Institute and Faculty of Actuaries

Cash and digital payments in the new economy

IFoA response to HM Treasury

5 June 2018

About the Institute and Faculty of Actuaries

The Institute and Faculty of Actuaries is the chartered professional body for actuaries in the United Kingdom. A rigorous examination system is supported by a programme of continuous professional development and a professional code of conduct supports high standards, reflecting the significant role of the Profession in society.

Actuaries' training is founded on mathematical and statistical techniques used in insurance, pension fund management and investment and then builds the management skills associated with the application of these techniques. The training includes the derivation and application of 'mortality tables' used to assess probabilities of death or survival. It also includes the financial mathematics of interest and risk associated with different investment vehicles – from simple deposits through to complex stock market derivatives.

Actuaries provide commercial, financial and prudential advice on the management of a business' assets and liabilities, especially where long term management and planning are critical to the success of any business venture. A majority of actuaries work for insurance companies or pension funds – either as their direct employees or in firms which undertake work on a consultancy basis – but they also advise individuals and offer comment on social and public interest issues. Members of the profession have a statutory role in the supervision of pension funds and life insurance companies as well as a statutory role to provide actuarial opinions for managing agents at Lloyd's.

Institute and Faculty of Actuaries

Cash and Digital Payments Call for Evidence
Debt and Reserves Management
1 Blue, HM Treasury
1 Horse Guards Road
London SW1A 2HQ

5 June 2018

Dear HM Treasury

HM Treasury call for evidence on Cash and digital payments in the new economy

The Institute and Faculty of Actuaries (IFoA) welcomes HM Treasury's call for evidence on cash and digital payments in the new economy.

Under its Royal Charter, the IFoA has a duty to advance actuarial science in the public interest. We support a wide range of research and knowledge exchange activities with members, external stakeholders and international research communities.

The IFoA's volunteer working party on "Cashless Society - Benefits, Risks and Issues" ("the working party") has taken a global perspective on the issues raised in the call for evidence.

The response is set out in two sections:

- The General Comments section focuses on public policy principles which are salient to the call for evidence.
- The following section includes responses to those questions on which the IFoA Working Party has carried out sufficient research to make a contribution. We have not attempted to answer every question in HMT's document, but we signpost sections of the IFoA Working Party's paper[1] and addendum[2] presented in January and May 2018 which are relevant to specific questions in the call for evidence.

[1] A Cashless Society-Benefits, Risks and Issues

[2] https://www.actuaries.org.uk/documents/cashless-society-world-motion-2017-addendum

Beijing 14F China World Office 1 · 1 Jianwai Avenue · Beijing · China 100004 · Tel: +86 (10) 6535 0248
Edinburgh Level 2 · Exchange Crescent · 7 Conference Square · Edinburgh · EH3 8RA · Tel: +44 (0) 131 240 1300 · Fax: +44 (0) 131 240 1313
Hong Kong 1803 Tower One · Lippo Centre · 89 Queensway · Hong Kong · Tel: +852 2147 9418
London (registered office) 7th Floor · Holborn Gate · 326-330 High Holborn · London · WC1V 7PP · Tel: +44 (0) 20 7632 2100 · Fax: +44 (0) 20 7632 2111
Oxford 1st Floor · Park Central · 40/41 Park End Street · Oxford · OX1 1JD · Tel: +44 (0) 1865 268 200 · Fax: +44 (0) 1865 268 211
Singapore 163 Tras Street · #07-05 Lian Huat Building · Singapore 079024 · Tel: + 65 6717 2955
www.actuaries.org.uk

Section 1: General Comments

The working party's research had a global perspective and took account of the different concerns of five stakeholder groups: the public (including low income consumers), governments and central banks, non-financial businesses, financial businesses, and payment providers.

The prospect of using less cash to any degree (de-cashing), rather than becoming cashless, is a fundamental economic and societal change that poses substantial risks and issues. Based on the working party's research, we suggest that stakeholder management lies at the core of any successful future transition from cash to digital payments.

The IFoA urges the Government to take the lead in managing the risks of the transition, in order to facilitate the process of using less cash in society - even if cash will still have some future role.

International Perspective

There is a complex range of factors driving the transition to a cashless or "less cash" society in countries around the world.

Regional analysis exposes key differences in the drivers for a cashless society. In western countries, convenience appears to be the main force driving a natural evolution towards a cashless system, supported by lower transaction costs that make contactless payments more competitive with cash transactions. There seems to be little general political interest in removing cash altogether, other than for high denomination notes in the fight against money laundering, terrorism, tax evasion and corruption. The transition also appears to be happening by stealth, without active government intervention in satisfactory transition management.

Meanwhile, Africa has become a mobile payments innovation powerhouse, out of a necessity to equip the unbanked with access to a payments infrastructure.

In Asia, India's latest demonetisation exercise was aimed at restructuring the economy for a sustainable future, seeking to reduce corruption and improve tax collection. In China and elsewhere in Asia, the digital economy and associated investments in infrastructure and payment systems, designed with financial inclusion in mind, drive cashless transactions. Innovations in Africa and Asia are now being exported to the western world.

Public policy should be adapted to influence the success of the transition

Our review of international practice brings out examples of government policies which we believe are relevant for the UK:

- Most countries in Africa and the Asia Pacific region have understood the importance of engaging with stakeholders, and of addressing the cost of electronic transactions, as critical success factors.

- Governments in the Asia Pacific region are driving readiness towards the digital economy through structural investments to enable interoperability between networks and systems. Australia, Malaysia, India and China are key examples to consider.

- A buoyant, open payments marketplace has been key to the extent of innovation in Kenya over the past 10 years.

- A new trend is emerging, with a number of countries across continents exploring the possibility of a Central Bank Digital Currency, a topic on which the IFoA's Working Party is now focusing.

Financial Exclusion

A less-cash economy can either increase or decrease financial exclusion.

There is a risk that de-cashing could increase financial exclusion if the interests of vulnerable groups of society are overlooked. For example, limited access to bank accounts or the internet more broadly forces parts of society to use cash, which increasingly prevents access to services and results in further economic exclusion. Recent high street bank branch closures in the UK led to passionate reactions as they raised the conflict between the ongoing cost of maintaining access to cash and the negative impact on vulnerable groups.

By contrast, in developing economies technology can be an enabler for financial inclusion, for example the M-Pesa mobile payment system in Kenya.

Section 2: Responses to call for evidence questions

Question 1: How do you expect digital payment methods, and the adoption of these by merchants and consumers, to change over the next 10 years? What are the drivers of this?

The transition towards a digital economy with broad access to smartphones and other associated technologies is driving the shift towards electronic transactions. The pattern of how digital payments will develop over the next few years will be driven by stakeholders' attitudes towards transitioning to a cashless or "less cash" society.

For example, in the UK, the public is driven by convenience towards using less cash, however there is no evidence of a desire to transition to a fully cashless society.

The Government may have a different viewpoint as there are significant benefits for it to operate within a cashless society.

Non-financial businesses find cash expensive to handle, although this is a necessity in some communities less served by either bank branches or internet networks. Some businesses will enjoy cash's powers of concealment of activities.

Financial businesses and payment providers would support the transition away from cash.

These different stakeholder attitudes are assessed in the SWOT analysis of the paper (reproduced in the Appendix below).

Please see highlighted links to the Paper below.

Document	Section	Relevance
Interim paper	3: Benefits from a cashless society	Costs of handling cash, collection and transaction values
Interim paper	6: Risks and issues	Change leadership, Digital economy readiness, Lack of competition on the payments marketplace
Interim paper	7: SWOT analysis	Diverging stakeholder interests
Interim paper	8.1: The Cashless World in Motion	Attitudes towards cash and ecosystem challenges in USA (8.1.2, 8.1.2.5), in the UK (8.1.4.1) caution in Germany and Europe (8.1.3)
Interim paper	8.2, 8.3: the Cashless World in Motion	Africa & middle East, Asia Pacific
Addendum	3: the Cashless World in Motion	Digital payments attitudes survey- North America (3.2), USA (3.4)
Addendum	4: the Cashless World in Motion	Asia Pacific general trends (4.1), regional news (4.2) Australia (4.3)

Question 3: Are there international examples of countries supporting the adoption of digital payments that the government should look to?

The need to improve payment systems has brought inspiring examples of change leadership throughout Africa, the Middle East and Asia.

The use of mobile bank vans in remote regions of the UK would be considered outmoded to those living in remote regions of Kenya who confidently use M-Pesa, which has revolutionised commerce and the economy where banks and internet access are rare.

The Asian region has adopted an infrastructure-based transition model towards a digital economy that underpins the adoption of digital payments. Improved access to services and the reduction of transaction charges through a competitive ecosystem are both cited throughout the region as objectives for this approach, and these are also relevant for the UK.

Sweden and Australia are often cited as key role models in the decline of use of cash. However, the lack of a government led transition programme has caused the governor of the Swedish Central Bank to question if the process has gone ahead too rapidly.

The Central Bank has proposed that there should be a legal requirement for banks to maintain a cash service. The problem in Sweden is that the de-cashing process has moved ahead very rapidly and not enough attention has been given to those sections of society who have not been able to join the momentum. It is for this reason that we recommend that continued de-cashing in the UK is accompanied by government organisation and transition planning in order not to leave some sections of our community behind.

Please see highlighted links to the Paper below.

Document	Section	Relevance
Interim paper	8.1.1: The Cashless World in Motion	Sweden case study
Interim paper	8.1: The Cashless World in Motion	Toll roads payment automation USA (8.1.2.3).
Interim paper	8.2: The Cashless World in Motion	Africa and the Middle East: a mobile innovation powerhouse, inc UAE, Ghana, Rwanda, 8.2.3 Spotlight on Nigeria, 8.2.4/ 8.2.5: Kenya case study,
Interim paper	8.3: The Cashless World in Motion	Asia Pacific: Key topics (8.3.1), The Asian Story in 2017 (8.3.2), Australia (8.3.3) New Payment Platform and Cashless welfare card, China case study (8.3.4), India case study (8.3.5)
Addendum	2 The Cashless World in Motion	Africa & the Middle East Regional news (2.2), Kenya (2.3)
Addendum	4 the Cashless World in Motion	Asia pacific Regional news inc Singapore (4.2), Australia (4.3)

Singapore payments roadmap: enabling the future of payments	[External reference]()	A report on electronic payments in Singapore, an important part of the nation's overall fintech ecosystem.

Question 4: Why does the cost of processing payments differ between cash and digital payments? How is it changing? And do you expect the change to continue?

The drive towards lower usage of cash in the UK will almost certainly make the unit cost of handling cash rise. Banks are reducing the number of their branches and whilst LINK argues that they will not reduce the number of their ATMs they say they will halt the growth in numbers. However, it is likely that banks will be forced to increase the fees they pay to ATM providers whose unit costs may well rise. It is therefore likely that banks may well charge customers for handling their own cash which will disadvantage even further those who are already technologically naïve.

International developments, in Africa and Asia in particular, demonstrate how new ecosystem entrants such as Fintech innovators are disrupting the traditional payments business model: transaction fees are shifting to new operators, possibly remote from the local economy that would have supported cash handling services.

Please see the highlighted references to the Paper linked below.

Document	Section	Relevance
Interim paper	3.1-3.3: benefits of a cashless society	The cost of cash vs card payments
Interim paper	8.1.1: the Cashless World in Motion	Sweden case study
Interim paper	6: Risks and issues	Economics of money, lack of competition on the payments market, politics vs innovation,
Interim paper	7.5-7.6: SWOT analysis	Diverging stakeholder interests: banks and the payments ecosystem

Question 5: Who uses cash as their main form of payment and why?

Cash is still widely used in the UK although the shift towards electronic payment is rapid. There are many members of the public who enjoy the option of using cash and without government intervention, this is likely to remain although perhaps in smaller numbers. Examples where some appetite for using cash is likely to continue include donations to charity street collections, buskers and beggars, tipping in restaurants and pocket money for children, although Section 3 of the working party's Interim Paper does cover how some recipients are coping with this as their communities use less cash.

There is a significant body of “unbanked”, technically naïve or sceptical people who depend upon cash. However, there is also a significant body of people who use cash for illicit means such as tax evasion, crime, benefit fraud, illegal immigration and modern-day slavery.

Please see the links to the Paper which are highlighted below.

Document	Section	Relevance
Interim paper	3: Benefits of a cashless society	3.7 Illegal immigration, crime and benefit fraud
Interim paper	7.2- 7.3: SWOT analysis	Diverging stakeholder interests: The Public, non-financial businesses

Question 6: How does cash usage and need vary by demographics, geography, and socio-economic status?

Within the UK, there is a reliance on the use of cash by people unable or unwilling to adopt electronic payment methods. This includes the elderly or vulnerable but it may also include those for whom smart-phone and internet access is unavailable.

The worry remains that without direct government intervention these people will become even more disadvantaged, if the cost of handling cash increases to the extent that they will be charged for handling their own money and access to their cash becomes less available.

Examples such as M-Pesa, as mentioned above, could help to resolve these issues.

Please see sections from our Paper on Financial Exclusion and trends around the world highlighted below.

Document	Section	Relevance
Interim paper	5.4: Financial exclusion	Financial Exclusion and the Effect of Technology and De-Cashing for Countries in the advanced Stage.
Interim paper	8.1: The Cashless World in Motion	Trends and attitudes towards cash and ecosystem challenges in USA (8.1.2, 8.1.2.5), in the UK (8.1.4.1) caution in Germany and Europe (8.1.3).
Addendum	3 The Cashless World in Motion	Attitudes to digital payments surveys, North America, USA.

Question 16: Are there other international examples of countries managing decline in demand for cash that the government should look to? Should the UK follow a similar pathway as other countries in modernising the currency?

The IFoA would recommend direct Government transition management towards reduced use of cash.

Sweden and South Korea may offer some ground for developing schemes to modernise the use of currency in the UK (although as noted in question 3, Sweden may have progressed a little too quickly). South Korea is piloting a system to replace small coins by the paying of “change” onto a reloadable debit card.

Please see the links to our Paper highlighted below.

Document	Section	Relevance
Interim paper	8.1.1: The Cashless World in Motion	Sweden case study
Interim paper	8.3.2: The Cashless World in Motion	South Korea coinless pilot
Interim paper	8.3.3: The Cashless World in Motion	Australia: New Payment Platform and the Cashless welfare card

Question 18: What further action should the government take to reduce tax evasion, hidden economy, and money laundering associated with cash to ensure a fair and level-playing field for tax compliant businesses?

The UK tax system is complicated and allows for abuse either through evasion or avoidance. Cash is widely used in the “hidden” economy and is responsible for some of the “tax gap” as highlighted by HMRC in their annual paper.

Moreover, many multinational companies avoid UK taxation by legal but socially unacceptable means of transfer pricing.

One method that would be worth investigating in a cashless society is the use of an Automated Payment Transaction (APT) Tax which would involve a small levy on all UK transactions to replace all other taxes. This would solve many of the issues highlighted in this question, but also of tax avoidance by multi-national companies via transfer pricing. However, this is really only an option in a cashless society as any cash payment is subject to tax evasion.

Please see the section on an APT tax in our Paper linked below.

Document	Section	Relevance
Interim paper	3.9-3.10: benefits of a cashless society	Automated Payment Transaction (APT) tax

Question 19: […] What are the barriers to using digital payments?

Stakeholder interests lie at the core of the dynamics that support the adoption of digital payments.

The working party’s study of international developments throughout 2017 has resulted in a proposed log of 20 risks and issues that affect each stakeholder differently, with conflicting levels of priority.

These demonstrate the emotive character of the transition towards digital payments, and therefore a relative resistance towards change in developed countries.

The numerous risks and issues that affect multiple stakeholders should be resolved as part of a transition towards digital payments. Addressing the political issues, economics of money and financial exclusion are core themes.

Amongst these Risks and Issues, the Paper discusses:

- Trust in Banks
- Trust in Governments
- Security of transactions data
- Financial Exclusion
- Digital Economy Readiness
- Privacy
- Politics
- Financial Stability

Less use of cash within an economy puts more reliance on the banking system, and Government must consider if it should be investing in the current banking system or indeed consider further the prospects of a Central Bank Digital Currency, which has been researched by the Bank of England and which would have a highly significant effect on the entire banking system.

Removing cash from an economy would assist central banks imposing a negative interest rate policy (NIRP). Section 4 of the Interim Paper examines NIRP.

Document	Section	Relevance
Interim paper	5.2, 5.4, 5.5: Financial exclusion	Financial exclusion and the effects of technology and de-cashing for countries at various stages of development, and the problem of change.
Interim paper	5.3: Financial exclusion	M-Pesa case study
Interim paper	6: Risks and issues	Inhibiting issues: Hidden agendas, trust in governments, trust in banks, Digital economy, readiness, security of transactions data and biometrics, social value of cash, totalitarian regime, end to the right of a private life, excessive reliance on technology, removing cash may stall the economy, innovation marketplace and user experience, lack of competition on payments market, politics vs innovation
Interim paper	7: SWOT analysis	Diverging stakeholder interests prevent transition

Interim paper	8.1, 8.2, 8.3: the Cashless World in Motion	Ecosystem challenges in USA (8.1.2), Africa and the Middle East (8.2), China case study (8.3.4), India case study (8.3.5)
Interim paper	4 the Cashless World in Motion	India, one year on. (4.5)

Question 22: Are there other international examples of countries who have tackled tax evasion and money laundering associated with cash that the UK should look to?

An IMF working paper (below) has attempted to quantify the extent of hidden economies and estimated that this might be between 5% and 10% of GDP for the UK, a figure at variance with the HMRC "Tax Gap" publication.

Some countries (such as France) have introduced new Cash Register obligations and Fiscal Memory Devices to avoid VAT fraud and under-reporting of transactions, but it is not clear how these measures adequately pinpoint the use of cash to conceal detection.

An OECD report, highlighted below, details measures some countries are attempting to tackle the problem, each of which would have some effect on reducing tax evasion:

- Argentina allows for a reduction of VAT if transactions are made electronically
- Austria no longer allows for tax deductions against cash payments in excess of €500
- Finland monitors ATM withdrawals
- France imposes limits prohibiting cash payments over €1000
- Greece does the same over €1,500
- Italy has restriction in the use of cash in the Real Estate sector
- Sweden allows companies to refuse to accept cash payments

Additionally, Israel is considering outlawing the payment of wages in cash.

Document	Resource	Relevance
Shadow Economies around the World- What did we learn over the last 20 years?	External reference	2018 IMF working paper publication. Research in progress
New cash register system obligations in France from 1 January 2018	External reference	France was the latest country to implement cash register system obligations in January 2018
Fiscal memory devices	External reference	Technology is widely available to combat tax evasion
Technology tools to tackle tax evasion and tax fraud	External reference	This 2017 OECD report reviews the available technology

If you wish to discuss our response any further please contact Matthew Levine, Policy Manager (matthew.levine@actuaries.org.uk).

Yours sincerely

Marjorie Ngwenya

President, Institute and Faculty of Actuaries

Appendix- Reproduction of the SWOT analysis from Section 7 of the Interim Paper analysing different stakeholders' attitudes toward de-cashing

<table>
<tr><th colspan="2">The public</th></tr>
<tr><th>Strengths</th><th>Weaknesses</th></tr>
<tr><td>Convenience: Integration of wallet into digital devices/ services
• Consumer and political power
• End of cash making/ handling costs on taxpayer
• Perceived social fairness if tax
• Compliance may improve, and frauds may reduce.</td><td>Financial exclusion, some will have difficulties with transition,
• Potential unreliable access to infrastructure and technology (physical and cognitive),
• Financial and technological literacy, Inc. budget management,
• Hidden agendas (suspicion),
• Mistrust in banks,
• Attachment to social value of cash.</td></tr>
<tr><th>Opportunities</th><th>Threats</th></tr>
<tr><td>Financial inclusion,
• Financial and technological literacy,
• Bank competition may mean lower consumer costs,
• More payment choices, inc digital currencies,
• New payment methods may disintermediate banks.</td><td>Financial exclusion / unaffordable technology,
• Loss of freedom, digital enslavement, dystopian world,
• Loss of free means of payment/ Forced consumption of private services,
• Hidden agendas (repression),
• Change won't live up to promises,
• Mistrust in banks,
• Negative Interest Rates and wallet erosion through fees,
• Money loss through collapsing schemes,
• Security of transactions and data (Inc. biometrics),
• Increased debt,</td></tr>
</table>

	• Lack of interoperability, inconvenience, • Loss of sovereignty

Non-financial businesses	
Strengths	**Weaknesses**
Digital business = leaner, more efficient business, • Reduced transaction fees.	Business revenue erosion through transaction fees, • Tax compliance, • Refusing cash locks out some customers (choice or necessity).
Opportunities	**Threats**
Decreased costs of handling cash, and dealing with changes in legal tender (new/ withdrawn coins and notes), • Potential reduction in bank and payment charges, • Decreased risks of robberies and violent crime, • Increased sales (decreased pain of spending), • New business opportunities & innovation.	Changes in payment ecosystem will disrupt business operations, • Transition time in technology, business processes and customer relationships, • Cybercrime can devastate business quickly, • Increased bank and payment charges (fee compliance), • Increased red tape (business responsibilities on fraud detection and reporting), • Decreased discretion in customer relationships, • More technology risk= increased business continuity requirements, • Loss of local cash handling business.

Governments and Central banks	
Strengths	**Weaknesses**
Popular support for fight against shadow economy (UK, Eastern Europe), • Control of legal and regulatory regime, • Power to decide on strategic changes.	Public resistance to change, • Ethics: loss of free means of payment (public good), • Perceived hidden agendas of repression, threat to democratic values, • Loss of seignorage, • Lack of public ownership of transition, • Eroding trust of politics/ conflicts of interest, • Relationship with banks, • Underlying readiness for digital economy, Inc. legal and regulatory frameworks.
Opportunities	**Threats**
Financial education for inclusion, • Economic and social progression/ reforms, • Central Banks Digital Currencies: safety net against other digital currencies, • Negative Interest Rates Policy, • Maintenance of law and order through infrastructure shutdowns, • Tax compliance, • New forms of tax (such as APT), • Improved Business Intelligence through data collection,	Cash is a safety valve: country continuity plans, • Power of banks and payment providers, • Popular trust/ suspicion of repression/ dystopian world, • Risks of payment ecosystem changes on financial stability, • Sovereignty risks with data and payment providers, • Cybercrime impact over short space of time, • Displacement to other currencies,

• Reduced tax exposure of cash making and handling, • Minimum income/ Welfare distribution, • Reduced hidden economy, tax evasion, crime & frauds.	other countries' paper currencies, • Transition: Temporary reduction of economic activity.

Financial businesses	
Strengths	**Weaknesses**
Position of power in current ecosystem. • Control over distribution of main competitor: cash, • Reduction in costs of cash handling, • A cashless society is an ideal situation for the banking industry.	Trust in banks, • Legal and regulatory constraints, Changes in banks' business models.
Opportunities	**Threats**
Financial Inclusion broadens customer base, • Technology investments for financial inclusion, • Destroy cash as key competitor, and key interest rates low, • Reduce distribution of cash: no ATMs, branch closures would make banks leaner, • Restore trust, • No cash runs, transaction fees compliance, • Lead in development of Digital currencies	Cash hoarding abroad (displacement in other countries), • Legal limits of transaction fees, • Political agendas and repressive actions, • Competition from alternative payment methods, • Forced change in business model: CBDC, • Legal push to provide mobile devices for financial inclusion, • Cyber-security: payments and data, • Impact of interoperability requirements.

Payment providers	
Strengths	**Weaknesses**
Payments compliance, • Global innovation enables financial inclusion.	Trust in banks, • Ecosystem depends on readiness to digital economy, • Interoperability/ user experience, • Internal risk of fast moving innovation to financial stability
Opportunities	**Threats**
Financial Inclusion broadens Ongoing scope for innovation, • Financial inclusion opens further markets, • Transaction fees compliance, • Mistrust in banks.	Political interventions to manage financial stability, • Legal and regulatory constraints Inc. transaction fees, • New types of competition: CBDCs, Digital currencies, • Banks and/or CBDC may shift business model to compete with ecosystem, • Ecosystem may have to provide mobile devices for financial inclusion, • Cyber-security - data and transactions, • Eventual industry consolidation and consumer confidence.