasterCard survey, released in April 2017, found over 1000 New Zealanders found cards are increasingly popular as a preferred payment method, with more than 90% choosing cards as their main payment method.

As cashless payment trends grow, the charges to retailers are increasing. As reported by Cash Essentials on 3 July 2018, "Paywave, the country's contactless service provider, charges 1.2% for contactless debit and 1.6% credit card purchases. In comparison, these fees amount to 0.6% in Australia and 0.2% in the UK." The same article revealed that Burger King had dropped acceptance of contactless cards in New Zealand. This is, of course, only possible where alternative payment methods remain conveniently available to the public.

8 Access to Cash in the UK

8.1 ATMs

ATMs are the primary source of cash for the UK public.

The world's first ATM was installed in the UK in 1967.

By December 1998, there were 25,000 ATMs around the country, 19,000 of them located a bank and building society branches. Most such branches had one ATM.

December 1998 was a watershed for the provision of ATMs and access to cash in the UK, because it was in that month that the first Independent ATM Deployer (IAD) ATM was installed. The location was a Spar Convenience Store in Stone Cross in Birmingham. The operator was Euronet, a company which had commenced trading on the European mainland around two years earlier.

UK Finance, in its UK Cash & Cash Machines Report 2017, stated that £194 billion was withdrawn from ATMs in 2016. In the same report, cash withdrawals from all other sources (debit card cashback; withdrawals at bank counters using cards; cheque encashment; and passbooks) amounted to £20 billion.

So, in terms of value of banknotes, 91% of cash is withdrawn from ATMs.

The value of banknotes nominally in circulation in the UK, according to Bank of England figures, reached £69 billion in 2018. The value of coins nominally in circulation is around £12 billion.

However, industry estimates are that 40% of Stirling is held as a store of value, often outside the UK.

In relation to banknotes, assuming 40% of the £69 billion in circulation is held as a store of value, leaves £41.4 billion genuinely circulating. Given that £194 billion was dispensing by ATMs in 2016, it seems that notes in circulation in the UK are on average dispensed by ATMs 5 times per annum.

99.9% of ATMs in the UK are connected through the LINK ATM Network

From LINK's figures, in 2017, around 2.45 Billion cash withdrawals were made at the UK's 70,000 ATMs.

Of those 70,000 ATMs approximately 55,000 were free-to-use. These machines accounted for all but 2% of cash withdrawals made in the UK.

With 55,000 ATMs accounting for 2.4 Billion cash withdrawals, each machine averaged 43,600 cash withdrawals in 2017 or 3,630 transactions per month. The amount dispensed per withdrawal is around £70, meaning that on average a UK free-to-use machine dispenses £254,000 per month.

It should be noted that the average figures referred to include ALL free-to-use ATMs, including those with limited access and those where the site owner replenishes the cash in the machine from his own takings. In both cases, transactions tend to be significantly lower than is the case when an ATM has 24/7 access and is cash-replenished by a Cash-in-Transit contractor.

24/7 access ATMs would be expected to achieve significantly higher levels of cash withdrawals and a corresponding higher average level of cash dispensed. The published LINK statistics do not permit detailed analysis of the performance of subsets of the UK ATM estate.

Given the continuing importance of cash, arguably any community without a 24/7 access ATM cannot be said to enjoy true financial inclusion.

UK free-to-use ATMs enjoy significantly higher usage on average than ATMs in neighbouring countries. Some domestic and international statistics can be found in Appendix A.

Declining or not, the average level of cash withdrawals from UK ATMs is likely to remain well above those in other markets for the foreseeable future.

Notwithstanding reports of a decline in cash use, the fact remains that in 6 of the 12 months of 2017, more cash was withdrawn from LINK ATMs than in 2016 and the single busiest day in the history of the LINK Network in terms of the value of cash dispensed was 23 December 2016.

Interestingly, despite the self-evident continuing strong demand for cash in the UK and the fact that UK ATMs are busy by any comparative European standards, four of the five biggest UK banks (Barclays, Lloyds, HSBC, Royal Bank of Scotland) removed 1900 ATMs between October 2016 and October 2017. This represented around 10% of their total ATM estates, excluding those carrying the RBS brand at Tesco stores.

Much is made of the cost to banks of providing access to cash at ATMs. However, it has to be recalled that banks invested heavily in ATMs from the 1980's onwards to free up branch staff to sell profitable products and services to bank customers. One selling point to persuade customers to use ATMs was that, as with counter service delivered cash, the ATM service would be free.

Now bank branches themselves are being closed, with banks claiming their customers are not using them anymore.

However, as we have demonstrated, it is certainly not the case that the public are no longer using ATMs. It is, of course, hardly credible that this could be the case, with cash in circulation in the UK increasing each year.

Whatever cash is being used for, with other forms of cash withdrawal in the UK accounting for only £20 billion in 2016, it is clear that ATMs are where the UK public are getting nearly all the cash they continue to need to live their lives each day. That is why many argue that convenient access to cash at ATMs must be maintained and improved, in the public interest.

8.2 Cashback

Debit card cashback, often mooted as an alternative solution to ATMs for public cash access, amounted to only £5 billion in 2016 (source: Statista), compared to the £194 billion withdrawn from ATMs.

It is not difficult to understand why cashback is so limited and so obviously lacks the potential to replace ATMs for cash access.

The average Convenience Store in the UK achieves total sales of around £65,000 per month, in notes, coins and cards. An average free-to-use ATM dispenses £254,000 in cash per month. Even if every £ of the cash sales of a Convenience Store was made available for cashback, it could not replace even 25% of the available cash that is lost when an ATM is removed.

Today, for every £1 withdrawn in cashback, around £40 is withdrawn from ATMs.

Cashback has a minor role to play in cash access, now and in the foreseeable future.

9 Steps Needed to Ensure Cash Circulates

To evaluate the steps which need to be taken in the UK, it is necessary to examine the direct and indirect cash use suppression measures that have been utilised elsewhere. Countering such measures is fundamental to maintaining universal convenient access to cash for all citizens. The value of cash in circulation increases in almost every market, including the UK, each year. However, that in itself does not guarantee cash will circulate in a manner convenient for end users, whether that be the public or businesses.

9.1 Suppression

Suppression measures include:

- Monopoly management of currency supply by commercial banks (Sweden)
- Removal of busy ATMs (Finland, Sweden & others)
- Leaving ATMs without cash (India & others)
- Dispensing only high denomination notes from ATMs (Ireland & other Eurozone countries)

- Banning Merchant Replenishment of ATMs (Spain & others)
- Failure to introduce cash recycling ATMs (UK)
- Banning cash use on public transportation (Netherlands & others)
- Bank branches no longer offering teller cash deposit or withdrawal facilities (Sweden and Ireland)
- Banks paying customers to withdraw less from ATMs (Singapore)
- Restaurants being paid to stop accepting cash (United States)
- Rounding up of cash price only, whilst charging ticket prices for card transactions (Ireland)
- Restrictive security regulations in relation to ATM locations (France)
- Refusing Independent ATM Deployers access to domestic ATM networks (France)
- Imposition of penalties on bank customers who use non-bank ATMs (Finland and Hungary)
- Restrictive security measures in terms of cash degradation measures at ATMs (France)
- Manipulation of ATM interchange to render domestic free-to-use transactions uneconomic for non-banks to offer (Portugal and others)
- Prohibiting charging for ATM cash withdrawals (Portugal, Ireland and others)
- Barriers to entry in relation to new ATM operators (UK & others)
- Restrictions on the public's right to hold cash privately (Greece)
- Restrictions on cash use for purchases (Various European markets)
- Competition in Cash-in-Transit restricted by banks' contracting policy (Holland)
- Pooling of ATMs by banks to reduce ATM numbers (Sweden, Finland and Holland)
- Artificially low merchant fees for card transactions (UK –contactless fees)
- Artificially high prices for cash use (UK –TfL non-Oyster and non-contactless London Underground fares)

9.2 Specific measures required to support cash access in the UK

- All businesses which have face-to-face contact with customers should be legally obliged to accept cash for payment, up to a £100.
- Wholesale supply of cash must be guaranteed – one or two suppliers is not enough. Cash suppliers must be independent of UK High Street Banks.
- All elements of UK cash supply and management must be transparent and accessible. The UK's "Cash Services" is even more opaque in its governance and role than the Swedish subsidiary of the commercial banks which controls cash circulation in that country.
- All existing denominations of banknote must be retained and offered through ATMs. Cash has several different uses and both high and low denominations are needed to provide for those uses.
- ATMs must offer customers the opportunity to select the denominations they need. Dispensing only high denomination notes makes cash inconvenient to use for low-ticket purchases.
- Penalties on ATM operators per ATM affected if availability to dispense cash fails to reach agreed levels e.g. 95% on a 24/7 basis. Every 3% of availability represents circa one day outage per month.
- One ATM in a community is not enough. There must be two free-to-use ATMs in every community with more than 2,000 adults resident/visiting. Average use of ATMs is 3 times per month, so 2,000 adults equates to 6,000 cash withdrawals per month. This justifies at least two ATMs, since the average free-to-use ATM in the UK dispenses cash 3,600 times per month. The average ATM in the UK is out-of-service for around 2 days per month, so more than one ATM is required in any community of 2,000 adults or more to give reasonable continuity of service. At least one ATM in every community needs to enjoy 24/7 access.
- More competition in the Cash-in-Transit / Cash Management market must be encouraged, including allowing more such companies being allowed to participate in the Bank of England Note Circulation Scheme.
- Pooling of ATMs by banks must not be permitted. Experience in other markets has demonstrated the model leads to a rapid reduction in ATM numbers which cannot be justified on the basis of ATM usage.
- With banks withdrawing from the provision of ATMs, more IAD entrants must be encouraged. Barriers to entry must be removed, including LINK allowing IADs to be sponsored onto the Network, rather than having to be members in their own right. In

Canada and the US, the barriers to entry are very low. Canada leads the IAD chart, with 65% of their ATMs operated by IADs (source: RBR).

- With bank branches disappearing, depriving personal customers and businesses of the opportunity to deposit and withdraw notes and coins, automated solutions are required. The Universal Cash Deposit Transactions, developed but on the shelf at LINK since 2016, must be mandated by all issuers, to allow cash to be deposit at any enabled ATM in the UK.

- Coins are vital to the smooth circulation of cash. In particular, businesses need coins to enable them to offer change for notes proffered by customers. Automated coin deposit and recycling facilities are needed in every significant community.

- LINK must focus on developing new transaction sets, so that Smart ATMs can fully substitute for bank branches in terms of service provision, including full cash recycling functionality.

- There may well be a role for vanilla bank branches, where the customers of all banks can carry out the financial services transactions they require. However, these should not be a monopoly for one operator. Every significant community will need a Financial Services Hub, probably made up of several multi-function ATMs, and there must be competition between operators for this to be achieved and sustained.

- A review is needed of how cash service provision for the public and businesses will be funded, with interchange and/or direct charging possible solutions.

- Advertising and general marketing of payment methods which claims superiority over cash should be prohibited.

- Price pointing by businesses should be discouraged. It creates issues with change which are unhelpful.

- Preferential discounts for any form of payment should be prohibited by law.

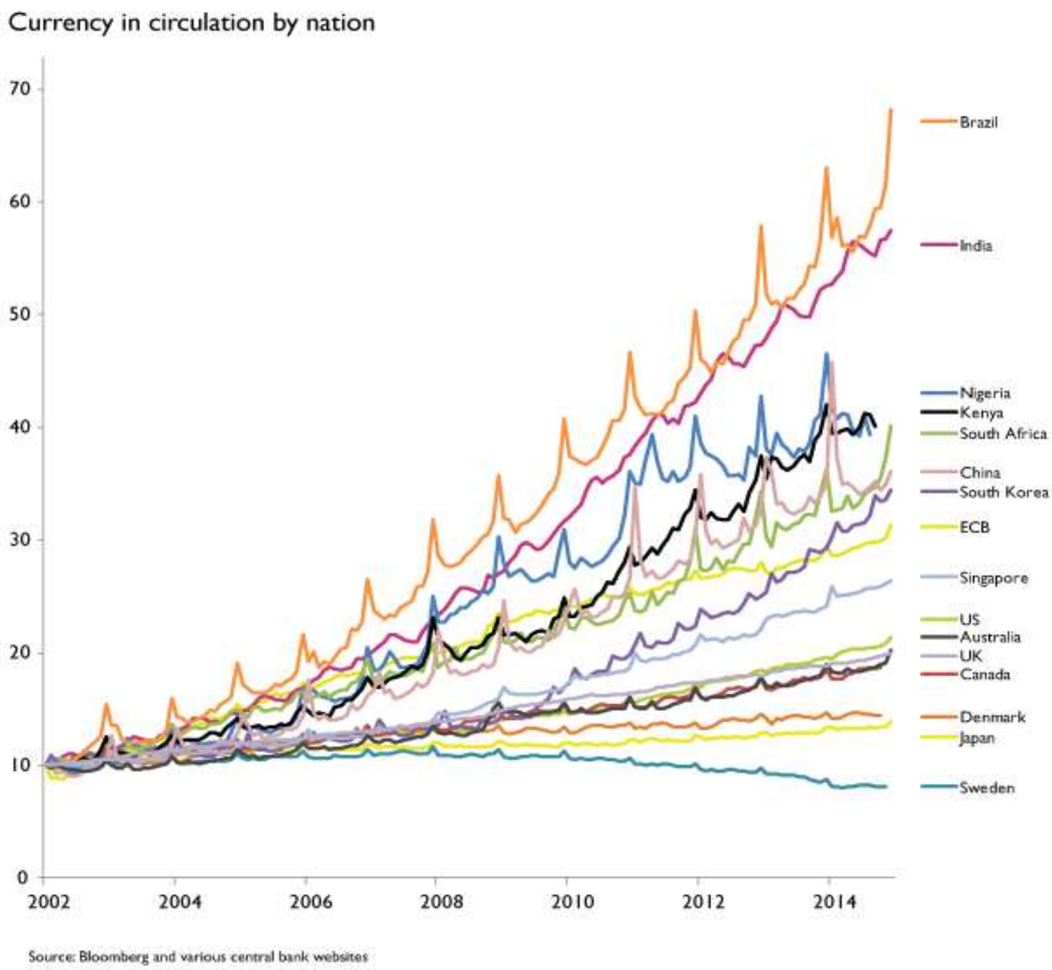
- Full transparency of fees for payments and cash withdrawals, allowing free and educated choice.

10 Conclusions

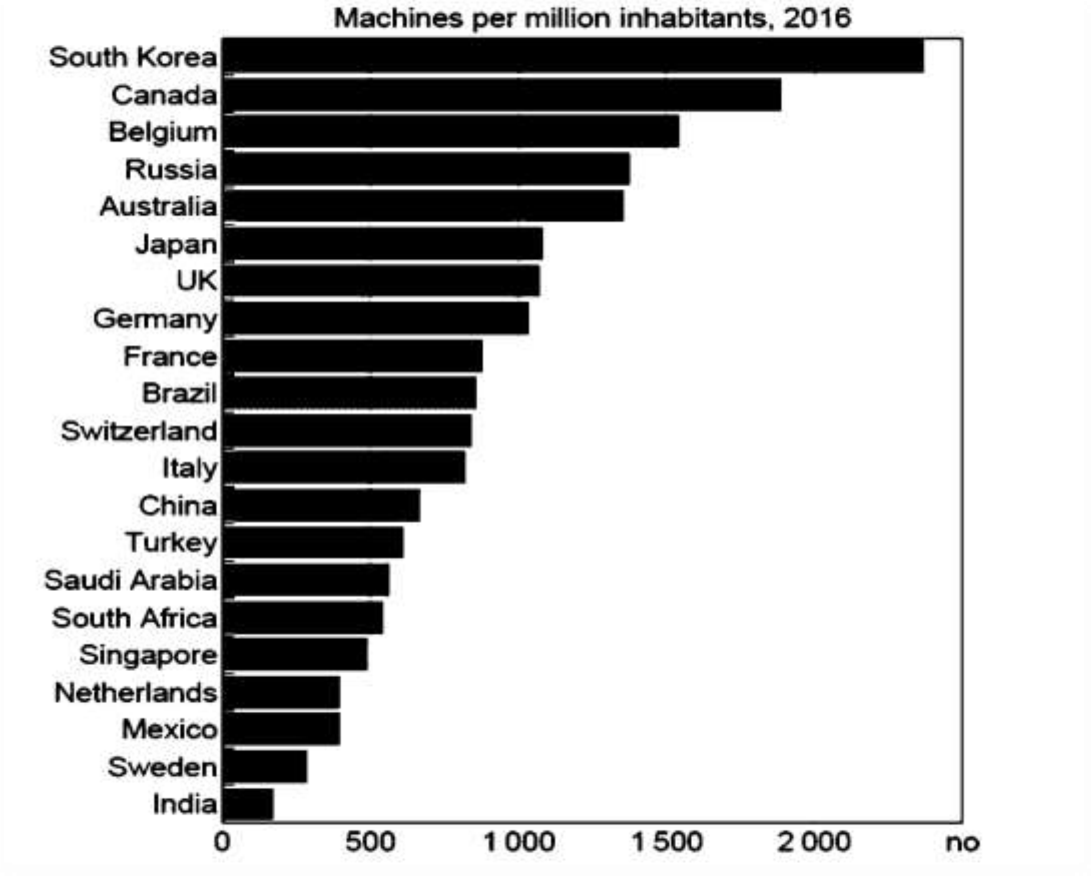
- Cash has been enduringly popular as a payment method, without marketing support.
- No alternative payment method has, to any significant extent, been spontaneously adopted by the UK public
- The introduction of alternative payment methods, supported by significant marketing, has created a UK with significant household debt, a significant percentage of which is on credit cards.
- Cash in circulation in the UK increases each year.
- Cash is a direct method of payment, with immediate settlement
- Cash delivers financial inclusion, strong budget control, avoidance of debt and personal privacy.
- Cash acts as a backup for technical failures, cybercrime, identity theft and hacking.
- The existence of cash avoids payment scheme monopolies and helps encourages competition in pricing.
- The management of cash access cannot be left in the hands of organisations with a strong commercial interest in its decline.
- Direct access to cash, for both the public and businesses, is threatened by closure of bank branches and the removal of bank ATMs.
- A significant number of steps need to be taken to maintain access to cash, notably legal measures to safeguard acceptance and outlaw preferential treatment for alternatives, lowering barriers to entry, encouraging competition and innovation in ATM transactions sets.
- Smart ATMs can be good substitutes for lost bank branches.
- A new independent Cash Circulation and Access Regulator needs to created, reporting to the Bank of England, to safeguard the public interest in every respect.

Appendix A – Domestic and International Statistics

A1 – Currency in circulation by country

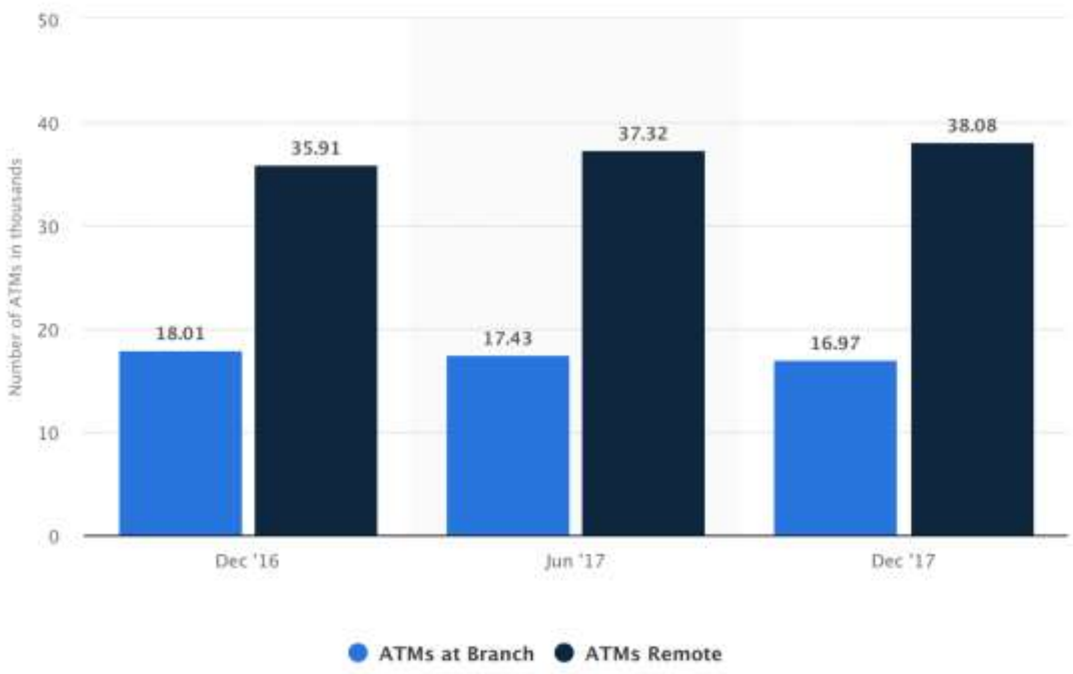


A2 – ATM machine numbers by country



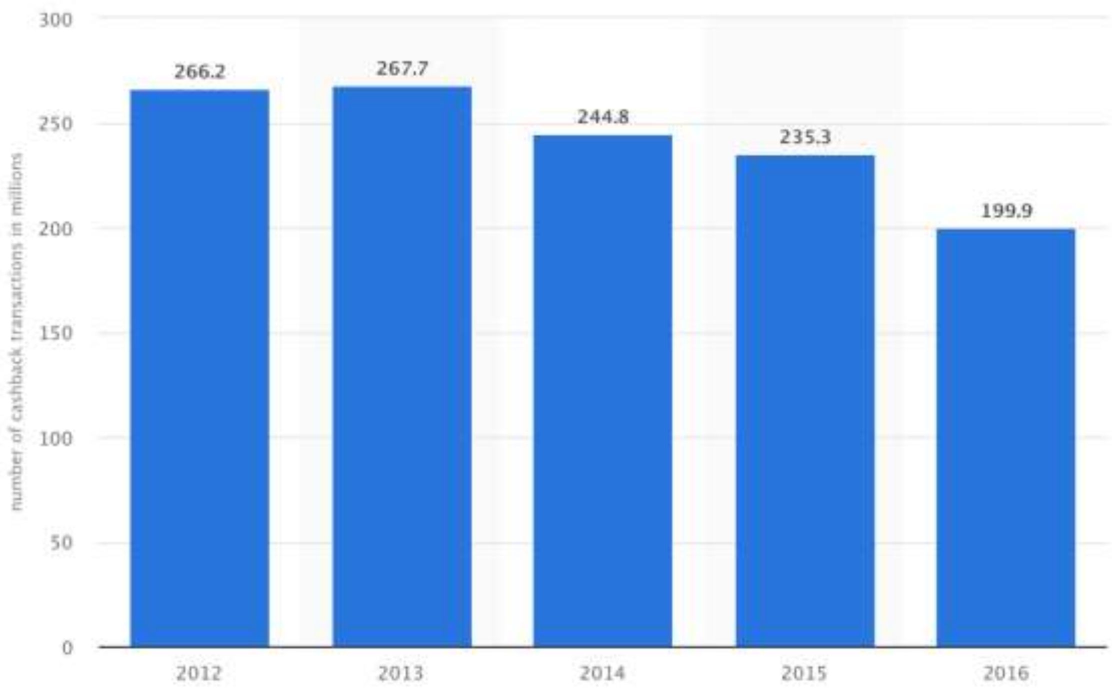
Source: data.worldbank.org

A3 – Number of ATMs in UK, split by branch and off-branch



Source: Statista

A4 – Number of cashback transactions in UK 2012 - 2016



Source: Statista

A5 – Cash status in UK

Source: Bank of England, August 2018

Appendix B –Cash and Card World report on Sweden

Sweden:
A Far from Accidental Journey towards a Cashless Society

1: Introduction & Background

The San Francisco Federal Reserve has recently released a report on cash use in 42 countries reporting that:

"Sweden has garnered attention as the poster child of cashless countries. Since the 1960s, Swedish banks have encouraged digital bank transfers, charged for checks, and invested heavily in card payment systems. The banking system collaborated to create an automated clearing house, Bankgirot, and to launch a popular mobile payments app, Swish. Sweden also has a cultural stigma against cash, with some Swedes associating the payment method with crime. The 2009 Money Laundering and Terrorist Financing Prevention Act required police reports to be filed for large cash transactions, and high-profile cash robberies have contributed to public wariness of cash."[1]

Sweden is certainly the country most often mentioned as having made greatest "progress" towards becoming a cashless society.

The idea of a Swedish Cashless Society has some well-known supporters, amongst them Bjorn Ulvaeus, one "B" in the name of the famous pop group ABBA. "Banknotes and coins are expensive to manage, contribute to crime and are unhygienic. At ABBA the Museum, we decided from the beginning not to accept cash as payment. It has been shown to work very well," says Björn. He goes on, "In today's news, I read the headline 'one in every eight homes affected by break-ins every year'. The article talks about all possible prevention measures except one. It is the easiest to implement and absolutely the most efficient – remove the cash in society. At the moment, nobody has been able to explain to me what the thief is going to do with what he or she stole in the villa or apartment unless it can be turned into cash." [2]

The ABBA Museum is sponsored by MasterCard, so perhaps an anti-cash stance can be regarded as understandable. In any event, Ulvaeus mentions home "break-ins" when elaborating his negative views on cash. There is a public perception that one reason he started his anti-cash campaign is that his own son's apartment in Stockholm was broken into twice.

It is perhaps worth noting rumours which circulated that Björn Ulvaeus had been personally sponsored by the large card schemes to act as an "ambassador" for the anti-cash campaign in Sweden. When these rumours appeared in the media, Björn largely vanished from the scene.

In any event, it is certainly not only the ex-ABBA crooner who is against cash.

Since 2006, the Trade Unions in Sweden have been anti-cash, in a big way. The Unions forced the banning of cash for payment of bus fares, raising concerns about driver safety and declaring that handling cash had become a “work environment problem”. [3] This might be seen as an odd concern to have in relatively untroubled Stockholm, when, for example, buses in a city such as Los Angeles still accept cash for fares.

Ironically, this happened because cash use by bus passengers had actually gone up. The Swedish Government had the year before introduced a flat fare of 20 Krona for any bus journey and the public were very happy to simply present a note of that denomination to meet the price of their fare.

So much for the claim by some that the public are driving the journey towards a cashless Sweden. The public are neither driving the buses, nor the attempted headlong rush towards a cashless future.

Later, we will examine the crime figures from Sweden to confirm, or otherwise, the impact that removing cash from the economy has had on crime.

Some researchers are actually predicting a specific date for the death of cash in Sweden. Sputnik International reported their forecast:

“The smooth transition toward a totally cashless society could be completed already in 2023, when shops are likely to stop accepting cash altogether, a study from the Royal Institute of Technology (KTH) and the Copenhagen School of Economics suggested. After extrapolating the decreasing use of cash against the rising cost of handling cash, researchers Niklas Arvidsson and Jonas Hedman suggested the world's first cashless society may become reality already on March 24, 2023, which they called the most likely critical point.” [4]

One of the researchers has his own views of why cash seems to be dying in Sweden, with Niklas Arvidsson claiming that "At present, 97 percent of traders accept cash, but only 18 percent of consumer payments are made in cash. So it's the consumers that are the driving force”. [12]

We shall examine later the claim made by Niklas Arvidsson that consumers are the driving force in the journey towards a cashless society. That was certainly NOT the case in relation to the use of cash to pay bus fares.

For now, we will simply welcome that he acknowledges that 97% of Swedish traders still accept cash. There are many financial services conferences each year. Frequently at such events, one or other of the highly paid consultants, who seem to criss-cross the planet preaching the merits of a cashless society, will rise to their feet to talk about how difficult it is now to use cash in Sweden. Mr Arvidsson neatly rubbishes that claim.

In addition, the Swedish Riksbank has, as recently as 2016, rejected the claim that the public is driving the country towards a cashless state, as reported by Computer Weekly:

"Björn Segendorf, adviser at Riksbank's financial stability department, told Computer Weekly that the move [to ensure cash services are available to the public] is important in the face of rapid structural change in the Swedish payments market.
[Cashless advances] have been beneficial, but as with every change there are certain groups who experience problems," he said. "We see the supply of cash services being too small, and that is what we want to address with this proposal." [5]

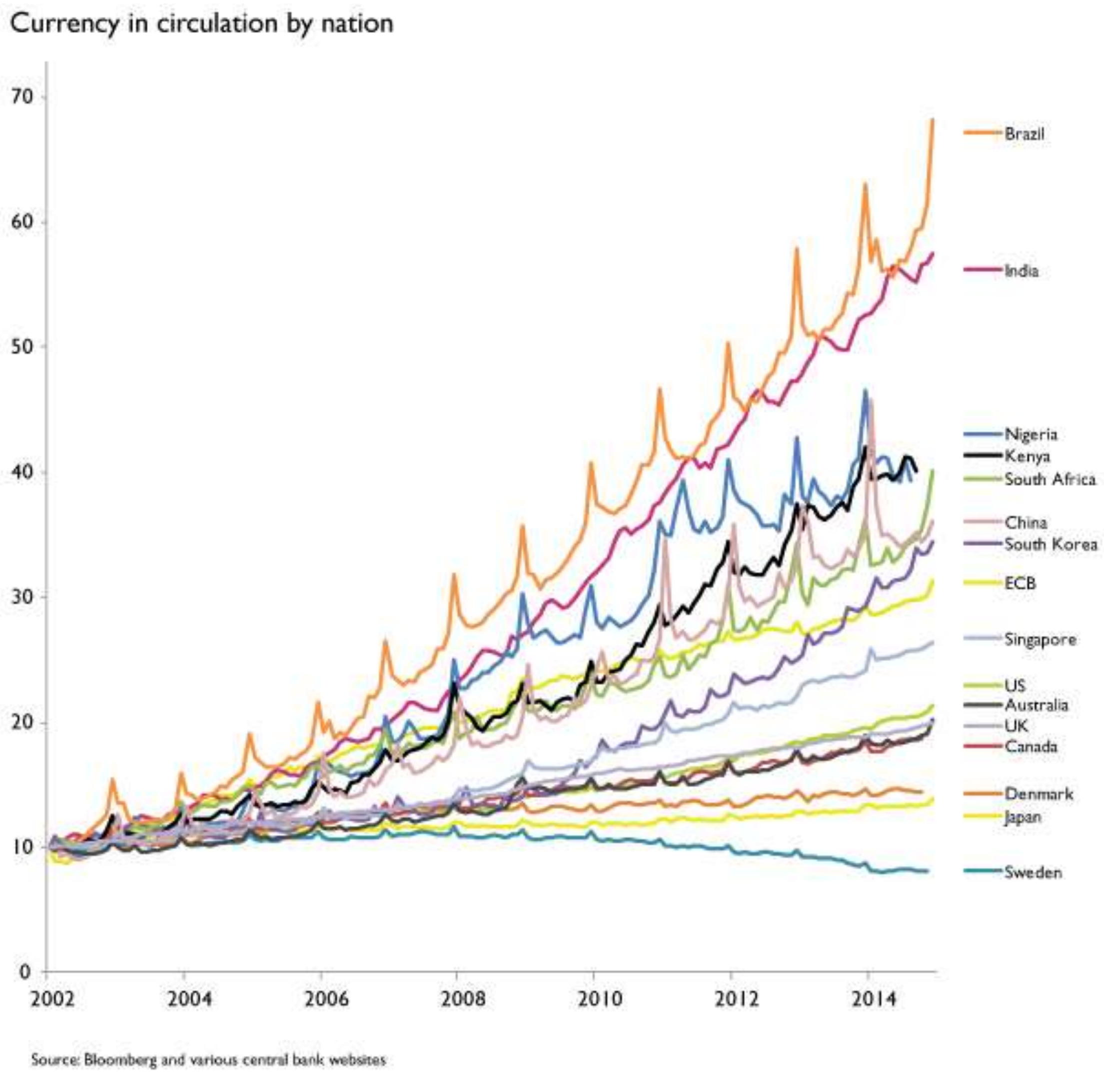
Of course, the Riksbank itself had years before taken several decisions that quickly led to a reduction in public access to cash. Such decisions included delegating cash management to a subsidiary of the commercial banks in 2005 and, later, sanctioning the closure of cash handling at Swedish Post Offices.

It is not clear at this stage whether the intervention of Sweden's Central Bank will block the path leading towards a cashless future. For now, we will simply note that Sweden apparently moving towards becoming the planet's first cashless state is clearly neither accidental, nor simply the outcome of choices made by the Swedish public.

2: Cash in Circulation and Cash Use for Payments

It is an obvious starting point to look at cash in circulation and in doing so compare Sweden with other markets.

The Table below does just that.



Starting at a base year of 2002, it can be seen that until 2008 there was some growth in cash in circulation in Sweden. However, since then there has been a significant and accelerating decline.

Sweden is the only country in the world to see such a pattern. Even in Denmark, a short bridge journey away, and with roughly the same profile in terms of cash use for retail purchases, there has been an increase in the value of cash in circulation.

Why is Sweden unique now, when it wasn't in 2008?

Here is an extract from a speech made in February 2008 by the Swedish Riksbank's Deputy Governor Lars Nyberg:

"I will begin with cash. Cash payments still account for a large proportion of the number of transactions in the Swedish economy. But it comes as no surprise to anyone if I say that they have declined in significance in recent decades. As a per cent of GDP, the share of Swedish banknotes and coins in circulation (M0) has more than halved since the 1950s, from around 10 per cent to just around 3.5 per cent.
In the past fifteen years, however, the trend has levelled off. The use of cash has not declined in the same way as before. M0 in nominal terms has actually increased. If we look at the statistics for ATM withdrawals, we find that the total transaction value has remained fairly constant at around SEK 275 billion a year during the entire 2000s. The number of cash withdrawals has been around 320 million.
… we must probably point out that we Swedes like our cash more than most analysts believed a few years ago." [6]

Do you detect a hint of surprise and, even perhaps a little disappointment in Mr. Nyberg's speech?

The Swedish public had made their choices by 2008 and, clearly, had decided their country had gone far enough towards being cashless. But, of course, that wasn't good enough for those who profit from all things non-cash. They had plans in progress to force their will on the, at that stage, unsuspecting Swedish public.

An absolutely crucial step had already been taken in 2005, with the creation of an entity called BDB Bankernas Depå AB.

Not a memorable brand name for an enterprise but, then again, this company wasn't interested in being noticed by the Swedish public.

Surprisingly, given the continuing importance of cash in the Swedish economy, the Riksbank had agreed to hand over management of the Swedish currency to a consortium of five commercial banks, who set up BDB to be the vehicle for their control of cash in circulation. The Riksbank still arranged for the notes to be printed but, from 2005 onwards, the notes were simply passed to BDB.

Handing control of the nation's currency to banks with a vested interest in managing its decline has to be up there with the strangest Central Bank decisions of all time. The equivalent of a Gamekeeper handing his only gun to a Poacher.

It did not take the Poacher long to start culling the currency.

The message immediately communicated by BDB to its customers, including cash management companies and retailers, was that cash had to become more expensive at the wholesale level.

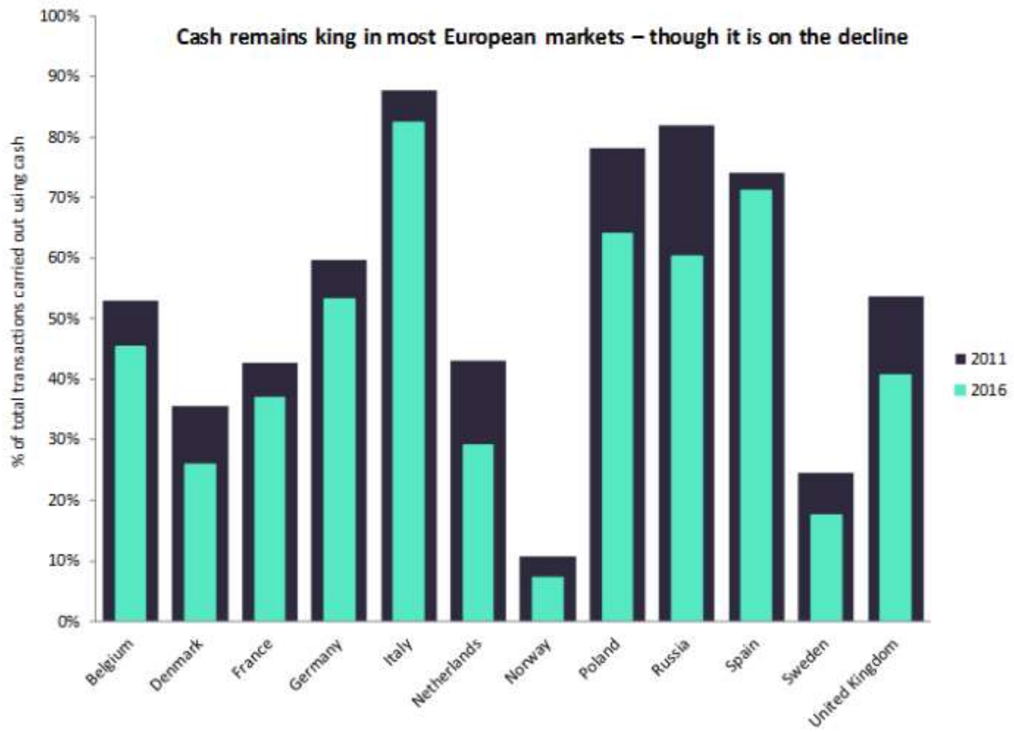
So when Riksbank Deputy Nyberg noted in part of his 2008 speech that "cash is still expensive to transport and manage" [6], he would have known precisely why that was so.

Because the Riksbank had in 2005 handed control of the country's currency lock, stock and barrel to BDB, an entity seemingly created specifically with the intent to make cash more expensive to use.

BDB increased the wholesale costs of Swedish banknotes and, tellingly, made the 1000 krona note so expensive in 2016 that no one was prepared to buy it. So the previously popular note fell out of use completely.

The highest denomination note being deliberately made unavailable to the public of course meant it couldn't be used for purchases AND it also removed the most suitable denomination to use as a store of value. So two birds killed with one shot. What a successful Poacher!

Turning to cash use for payments, the old work horse, born 700 BC, in most countries it is still doing pretty well, as you can see from the table below:



Source: Global Data [7]

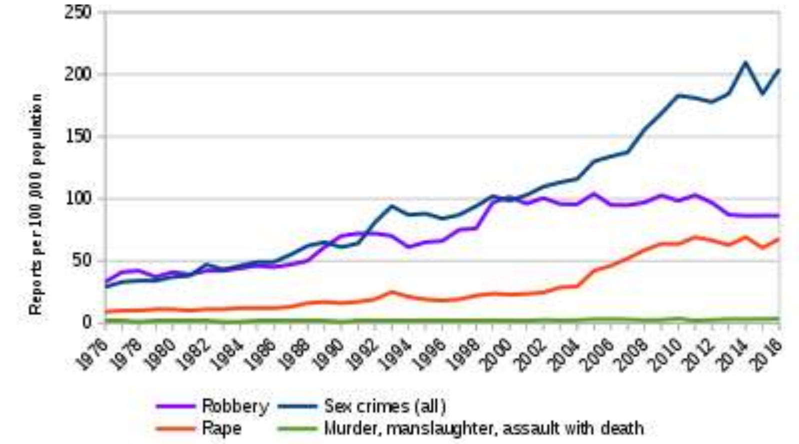
The decline in Sweden has been uniquely marked, to the extent that the transaction value of cash has declined from an estimated SEK 275 Billion in 2008 to less than SEK 150 Billion in 2016. As we have seen, this has been a far from accidental decline and neither has it resulted from free choice exercised by the Swedish public.

3. Crime in Sweden

Cash is often blamed in Sweden as being the primary generator of criminal activity.

However, the fact is that as cash use in Sweden has continued to fall, the overall level of criminal activity has continued to rise. This is illustrated by the graph below.

Digital Ventures October 2017



Source: Swedish National Council for Crime Prevention [13]

Basic theft has decreased slightly, but other crimes, including fraud, have increased significantly, whilst prosecutions have decreased.

As reported by Swedish press,

> "International crime networks are increasing their presence in Sweden in order to further target households for break-ins, according to a new police report.
> The networks are already believed to be responsible for up to half of reported household burglaries in the country, according to the report which public broadcaster SVT had access to, and an increase in the future is expected.
> Police say the thieves are generally from Eastern Europe, the Balkans, Baltic region and South America. Well organized, with good economic resources and a clear structure, they are often controlled remotely from abroad.
> 'They are career criminals, they're not addicts, and they're men. They're between the age of 20 and 40 and consist of an inner core that have known each other for a very long time and have a long career of crime behind them,' Stefan Pettersson, international crime department spokesperson from Swedish Police National Operations Department (Noa), told SVT.
> The thieves primarily target small valuable items that are easy to transport out of the country such as gold jewellery and watches.

> And some of the networks even work together both in Sweden and abroad, including loaning thieves to help cover shortages of personnel.
> Police warn that the problem cannot be solved by Sweden alone, and that more cooperation between countries in the EU is needed to halt the progress of the networks." [8]

The most well-known crime incident in Sweden that featured cash was in 2009. Here is a report from the Guardian Newspaper:

> "Sweden has seen its fair share of daring cash robberies in recent years, from fake bombs used as decoys to the hold-up of luggage handlers at airports. But a raid by a gang that landed from a helicopter on to the roof of a cash depot in Stockholm today and loaded up with bags of money has foxed police.
> The masked gunmen jumped out on to the roof of the G4S cash depot in the Västberga area just after 5am, smashed windows with a sledgehammer and made their way inside. Around 20 staff were in the building at the time of the attack, many believed to have been involved in counting money.
> Once the gang was inside, witnesses reported hearing several loud bangs. The helicopter casually hovered for 15 minutes waiting for the men to load up bags of stolen cash from the roof-top. One witness told Swedish TV: "Two men hoisted themselves down. I saw when they hoisted up money, too."
> Meanwhile, a police Swat team was seen desperately trying to enter the cash depot with a battering ram.
> The police were unable to call out their own helicopters because suspected explosives had been placed at the aircraft hangar in a bag marked "bomb". "We've found what we believe is a live bomb to hinder our response," a police spokesman, Rikard Johansson, said. Small spiked objects had also been spread out on the road near the depot in an attempt to hinder the police from approaching the scene." [9]

Notwithstanding the undoubted drama of the attack on the cash depot in 2009, it is worth noting that cash robberies involving Cash-in-Transit vehicles and ATMs have almost vanished since the introduction of end-to-end ink dye security systems. This was legislated for in 2007. So the attack on the cash depot can perhaps be viewed as the last significant act of criminals involving cash. Since then, as evidenced by the report in The Local, criminal activity seems to have largely migrated to other valuables, such as gold and jewellery.

4. Swedish Banks: Technological Innovation, Branch Services Decline

Swedish banks have been adept at developing and implementing non-cash systems. Most fair-minded observers view such innovations as worthy of praise.

Key among the recent innovations is "BankID". Established in 2003, it is a secure electronic identification system used on the internet and was brought to mobile in 2010.

BankID was originally developed by a consortium of large banks and is used by government authorities, businesses, banks and individuals across the country as the principal system for digital identification, including signing transactions and agreements. Out of 9.6 million Swedes, around 6.5 million use the system for online and mobile banking to online shopping and tax declaration.

"It is pretty unique for all the banks to get together in conjunction with the government, to have a single security system to be used across all your financial services – but also to submit tax returns," said Ross Methven, director of client services at digital banking focused Mapa Research.

"That is unique to the Swedish market and it reduces the barriers for people to adopt mobile banking. The biggest barrier to adoption in most other markets is security concerns, such as when different banks have different security models."

Another example of successful banking collaboration in Sweden is the Swish mobile payment app, launched in late 2012 by Danske Bank, Handelsbanken, Länsförsäkringar Bank, Nordea, SEB and Swedbank. The app – which uses Mobile BankID for authentication – offers real-time payments between bank accounts using mobile phone numbers.

How does this work? Let's say you run into a friend on the street and remember you need to pay back a debt. Open Swish, type in the amount and your friend's mobile phone number (if they are a Swish user) and the payment from your bank account reaches your friend's account in 10 seconds.

Swish has quickly gathered a strong following. Around 5.7 million people have enrolled for the service since its launch, with over 6 million transactions performed every month. In 2014, the app was expanded to cover consumer-to-business payments, including retail. According to Nordea, the service will be extended to e- and m-commerce payments by the end of 2016.

"Swish shows there is collaboration in Sweden and banks can work together to develop innovative systems," said Teigland. "For example, in Denmark they couldn't get the banks together to do something like this. So they ended up with only one bank doing it."

As use of technology has expanded, bank branch numbers have steadily declined.

Industry estimates are that there there are now (February 2017) around 1600 bank branches in Sweden, a decrease of around 250 in the last ten years.

Crucially, around 900 of the 1600 remaining branches are cashless, meaning that, though they may in some cases have an ATM, they do not issue any form of cash over the counter or accept cash deposits.

The ability to deposit cash is vital, especially to small businesses. The advent of cashless branches has severely limited the ability of such businesses to deposit cash. For example, in Malmo, Sweden's third largest city, with a population of over 300,000 and many businesses, only one bank branch accepts cash deposits. Travelling to that branch and queuing to deposit cash costs businesses valuable time, making cash seem a very unattractive proposition.

Similar, small and medium sized businesses, particularly retailers, need coins to be able to offer their customers change when banknotes are presented for payment. In Stockholm, no bank branch offers coins to business customers. The only way a retailer can get coins is through ordering on the internet or by visiting one cash management depot, where rolls of coins are dispensed from a machine. Once again, cash being made unattractive to businesses because banks have deliberately reduced cash-related services to their customers.

5. ATM Numbers in Sweden

The banks in Sweden have been secretive about ATM numbers in the country. Perhaps this is based on the theory that, if you don't ever tell anyone how many ATMs there are, no one is ever going to know precisely the extent to which the number is decreasing.

Be that as it may, industry sources in Sweden estimate that in 2010, the countries five major banks had around 3000 ATMs. This represents around one ATM per 3000 Swedish residents. The comparable figure in the UK is one ATM per 1000 UK residents.

In 2010, the five major Swedish banks decided to pool their ATMs in a wholly bank-owned company called Bankomat. By 2012, Bankomat was operating all of the ATMs previously operated by the five banks. Bankomat charges its owner banks fees to cover the cost of operating the ATMs, with the objective of the company breaking-even. The primary rationale for the arrangement is that Bankomat will keep fees imposed on its owner banks to a minimum and aim to reduce them each year.

Since Bankomat began operating ATMs in earnest in 2012, one of its main tools for reducing fees levied on its owner banks has been the deinstallation of ATMs. By October 2017, Bankomat only operated 1700 ATMs. Industry sources believe that by 2222, Bankomat will only operate ATMs at 600 locations, though some locations may have more than one ATM.

Industry sources believe that Bankomat has a standard policy of removing ATMs that fail to achieve 5500 cash withdrawals per month, though this can be varied if, for example, the ATM is the last one in town.

5500 cash withdrawals per month is an astonishingly high bar for ATM performance. Here are some international comparisons that highlight this:

- France: 56,000 ATMs, averaging 2200 Cash Withdrawals per Month per ATM;
- Germany: 58,000 ATMs, averaging 2500 Cash Withdrawals per Month per ATM.
- Poland: 23,000 ATMs, averaging 2600 Cash Withdrawals per Month per ATM.
- Switzerland: 7000 ATMs, averaging 1800 Cash Withdrawals per Month per ATM.
- UK: 70,000 ATMs, averaging 3500 Cash Withdrawals per Month per ATM.

Source: ATM Industry Association

It seems clear from international comparisons that if Bankomats criteria for ATM removal was applied in any of the five European markets illustrated, tens of thousands of ATMs would be likely to be subject to removal. In fact, Switzerland would probably be left with only a handful of ATMs.

It is obvious that Bankomat are not removing ATMs because the public are failing to use them. Swedish ATMs are used more heavily on average than in many European markets. The only credible reason the ATMs are being removed is to reduce Bankomats operational costs, so that they can in turn reduce the requests for funding made to their owner banks.

It is clear that no blame attaches to the management of Bankomat. The actions they take are forced on them by the continuing requirement to drive down the fees paid by the banks which own the company.

It is worth noting that the “pooled” ATM model implemented at Bankomat is becoming increasingly prevalent around Europe. From the Swedish experience, it seems likely this will lead to a diminution of ATM numbers and convenient access to cash in any market in which it is implemented.

Patently, having ATMs in only 600 locations in Sweden, which is the forecast position by 2022, is not going to provide the Swedish public with convenient local access to cash. For most Swedes, it is probable that getting cash is going require a special journey to some central point in significant conurbations or Shopping Malls. The necessity for special journeys is hardly likely to make cash more popular with the Swedish public and businesses.

Essentially, the Swedish banks who own Bankomat do not seem to want ATMs – or cash.

This anti-ATM, anti-cash stance has apparently cascaded from Bank Boardrooms right down to branch staff.

As an example, in a town in Sweden with five bank branches, only one is likely to be allocated an ATM by Bankomat – and, according to industry sources, the staff at the branch that is given the ATM will NOT want it on their site. Bank staff have been encouraged to believe that ATMs and cash are not worth having, bringing with them “hassle” and the need for extra work to be done. For people with such a mentality, what is there to like about ATMs and cash?

All of this leads to the conclusion that there is going to be little investment in ATMs in Sweden going forward. ATM innovation, including note and coin deposit and recycling, which could have made cash more convenient to use and circulate for both the public and businesses in the absence of bank branches, is unlikely to be introduced to the extent required to meet the nations needs.

In short, the future is bleak for both ATMs and cash in Sweden, unless the government intervenes to force banks to provide decent cash services.

Government intervention looked unlikely, until very recently. However the following article from Bloomberg, published on 18 February 2018, holds out some hope of government action (10)

““No cash accepted” signs are becoming an increasingly common sight in shops and eateries across Sweden as payments go digital and mobile.

But the pace at which cash is vanishing has authorities worried. A broad review of central bank legislation that’s under way is now taking a special look at the situation, with an interim report due as early as this Summer [2018].

"If this development with cash disappearing happens too fast, it can be difficult to maintain the infrastructure" for handling cash, said Mats Dillen, the head of the parliamentary review. He declined to give more details on the types of proposals that could be included in the report.

Sweden is widely regarded as the most cashless society on the planet. Most of the country's bank branches have stopped handling cash; many shops, museums and restaurants now only accept plastic or mobile payments. But there's a downside, since many people, in particular the elderly, don't have access to the digital society.

Riksbank Governor Stefan Ingves has said Sweden should consider forcing banks to provide cash to customers. In its annual report on Monday, the Riksbank said the question is what role it should play in a future with even fewer cash payments.

"The Riksbank is carefully analyzing this development," Ingves said. "Overall, I think we are facing structural changes in areas that have previously been stable. This is a development which will affect all the Riksbank's departments and we will need to make strategic decisions regarding the way forward.""

"One may get into a negative spiral which can threaten the cash infrastructure," Dillen said. "It's those types of issues we are looking more closely at."

So it seems that the Swedish authorities have at last realised that going cashless may well not be in the interests of the Swedish public.

Could this result in the reversal of actions taken to hasten cashlessness?

Needless to say, developments will be watched with great interest.

6. Summary

- Swedish banks have been investing in non-cash payment solutions since the early 1960s, before the first ATM was installed in the country.
- Sweden is the one of the few markets in the world where the value of cash in circulation is falling.
- The decline in cash use cannot be said to be solely as a result of the Swedish public exercising free choice. The example of the increasing use of cash on buses immediately prior to that use being banned is a perfect illustration of choice being removed.
- Delegation by the Riksbank of the management and distribution of cash to a subsidiary of the commercial banks has led to cash being more expensive and less readily available.
- Lack of cash processing services at bank branches and a reducing number of ATMs have made cash inconvenient to use for the public and businesses – and therefore less popular.
- Pooling of ATMs by banks, as implemented in Sweden, is unlikely to lead to appropriate funding of innovation.
- The criteria for removing ATMs makes it inevitable that there will be fewer and fewer ATMs going forward.
- Only government intervention in the public interest can halt the journey towards a cashless future. As of February 2018, such intervention looks possible.

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Appendix C – REPORT FROM SWISS NATIONAL BANK

In the autumn of 2017, the Swiss National Bank (SNB) conducted a survey on payment methods for the first time. As part of the survey, around 2,000 people resident in Switzerland were interviewed to obtain information on their payment behaviour generally and their use of cash in particular.

Key findings of their SURVEY:

> **Cash is the most common method of payment for households in Switzerland. Of the payments recorded, 70% were processed with cash**. When measured in terms of value, by contrast, cash accounted for just 45% of the recorded expenditure. This difference is attributable to the fact that cash is a particularly popular payment method for small amounts. That said, cash is also often used when larger sums are involved: 35% of non-recurring payments that involve amounts of more than CHF 1,000 are settled with cash.
>
> **When executing payments, households resort to both small and large denomination banknotes**. In particular, the 10-franc note and the 20-franc note are used very frequently in payments, but the two largest denominations are also widespread in Switzerland. 40% of respondents indicated that they had at least one 1000-franc note in their possession within the last two years, a figure that rises to 66% with respect to the 200-franc note. The two highest- value banknotes are first and foremost used for expensive, significant purchases of an infrequent nature – such as the purchase of cars, electronic goods and furniture – as well as for paying bills at post office counters.
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> **In addition to its function as a method of payment, cash also plays an important role for households in Switzerland as a store of value.** Cash is kept for this purpose by 37% of Swiss households. The majority of these respondents say they hold less than CHF 1,000 as a store of value, whereby the 100-franc note is most commonly held. Immediacy of availability is cited as a key motive for the use of cash as a store of value.

In their summary of the report's findings, the Swiss National Bank were proud to say that "Overall, the survey paints a picture of multifaceted use of payment methods by households in Switzerland. The results indicate the well-functioning coexistence of cash and cashless payment methods, as well as a high level of satisfaction with existing payment options on the part of households.", SNB, Press Release, 31 May 2018

The full report on the 2017 payment methods survey is available at www.snb.ch.

Appendix D – AUTHOR BIOS

Ron Delnevo

Ron Delnevo joined Euronet UK, the company which installed the first independent ATM in the UK in 1998, in January 1999. Ron became Managing Director in June 2000, led a successful MBO in 2003 and participated in a trade sale to Cardtronics in 2005. He went on to lead the company – then branded "Bank Machine" - until 2012. During that time, Bank Machine developed through continuous innovation, enjoyed double digit annual revenue growth and experienced growing profitability.

Ron served on every LINK committee and also for two terms as an elected director of the UK Payments Council.

Since leaving Bank Machine, Ron has dedicated himself to helping to ensure access to cash is improved everywhere. He now serves as European Director of the ATM Industry Association, Chairman of Cash & Card World and works with CaLP, the Cash Learning Partnership, with a view to extending the use of cash in humanitarian assistance worldwide. Ron is recognised as a thought leader on payment choice and is invited to speak on the subject at conferences throughout the World.

In the 1990s, Ron ran his own consultancy business, specialising in retail and franchising. In the 1980s, Ron was a Director of Tie Rack PLC, following on from a 6-year stint as a senior commercial manager of the British Airports Authority [now BAA PLC], with special responsibility for retail innovation.

Ron Delnevo graduated with a Bachelor of Arts in Business Organisation from Heriot Watt University in Edinburgh and completed a post grad in Personnel Management at Napier University.

Ron loves sports, especially his beloved Heart of Midlothian Football Club in Edinburgh. He also serves as a Trustee of his local Citizens Advice charity in the UK.

Debbie Smyth

Debbie Smyth joined the ATM industry in 1989, working at FTS, a founder member of the LINK ATM network, heavily involved in the LINK's incorporation of the banks' ATM networks.

In 2000, Debbie moved to Euronet, the first independent ATM operator in the UK. She participated in the successful MBO in 2003, and the following sale to Cardtronics in 2005. She continued in her role of Operations Director at Bank Machine until 2013.

Debbie is now a Consultant, providing services to the ATM and payments industry, including banks, ATM operators, payment schemes and ATM manufacturers. Debbie is actively involved in work at the ATM Industry Association, supporting payment choice, ATM innovation and financial inclusion. She is heavily involved in monitoring and analysing regulatory and technical changes.

Debbie graduated with a BA in Russian from Durham University and MA in Information Science from Sheffield University, and spent her early years of employment conducting research for members of the public at the British Library, followed by the design of systems for public libraries.

Debbie is a keen walker, traveller and photographer, sharing her explorations through an active travel blog.