MONETARY TRANSITIONS AND PROPERTY RIGHTS: LESSONS FROM INDIA'S 2016 DEMONETISATION

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ABSTRACT

States have routinely changed the form and the transmission mechanisms of money, from the ancient practice of coin debasement, to the introduction of the Euro in 1999, or the recent push towards cashless payments. Very little has been said on the impact that monetary transitions have on money holders' existing property rights. This paper uses the 2016 Indian demonetisation as a starting point to analyse, from a theoretical perspective, the challenges faced by states and individuals in the context of monetary transitions. This paper argues that the process of conversion from one type of money to another can entail substantial practical, legal, or financial hurdles for money holders. For instance, individuals might not have access to banks, or they could be unable to operate digital payments. I define those hurdles as 'transition costs'. I argue that such transition costs negatively affect property rights, and have a disproportionate impact on the poor.

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> "There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency. The process engages all the hidden forces of economic law on the side of destruction and does it in a manner which not one man in a million is able to diagnose". John Maynard Keynes[1]

I. INTRODUCTION

As Douglas North famously reiterated throughout his writings: 'institutions matter'.[2] Sound commercial laws, protection of property rights, stable constitutions, or efficient court systems, are all necessary elements to guarantee order to commerce and reduce uncertainty in economic activity.[3] In the realm of finance, one of the key insights of the institutional economics literature is that strong monetary institutions and credible monetary governance are the necessary prerequisites for a stable monetary system.[4] The system of rules, usages, and policies that define what is to be considered money in a society and when it can be used to tender payments are another part of the complex monetary infrastructure of a country. It comprises, among others, the rules on legal tender, the regulatory framework and commercial laws on payment, and rules on central bank governance and independence.[5]

Monetary systems have been constantly evolving, from the times of stone-based coins to the new rise of cryptocurrencies. Governments have always retained particular powers in controlling the money supply and influencing its use, sometimes altering the composition or the form of money to achieve a particular policy or societal objective.[6] For instance, in the middle ages, Kings routinely debased coins to sometimes appropriate the precious metal

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[1] John M. Keynes, *The Economic Consequences of the Peace* (1919), ch. 6
[2] Douglas North, *Structure and Change in Economic History* (London: Norton 1981); Douglas North, *Institutions, Institutional Change and Economic Performance* (Cambridge University Press, 1990)
[3] Douglas North, "Institutions", (1991) 5 Journal of Economic Perspectives 97, at 97
[4] J. de Haan, C. Bodea, R. Hicks, S.C.W. Eijffinger, "Central Bank Independence Before and After the Crisis". (2018) 60 Comparative Economic Studies 183, at 195; J. Fernandez-Albertos, "The Politics of Central Bank Independence", (2015) 18 Annual Review of Political Science 218
[5] Simon Gleeson, *The Legal Concept of Money* (Oxford: Oxford University Press, 2019)
[6] Felix Martin, *Money: The Unauthorized Biography* (London: Vintage, 2014); Jack Weatherford, *The History of Money* (London: Crown Publications, 1998)

contained in it.[7] More than a century ago, central banks linked the price of notes to gold to maintain a stable system of exchange rates that support global commerce. More recently, monetary authorities have been pondering how to transition from cash to digital currencies and payments.[8] Sometimes the change affects the methods of payment rather than the currency itself, as the evolution of negotiable instruments over the past century and the recent rise of bank electronic transfer show. I define the phase of change affecting the form or composition of money or the method of payment as 'monetary transition'.

In the context of the constant evolutionary path of money, very little has been discussed regarding the impact of monetary transitions on the economic rights that are associated with the use of currency. Above all, the fundamental right of property. Money is not only an essential tool for commerce, but also a mechanism for saving whose sudden change might impact the life of everyone who uses it. Statutory changes as to what constitutes 'legal tender', the methods of payment, or access to the banking system, influence the wealth of individuals, their ability to trade, and in certain cases, their very existence. This essay will analyse the impact of monetary transitions on property rights and financial inclusion, with a specific focus on the role of money as a mechanism of payment for the poor. In particular, I will focus on the transition from notes to cashless electronic payments (e-payments) which is taking place all over the world. [9]

The theoretical discussions presented in this essay are informed by the November 2016 Indian experiment with demonetisation and its impact on inequality and poverty.[10] In the evening of 8 November 2016, Indian Prime Minister Narendra Modi announced that from the very next day, 500 and 1000 Rs currency notes would be declared illegal. The sudden withdrawal of

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[7] Christine Desan, *Making Money: Coin, Currency, and the Making of Capitalism* (New York: Oxford University Press, 2014)

[8] Tommaso Mancini-Griffoli, 'Casting Lights on Central Bank Digital Currencies', IMF Staff Discussion Note SND/18/08 (2018); Michael Kumhof and Clare Noone, 'Central Bank Digital Currencies – Design Principles and Balance Sheet Implications', Bank of England Staff Working Paper No 725 (2018); Sveriges Riksbank, 'The Riksbank's e-Krona Project', Report 1 (2017); Sveriges Riksbank, 'The Riksbank's e-Krona Project', Report 2 (2018); Aleksander Berentsen and Fabian Schär, "The Case for Central Bank Electronic Money and the Non-case for Central Bank Cryptocurrencies", (2018) Federal Reserve Bank of St. Louis Review Q2 97

[9] In this article, I define e-payment in the widest sense as online payment systems that enable the transmission of value. Thus, e-payments comprise both electronic bank transfers, credit/debit cards, internet payments, mobile electronic wallets, and other digital solutions. On this see also, World Bank, *Digital Dividends: World Development Report* (2016)

[10] C. Rammanohar Reddy, *Demonetisation and Black Money* (Delhi: Orient BlackSwan, 2017); Jayati Ghosh, C.P. Chandrasekhar, and Prabhat Patnaik, *Demonetisation Decoded: A Critique of India's Demonetisation Experiment* (London: Routledge, 2017)

these notes from circulation demonetised around 86% of the total currency in circulation in India in just a few hours; the largest demonetisation ever conducted.[11] While the reasons behind the decision to demonetise were motivated by the need to combat money laundering and counterfeit currencies, the measure had also the secondary objective of increasing the use of e-payments in the country. The full long-term economic impact of the measure is still under debate. Evidence shows that the sudden inability to intermediate demonetised notes and to convert them into other forms of money did increase bank deposits, and spurred the use of e-payments in the cities and among the wealthier parts of the society. However, for those who were unable to operate the conversion, mostly the poor and other economically weak segments of the society, the sudden demonetisation meant a total inability to intermediate money.[12] In other words, it meant a sudden loss of wealth.

At the core of the mishap was the flawed understanding of the practical challenges of monetary transition, and how these might affect property rights. In a classical economic model, the lack of formal mechanisms of payment would see agents switching progressively to other means of payments, such as e-payments or bank deposits.[13] However, studies suggest that this transition takes time and entails much more fundamental challenges than originally expected.[14] In between, there could be are a myriad of legal, administrative, behavioral, technical, and financial hurdles that individuals have to face. I define them as '*transition* costs'.[15] One of the main challenges is the difference in the ease of access to the new payment mechanism among different social groups. While the transition from cash to bank deposits or electronic money (e-money) intermediated through the various digital payment solutions can be relatively smooth for middle-income groups or those who live in the city, the same is not necessarily true for

[11] Ibid.

[12] See *Correspondent, Special. "'Demonetisation effects will last long'". The Hindu.* Retrieved 2017-02-26; Natasha Sarin and Lawrence H. Summers, "Most Sweeping Change in Currency Policy in the World in Decades", available at http://larrysummers.com/2016/11/21/most-sweeping-change-in-currency-policy-in-the-world-in-decades/

[13] Rajeev Deshpande, "India's Demonetisation: Modi's 'Nudge' To Change Economic and Social Behaviour", 48(2) Asian Affairs 222 (2017)

[14] Bhaskar Chakravorti and R. Shankar Chaturvedi, *Digital Planet 2017: How Competitiveness and Trust in Digital Economies Vary Across the World* (Boston: The Fletcher School, Tufts University, 2017); Bhaskar Chakravorti, "A Year After India Killed Cash, Here's What We Can Learn", World Economic Forum (6 November 2017)

[15] Not to be confused with the economic concept of 'transaction costs', which refers to the costs of trading in a market for firms and individuals. For a more comprehensive definition and explanation, see, M. Klaes,"Transaction Costs, History Of," in Steven N. Durlauf and Lawrence E. Blume (eds), *The New Palgrave Dictionary of Economics*, 2nd Edition (London, Palgrave, 2008)

low-income citizens, persons with disabilities, or those living in rural villages.[16] Sometimes, legal requirements prevent the opening of bank deposits or limit the amount of money available for conversion. At other times, the challenges are due to weak banking or telecom infrastructures. Each of these transition costs impact on existing property rights and ultimately lead to reduced wealth.

Before concluding, it is worth noting that due to the political context in which it was adopted, this episode in India's contemporary economic life was extremely divisive, and has been subject to extensive commentary, a lot of it fraught with political biases.[17] It is not the purpose of this essay to judge the political implications of the measure or to engage in any political debate. Instead, the Indian demonetisation 2016 was chosen because it represents in many ways a unique case study for the analysis of monetary transitions. The percentage of demonetised cash over total money in circulation, the speed of the transition, the specific economic development circumstances of India, and the impact on financial inclusion, are all almost impossible to replicate.

The essay is divided into six sections. After this introduction, Section II introduces the concept of monetary transition, explains how it always occurred throughout history, and discusses its contemporary forms. Section III discusses the Indian 2016 Demonetisation and its effect. Sections IV and V introduce the concept of transition costs and analyze how they impact existing property rights. The first part of the analysis covers the conversion from notes into new notes and bank deposits. The second part analyzes the particular transition costs affecting

[16] I will provide a definition of e-money and describe its use in Section V below. For the time being, it sufficient to clarify that e-money (also referred here as digital money) can be defined as digital representation of value, different from bank deposits, that is used in certain e-payment system, such as e-wallets or pre-paid cards. Thus, it is important to note that e-money is conceptually different from cryptocurrencies like Bitcoin insofar as e-money is denominated in fiat currency, does not have its own unit of account and, more generally, does not aim at replacing 'state money'. Since the use of cryptocurrencies as mechanism of retail payments is relatively low among the poor, for ease of discussion, I have not included in this analysis. On the difference between virtual currencies see, D. He et al, "Virtual Currencies and Beyond: Initial Considerations", (2016) IMF Staff Discussion Note SDN/16/03; See also Simon Gleeson, *The Legal Concept of Money* (Oxford 2019), ch 8-9. For the challenges of digital financial inclusion in India, see Committee on Digital Payments, "Medium Term Recommendations to Strengthen the Digital Payments Ecosystem: Report", Government of India (December 2016)

[17] Not surprisingly, the decision polarized the discussion along political lines, often losing sight of the actual economics rationale underneath. Among the harshest critiques were Amartya Sen and Paul Krugman. See *Correspondent, Special.* *"'Demonetisation effects will last long'"*. *The Hindu.* Retrieved 2017-02-26; Natasha Sarin and Lawrence H. Summers, "Most Sweeping Change in Currency Policy in the World in Decades", available at http://larrysummers.com/2016/11/21/most-sweeping-change-in-currency-policy-in-the-world-in-decades/

the conversion of cash into e-money that enables the use of digital payment solutions. Section VI provides concluding observations on the impact of monetary transitions on inequality and discrimination.

II. MONETARY TRANSITIONS IN MONETARY LAW

The relationship between the state, money, and commerce has always been a turbulent one. While money has always been a tool to facilitate commerce, kings and governments have nevertheless meddled with it long before the creation of modern central banks.[18] The prerogative powers of the states when it comes to money have always been a function of the political power of the institution in charge of the country, irrespective of its form as a monarchy or a democratically elected government.[19]

A. Monetary Sovereignty

Under the modern concept of monetary sovereignty, one of the main functions of the state is to decide upon the type of medium of payments legally recognized as valid to settle financial obligations within the state's jurisdiction, and to associate a monetary value to the notes issued by the central bank.[20] According to the 'state theory' of money, originally developed by G.F. Knapp and later on by Mann, only chattels that find their value and use determined by law and issued with the authority of the state can be considered as money.[21] Thus, money does not acquire its value because of the raw material used in its production or with reference of other units of account, but simply through the credibility of the state which promises to keep the value of the state money in circulation intact over time. What economist call "fiat money".[22]

As acutely observed by Gleeson, the fact that a state has declared notes as money and attached them a fixed value does not automatically guarantee that people will use them in their daily

[18] Emily Gilbert an Heric Helleiner (eds), *Nation States and Money: The Past, Present, and Future of National Currencies* (London: Routledge, 1999)
[19] Desan, *Making Money*, note 7 above, at 11
[20] See, Claus Zimmerman, *A Contemporary Concept of Monetary Sovereignty* (Oxford University Press, 2013); See also, Rosa Maria Lastra, *International Financial and Monetary Law* (Oxford University Press, 2015), at 1-28
[21] Knapp, Staatliche Theorie des Geldes (4th edn, 1923) , translated by Lucas and Bonar, State Theory of Money (1924; abridged edn, A.M. Kelley, 1973); Charles Proctor, Mann on the Legal Aspects of Money (Oxford University Press, 2015), at 15-25
[22] Michael McLeay, Amar Radia and Ryland Thomas, "Money in the Modern Economy: An Introduction", Bank of England Quarterly Bulletin Q1 (2014)

life.[23] As we have recently seen in Venezuela and during many other economic crises around the world, when monetary institutions are perceived as weak, citizens overwhelmingly prefer to trade with US Dollars or Euros rather than the local currency.[24] Very often, state money competes and coexists with unofficial money, such as virtual currencies or informal credit, simply because certain social groups find it more convenient to discharge their debts. To guarantee that only the "official" state currency is used for monetary transactions within the jurisdiction, or to give it an advantage as the main mechanism of payment, states have devised a legal artifice whereby the validity of notes and coins is set by statute rather than by reference to an underlying asset. Unless otherwise agreed, only those notes that were certified as "legal tender" by the government could be legally used by citizens to discharge debts, especially the debts against the state.[25]

The concept of legal tender has narrowed dramatically nowadays, as people and firms prefer to pay via bank transfer or e-payments. In its widest form, it means that a payee who receives notes that have status of legal tender in the country cannot in principle refuse to accept them as means of payment for the discharge of the debt unless a different payment method is envisaged in the contract.[26] Yet, concerning the current analysis, in countries that rely predominantly on cash such as India, the definition of legal tender has a fundamental impact because it can still determine what money most individuals can use to pay their debts and exert their role as traders and consumers in the society.

Moreover, it is important to stress that one of the consequences of the state playing a pivotal role in controlling the mechanisms of credit and payment in the country, is that it is up to the government to ensure that the value of money remains stable over time. Indeed, if we accept that it is the state that decides what is money and what value it holds, then it is the state that must guarantee that monetary changes do not impact on existing property rights. As I will reiterate multiple times in this essay, a change in the value of money or in what constitutes money indeed impacts heavily on the property rights of individuals that hold it, as it deprives them of the monetary value associated with their notes or bank deposits. Thus, one of the corollaries of the state theory of money is that, monetary stability is fundamentally a public

[23] Gleeson, *The Legal Concept of Money*, note 5 above, at 24
[24] Kurt Schuler, 'Some History and Theory on Dollarization', (2005) 25 Cato Journal 115
[25] According to William Blackstone, "as money is the medium of commerce, it is the king's prerogative, as the arbiter of domestic commerce, to give it authority or make it current [that is, to declare it to be legal tender]. The king may also at any time decry, or cry down, any coin of the kingdom, and make it no longer current". http://www.thegoldstandardnow.org/key-blogs/1404-coinage-and-sovereignty
[26] See, Proctor, *Mann on the Legal Aspects of Money*, note 21 above

policy objective that has to be protected by law. In this light, it is easy to see why the progressive grabbing of monetary mechanisms in the hands of the state has been accompanied by the creation of legal institutions that reduce political control over money and insulate money from the vagaries of political cycles.[27] For instance, central banks, the government agencies tasked with managing the monetary aspects of the country, have acquired special statutory and, in certain cases, constitutional powers to conduct monetary operations independently of political controls.[28] Various studies indeed suggest that strong monetary institutions and central bank independence do lead to economic growth and ease of doing business.[29]

B. Monetary Transitions Today: Demonetisation and De-Cashing

Since medieval times, governments have used money to recalibrate the society's costs of participating in an economic polity, and to redistribute property between groups and the state. Within their powers, states have routinely changed the form, value, and transmission mechanisms of money. The state, being a monopolist on the issuing of legal currency, has the power to decide the value of money against other assets and, crucially for what concerns the present discussion, the type of currency in circulation. I define the process of monetary change from one form of money to another as 'monetary transition'. For instance, de-basement – the practice of reducing the value of coins by altering the quantity of metals in it - was quite a common way for kings to gain wealth at the expense of citizens while not altering the amount of coins in circulation.[30] In the 17th century Mixed Monies case, the Privy Council ruled that "as the King by his prerogative may make money of what matter and form he pleaseth, and

[27] Charles Goodhart and Rosa M. Lastra, 'Populism and Central Bank Independence', Open Econ Rev 49 (2018),

[28] Charles Goodhart, *The Evolution of Central banks* (Cambridge, Massachusetts: MIT Press, 1988); Francois Gianviti, "The Objectives of Central banks", in Mario Giovanoli and Diego Devos (eds) *International Monetary and Financial Law: The Global Crisis* (Oxford: Oxford University Press, 2010); Fernandez-Albertos, 'The politics of central bank independence', note 4 above; de Haan, 'Central Bank Independence Before and After the Crisis', note 4 above, at 195

[29] Aberto Alesina and Larry H. Summers, 'Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence', (1993) 25 Journal of Money, Credit and Banking 151

[30] See, for instance, Anthony A. Barrett, "The Invalidation of Currency in the Roman Empire: The Claudian Demonetization of Caligula's Aes", in G. M. Paul and M. Ierardi (eds) *Roman Coins and Public Life Under the Empire* (Ann Arbor 1999)

establish the standard of it, so may he change his money in substance and impression, and enhance or debase the value of it, or entirely decry and annul it'.[31]

States retain the very same powers nowadays. Within their powers to control the currency, governments enjoy the prerogative to change the notes that constitute legal tender.[32] This can entail the issuance of new notes and coins with higher or lower value, but also the withdrawal from circulation of notes and coins that then cease to be recognized as valid legal tender. This latter measure is usually called "demonetisation". Inflation, technological developments in minting, and other economic changes have always forced governments to change the type and value of notes in circulation. Yet, when we refer to demonetisation, we specifically refer to the process of stripping notes or coins from their legal status as money.

In the recent history of finance, there are various examples of demonetisation around the world. Before the 2016 demonetisation exercise, India had already demonetised various sets of notes in 1946 and 1978. At the onset of the Soviet Union's collapse in 1991 under Gorbachev, Russia demonetised the 50-Ruble and 100-Ruble notes.[33] In certain cases, the reason behind the demonetisation was to catch up with spiralling inflation. For instance, in Russia 1991 and Zimbabwe 2015, the government had no other option than to print new currency and withdraw the larger denomination notes to maintain the purchasing price of the currency at a manageable level.[34] However, in most circumstances, the reason behind the demonetisation is more "institutional": to combat "dirty money".

There is a very well-developed literature that demonstrates that criminals have a very high appetite for high-denomination notes as they are easier to transport. Moreover, when it comes to counterfeited currency, high-denomination notes are clearly preferred as their relative cost of production and distribution is proportionally lower than small notes.[35] For instance, in the very well-known English law case – *Banco de Portugal v Waterlow & Sons Ltd* - the Portuguese government's decision to demonetise the entire set of 500 Escudo notes was due to

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[31] The Case of Mixed Money (1605); For a good discussion on the case, see David Fox "The Case of Mixed Monies (1604)", in D. Fox and W. Ernst (eds) *Money in the Western Legal Tradition: Middle Ages to Bretton Woods* (Oxford 2016); see also, Desan, note 7 above, at 269-272

[32] The Royal Mint, Guidelines on Legal Tender, available at https://www.royalmint.com/aboutus/policies-and-guidelines/legal-tender-guidelines/

[33] Ameya Patyl, "History of Demonetisation - Case Studies" (December 25, 2016). Chronicle of Neville Wadia Institute of Management Studies and Research, Forthcoming. Available at SSRN: https://ssrn.com/abstract=2996104

[34] Ibid.

[35] Peter Sands, "Making it Harder for the Bad Guys: The Case for Eliminating High Denomination Notes," (2016) M-RCBG Associate Working Paper No. 52

the fact that half of the notes in circulation were forged.[36] Finally, in certain circumstances, the demonetisation of notes is a strategy to combat tax evasion. The rationale here is to force individuals that are converting their demonetised notes at the bank to declare their provenance. This latter strategy was, for instance, one of the reasons behind all India's demonetisations since 1946.[37] For these reasons, in the last decades, a handful of countries have decided to withdraw large denomination notes from circulation.[38] These include the 2016 decision of the European Central bank to demonetised the 500 Euro notes, the 2000 withdrawal of the $1000 banknote by Canada, and the withdrawal of the infamous $10,000 banknote by Singapore in 2014.[39]

Most of the time, the process of demonetisation entails the replacement of notes, with other notes that are of lower denomination or are more difficult to counterfeit. However, when the withdrawal of notes from circulation is not compensated by the issuance of an equivalent amount in other denomination notes, the literature refers to "de-cashing".[40] In this event, the demonetisation leads to a progressive conversion of notes into bank deposits with the ultimate result that payments will have to be processed electronically through banking networks or digital payment providers. Even though only a few countries have set the course to become a cashless society, the drive towards digital payments taking place all over the world has triggered increased interest from governments to reduce the amount of cash in circulation. The reasons are very similar to those discussed before: to achieve better control over firms and individuals' wealth and financial transactions for tax reasons, to get a cheaper and more efficient payment system that reduces the costs of managing cash for the central bank. [41] Some commentators argue that cashless economies would give central banks much better control over the monetary policy.[42]

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[36] *Banco de Portugal v Waterlow & Sons Ltd,* (1932) AC 452; for a good description of the case, see C. Bamford, *Principles of International Financial Law* (Oxford 2015), at 26-27

[37] Patyl, "History of Demonetisation", note 33 above; See, Reddy, *Demonetisation and Black Money*, note 10 above, at 42-44

[38] P. Sands, "Making it Harder for the Bad Guys", note 35 above

[39] Alexei Kireyev, "The Macroeconomics of De-Cashing", (2017) IMF Working Paper WP/17/71, at 6

[40] Ibid

[41] Ben Dyson and Graham Hodgson, *Digital Cash: Why Central banks Should Start Issuing Electronic Money* (London 2016)

[42] Kenneth Rogoff, *The Curse of Cash* (Cambridge 2016); K. Rogoff, "Costs and Benefits to Phasing Out Paper Currency", (2014) NBER Working Paper 20126

III. THE 2016 INDIA DEMONETISATION EXPERIMENT

With this background knowledge, it is now time to discuss the demonetisation experiment that took place in India in 2016. Before continuing, it is important to reiterate that it is not the objective of this paper to discuss the merit of the demonetisation decision and the long-term impact it had on the Indian economy. Rather, this event is useful to elucidate the costs of monetary transitions from cash to electronic payments, and the impact that access to payments has on property rights.

A. *Financial Inclusion and Black Money*

In the run up to the demonetisation decision India was, like many other countries, in the midst of a digital payment revolution.[43] With a burgeoning economy of 1.2 billion citizens, a record-breaking 1 billion phone subscriptions, and a thriving IT sector, the Indian economy was on the frontline of the digital shift.[44] The Indian government's *Aadhar* biometric digital identification system launched in 2009 had for the first time provided a unique government identity card to hundreds of millions of individuals, thus enabling them to receive welfare payments, and access a number of public services.[45] More importantly in the context of this analysis, the use of Aadhar seriously tackled one of the key issues of digital payment: the need to link a payment instrument to an individual as required by money laundering and know-your-customer regulation.[46]

Behind the hype, however, the Indian economy faced critical problems. As of 2014, only 53% of the Indian population had access to formal financial services, with much lower percentages in rural parts of the country.[47] This was primarily due to a chronic poverty problem that made offering financial services to poor unprofitable for banks, operational costs of running banking operations in rural areas, and low financial literacy.[48] The Indian government's initiative

[43] See, Boston Consulting Group and Google, *Digital Payments 2020: The Making of a $500 Billion Ecosystem in India* (July 2016); Visa, *Accelerating the Growth of Digital Payments in India: A Five-Year Outlook* (October 2016)
[44] Telecom Regulatory Authority of India, 'Press Release - Highlights of Telecom Subscription Data as on 31st August 2016'
[45] Shankar Aiyar, *Aadhaar: A Biometric History of India's 12-Digit Revolution* (Westland, 2017)
[46] Boston Consulting Group *Digital Payments* 2020, note 43 above, at 12
[47] World Bank, *Financial Inclusion Index Data* (2014)
[48] Emily Middleton, 'Inclusive Digital Transformation in India: Improving Digital Financial Services for the Poor Through Human-Centered Design', (2018) Belfer Center for Science and International Affairs Paper (2018)

Pradhan Mantri Jan Dhan Yojana set to open basic bank accounts for all unbanked individuals, but not surprisingly this proved to be a Herculean task fraught with complexities, from bank infrastructure deployment to connectivity issues.[49] The Telecom and internet networks, while extended and upgraded considerably over the years, still did not offer the guarantee of universal coverage and the continuous service necessary for digital financial services to work reliably. Estimates suggest huge location and gender imbalances among mobile-internet users, with 70% of users in cities, and only 17% of those being women.[50]

Not surprisingly, India was one the countries in the world with the highest usage of cash, with around 78% of all consumer transactions made with notes. This was much higher than any other country at a similar stage of economic development, not to mention more developed economies. A survey showed that less than 10% of Indians had ever used non-cash payments in their life, while only 3% of the total value transacted by cards was done through mobile banking.[51] Despite the staggering costs of using cash in terms of time spent traveling to ATM or branches to withdraw notes, fees, printing and distribution costs for banks, cash provides unique features that explain its widespread use.[52] First, cash does not require users to be banked, as by definition it passes from hand to hand without 'reference to the credit or person who offers it'.[53] This means that a person who tenders cash in payment of debt does not need to go through credit or identity checks, as the payment with notes is immediately final. Unbanked individuals will therefore be able to use payment services without the need to pass through the banking network. Second, the legal genius of negotiable instruments – including notes - is indeed that their physical possession equals their property right. Thus, as long as individuals are able to store cash safely, they can use it as a saving device, albeit with no interest accrued. In a country like India, where only 35% of the population is bank-active, the lack of financial inclusion meant that cash was used not only for payment purposes but as a saving

[49] RBI Committee on Medium Term Path on Financial Inclusion, Report of the Committee on Medium Term Path on Financial Inclusion (Reserve Bank of India, 2015)
[50] Hani Zainulbhai, 'Global Tech Companies See India's Vast Offline Population as Untapped Market', PEW Research Center (6 April 2016), available at http://pewrsr.ch/207ykqG
[51] The Institute for Business in the Global Context, *The Cost of Cash in India* (Boston 2014), at 6
[52] Ibid, at 21
[53] In one of the key cases on money in common law, *Moss v Hancock*, money is defined as that which passes freely from hand to hand in the community in final discharge of debts and full payment of commodities, **being accepted equally without reference to the character or credit of the person who offers it".** 1899] 2 QB 111, 116,

tool for poor, with a staggering ratio of 51% of money held in bills and coins versus bank accounts.[54]

On the other hand, the anonymity of cash and its replicable physical features present fundamental costs.[55] First, cash enables only person-to-person transactions, thus making long-distance payments impossible. This hinders commerce as it reduces the scope of the payment economy to the village size. Second, notes are very easy to counterfeit compared to other types of money registered electronically, such as bank deposit. Indeed, counterfeiting was plaguing the Indian economy, with RBI statistics suggesting a 300% increase in counterfeit notes in the 2006-2016 period.[56] Counterfeiting notes not only undermines the confidence of the public in the role of the national currency as a means of payment, but crucially it erodes the central bank's control on its monetary value. The more counterfeited notes in circulation, the lower the purchasing power in real terms of valid notes. Finally, because of its anonymity, cash is typically a conduit for the proceeds of crime and a vehicle of tax evasion. In India, where 90% of jobs are not declared to tax authorities, the size of the informal economy contributed to 40% of the GDP.[57] Not surprisingly, this was the main stated objective behind the demonetisation decision.

B. *The 2016 Demonetisation and Its Effect*

On the evening of 8 November 2016, India's Prime Minister Narendra Modi made the public announcement that, from the very next day, all 500 and 1000 Rs currency notes would be withdrawn from circulation and made illegal. Note holders were given only a few weeks to convert them into other denomination notes, bank deposit, or digital money. Depending on the total amount deposited, only those notes whose legitimate provenance was proved could be converted.[58] This move effectively demonetized in a matter of hours around 86% of the total notes in use in India, and created a state of chaos that resulted in days of queues in front of banks, loss of jobs, and a general slowdown of retail commerce and industry across the

[54] For instance, the same ratio in Egypt is (29.3%), South Africa (8.9%), and Mexico (8.7%) See, *The Cost of Cash in India*, note 51 above, at 5
[55] Ibid; Rogoff, *The Curse of Cash*, note 42 above; Rogoff, "Costs and Benefits", note 42 above
[56] Reddy, *Demonetisation and Black Money*, note 10 above, at 65-67
[57] *The Cost of Cash in India*, note 51 above, at 5
[58] Initially, the Indian Gazette notification gave a deadline of seven weeks (until the 31st December 2016) to convert the notes. This was then changed multiple times.

country.[59] The stated objectives of the demonetisation exercise were twofold: first, the withdrawal of 500 and 1000 Rs notes was supposed to fight black money, eliminate counterfeit notes, and stop terrorism financing.[60] Second, the government saw this move as an incentive to move towards a cashless society in which payments would be executed through digital means. This latter objective is particularly important in the context of the fight against financial exclusion and inequality, one of the major barriers to economic and social development in India.[61]

Despite the Indian government's goodwill, the immediate aftermath of the demonetisation decision saw an Indian society neatly broken into two sides, along a digital divide that exemplifies the inequalities of modern India.[62] On the one side were those with access to digital payments technology or bank accounts; mostly the rich and those living in the cities. Together with them were all the businesses that rely on e-commerce, and the various payments start-ups, which benefitted from the sudden need for Indians to use their services.[63] For those groups, converting money from cash into bank deposit was relatively easy, albeit costly. On the other side were the poor with very limited access to telecom networks and low digital literacy; those who were forced to queue for days at the banks to switch the old notes for the new ones, who had their cash payments refused and were essentially locked out of the economy.[64] Not surprisingly, the decision was immediately criticized by various commentators, who questioned the unnecessary hurry to execute the withdrawal of the notes, the absence of clear instructions and support from the government, and the actual ability of the measure to achieve the stated goals.[65] From a legal perspective, a few commentators suggested that the measure

[59] Amy Kazmin and Simon Mundi, 'India struggles to digest withdrawal of high-value banknotes', Financial Times (9 November 2016); Amy Kazmin, 'Counting the cost of India's cash shortage', Financial Times (5 December 2016); Kiran Stacey and Alyia Ram, 'India cash recall sparks jobs crunch, says industry body', Financial Times (9 January 2017)

[60] Prime Minister Narendra Modi, Speech on 8th November 2016.

[61] On financial inclusion, see World Bank, *Finance for All? Policies and Pitfalls in Expanding Access* (Washington DC: The World Bank, 2008); Stuart Rutherford, Jonathan Morduch, and Daryl Collins, *Portfolios of the Poor: How the World's Poor Live on $2 a Day* (Princeton: Princeton University Press, 2009)

[62] Kiran Stacey, 'India's note ban still causing pain one year on', Financial Times (7 November 2017)

[63] Simon Mundi, 'India Banknote Crunch Raises Profile of Online Payment Groups', Financial Times (7 November 2017)

[64] See, Ghosh, *Demonetisation Decoded,* note 10 above

[65] Not surprisingly, the decision polarized the discussion along political lines, often losing sight of the actual economics rationale underneath. Among the harshest critiques were Amartya Sen and Paul Krugman. See *Correspondent, Special. "'Demonetisation effects will last long"'. The Hindu.* Retrieved 2017-02-26; Natasha Sarin and Lawrence H. Summers, "Most Sweeping Change in Currency Policy in the World in Decades", available at http://larrysummers.com/2016/11/21/most-sweeping-change-in-currency-policy-in-the-world-in-decades/

violated key constitutional rights and constituted an undue abuse of power.[66] Not surprisingly, in the months after the decision, the Indian Constitutional Court has been flooded with cases on the demonetisation.[67]

IV. MONETARY TRANSITIONS AND PROPERTY RIGHTS

A lot has been said on the demonetisation's long-term impact on economic growth in India, its success in curbing black money and tax evasion, and in reducing financial exclusion.[68] Very little, on the other hand, has been said on the legal implications of the measure and its impact on property rights, in particular.[69] The uniqueness of the event in terms of the huge size of monetary conversion, and the mechanism of the conversion from cash into bank deposit and digital money, makes the 2016 demonetisation a very interesting case study in the analysis of the legal and institutional impact of monetary transition. More importantly, it helps to shine a light on the challenges faced by states when moving towards a cashless society. In this section, I will analyse the relationship between monetary transition and property rights.

A. *The Relationship Between Conversions and Property Rights*

The key legal challenges in any monetary transition, whether it entails a debasement, a demonetisation, or de-cashing, is to protect money-holders' monetary wealth while addressing whatever policy needs the measure aims at. Consequently, most monetary transitions entail heavy costs and end up constituting an informal tax for money holders. In early medieval England, the *renovation monetae*, the process whereby kings periodically changed the types of coins in circulation and declared invalid the old ones, forced individuals to procure the new

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[66] Alok Prasanna Kumar, 'Demonetisation and the Rule of Law', Economic and Political Weekly 19 (December 10, 2016); Indira Jaising, 'Demonetisation: Strictly, the PM Didn't Go by The Law', National Herald India (29 June 2017); Prashant Reddy, 'Is the Modi Government's Restriction on Bank Withdrawals Supported by Law?', Scroll.in (14 November 2016); Prashant Reddy, 'Post-demonetisation, Police Have Made Big Cash Seizures – Without the Power to Do So Under Law', Scroll.in (28 November 2016)

[67] LiveLaw Network, 'SC Refers 14 Petitions Relating To 'Demonetisation' To Constitution Bench', LiveLaw News (3 November 2017);

[68] V. Anantha Nageswaran and Gulzar Natarajan, 'India's Post-Demonetization Policy Agenda', Carnegie India (2017); Gabriel Chodorow-Reich, Gita Gopinath, Prachi Mishra, Abhinav Narayanan, 'Cash and the Economy: Evidence from India's Demonetization', NBER Working Paper No. 25370 (2018); Agrawal, S., 'Black Economy and Demonetisation' (2018); Banerjee, A., and N. Kala, 'The Economic and Political Consequences of India's Demonetization' (2017)

[69] See, note 66 above

coins by going to the mint and paying a fee to get the old coins melted.[70] This de facto imposed a tax on commerce in the same way the adoption of new digital payment methods now forces users to pay for the access to digital payment technology[71] Not surprisingly, even then, it caused uproar. One of the earliest modern treatises on money, the 14th century *De Moneta* by Nicholas Oresme, was written to challenge the social repercussions of such debasement. In the treatise Nicholas Oresme argued that lowering the metal content of coins imposed by Philip IV reduced purchasing power and affected particularly badly those owing fixed rents and receiving fixed wages.[72] In sum, it affected the poor.

The reason why monetary transitions are sometimes loathed is because they affect existing property rights. The institutional economics literature has demonstrated that economic development is dependent from a structured system of property rights that give individuals legal protection.[73] Without the certainty that property will be protected, and property rights enforced by law, firms and individuals will have to incur extra costs for the protection of their assets and will have less incentives to trade. For this reason, the right to property is one of the fundamental pillars of modern societies, protected in Constitutions and international treaties. For instance, according to Article 300A of the Indian Constitution, "No person shall be deprived of his property save by authority of law".[74] Yet, as the very same provision shows, the right to property always has to be balanced with the sometimes concurrent public interest of the state to achieve wider societal gains. The concept of 'compulsory purchase' or 'eminent domain' which allows the government to expropriate property from individuals for a price without their consent shows that the right of property is flexible enough to adapt to various societal needs.[75] As long as the reduction of property rights is imposed 'by authority of law' and according to predefined criteria, infringements of property rights are tolerated.

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[70] J.L. Bolton, *Money in the Medieval English Economy: 973-1489* (Manchester 2012), at 87-99.
[71] On the cost of monetary transitions in early medieval England see, Desan, *Making* Money, note 7 above, at 67-69
[72] Peter Spufford, *Money and Its Use in Medieval Europe* (Cambridge 1988), at 300-306. See also Desan, *Making Money*, note 7 above, at 169
[73] North, *Structure and Change in Economic History*, note 2 above; North, *Institutions*, note 2 above; North, 'Institutions', note 3 above, at 97; R. La Porta et al. "Law and finance". (1998) 106 Journal of Political Economy 1113; R. Rajan, and L. Zingales, "The emergence of strong property rights: Speculations from history", (2003) NBER Working Paper No. 9478; S. Johnson, J. McMillan, and C. Woodruff, 'Property rights and finance', (2002) 92 American Economic Review 1335; E. Glaeser et al, 'Do institutions cause growth?', (2004) 9 Journal of Economic Growth 271
[74] Constitution of India, Article 300A
[75] I. Kim (ed), *Eminent Domain: A Comparative Perspective* (Cambridge: Cambridge University Press, 2017)

Money in the form of notes is a particular kind of property right – in common law – a personal property right.[76] More specifically, in the common law, notes are considered a form of documentary intangible property, known in finance law as "chose in action".[77] Unlike physical property, notes are a form of property in which the property is a promise to pay embodied in a document – the banknote.[78] In their deposit-taking function and, especially, as guarantors of the money supply and money in circulation, central banks issue notes that, in theory, are redeemable upon request by whomever presents them at the bank. This is why now currency is, legally speaking, a liability for central banks. In the early days of central banking, notes were convertible into gold at a predefined rate. Since the demise of the Gold Standard era, however, we have moved to a concept of money as "fiat" currency, meaning that the value of the note is not a function of the commodity to which it is linked but simply of the credibility of the central bank as controller of the value of the money in circulation. More simply, the value of the banknote is whatever the state determines it to be. In practical terms, while notes are a liability of the state, a banknote holder can only exchange them for other fiat money of the same value.[79] Indeed, in most states, including India and the UK, notes are exactly the physical representation of a claim of an equal sum of money towards the central bank that issued them.[80]

The decision to demonetise notes does not by itself constitute a violation of the constitutional right to property.[81] Governments retain in the context of their role as guardians of the currency the right to change the legal tender, as much as to formulate monetary policies that by controlling the level of inflation influence the purchasing power of money. However, the decision to demonetise must be accompanied by the supply of an equal amount of money of different kind, so that the total amount of money in circulation is preserved, and individuals' property rights over their cash are not reduced. The conversion of notes, as bothering as it might be for the banknote holders, is fundamental for the preservation of their personal property rights over the currency as its value will not diminish. Moreover, it is fundamental to guarantee the same stability of the currency. Indeed, given that the economic value of money

[76] David Fox, *Property Rights in Money* (Oxford: Oxford University Press, 2008)
[77] Ibid, at 47
[78] Bamford, *Principles of International Financial Law*, note 36 above, at 19-20; Banking Act 2009, Section 208
[79] Bamford, ibid, at 22
[80] Ibid
[81] Some commentators, however, question the constitutional legitimacy of the measure. See, A. P. Kumar, 'Demonetisation and the Rule of Law', note 66 above

is a direct function of the trust in the government that issues it, as opposed to the nominal value of the notes as legal tender, any action that leads to a distrust in the ability of the government to control its commercial value will undoubtedly diminish its role in the economy. In practice, there are three types of conversions: conversion into cash, into bank deposits, and into electronic money (e-money). I will discuss the first two in this section. The third one will be analysed in the next section because of its complexity.

B. *Conversion from Cash into Cash*

Demonetisations most of the time entail a banknote swap. Legally speaking, banknote holders retain the right to convert their notes for new notes for an equivalent total value at no extra cost. Note swap is the most common strategy during demonetisations. Under UK law, if the Bank of England exercises its call-in power thereby withdrawing certain notes from circulation, it has nonetheless the same obligation to convert them into different notes of the same value if it is asked to do so by the banknote bearer.[82] Indeed, the Bank of England does not have any power to write off its outstanding liabilities in the form of notes under any circumstances and it remains liable for the value of the notes indefinitely.[83] The only change is the status of the demonetised notes that cease to be legal tender.[84] In the Indian 2016 demonetisation, banknote holders were giving the possibility to convert 500 and 1000 Rs notes for other denomination notes, including the higher denomination 2000 Rs notes.[85] The swap could be done at one of the 16000 banks in operation in India as long as it was done by the 31st of December 2016: six weeks from the announcement date.[86]

Yet, although the conversion guarantees that the total monetary value at disposal of the banknote holder does not change, the procedures to implement the actual conversion can nonetheless entail substantial costs. These costs might de facto reduce the purchasing power of notes and, hence, affect property rights. In monetary transitions, demonetised notes holders are usually given a certain amount of time to convert the old notes into new notes, after which the notes will not be convertible any longer. For instance, in the largest conversion ever done, the

[82] Currency and Bank Notes Act 1954, Section 1(5); see also, Bamford, *Principles of International Financial Law*, note 36 above, at 22-24
[83] Currency Act 1983, Section 3(4).
[84] Currency and Bank Notes Act 1954, Section 1(5);
[85] The Gazette of India: Extraordinary [Part 2, Section 3 (ii)]
[86] The date was eventually prolonged, but it nonetheless proved ineffective in reducing queues and chaos.

entering into force of the Euro in January 2002, banknote holders were advised of the incoming monetary change years in advance, and were given from ten to twenty years and, in certain cases, unlimited time to exercise their conversion rights, depending on the specific monetary circumstances of the country.[87] Giving a longer window to convert notes will reduce the risk of massive queues at the banks as holders will not be forced to rush to swap them for newly issued notes. Moreover, leaving a transition period in which demonetised notes are still free to circulate would reduce panic and give extra time for the payment system to adjust.

In the Indian demonetisation, the lack of proper preparation for the transition led to huge conversion costs, which ultimately amounted to an informal tax on banknote holders.[88] Even worse, perhaps, it amounted to a tax that impacted disproportionally on the poor. In order to guarantee secrecy, the government chose not to announce the demonetisation plan to anyone, including the higher management of the Reserve Bank of India (RBI). The RBI was the agency in charge of the Indian payment system and tasked with the printing of Indian Rupee notes. The lack of preparation on the side of the RBI meant that banks in charge of the actual swapping of the notes did not have enough notes of different denominations in their branches and ATMs. It took weeks before the RBI printed enough new notes and banks had enough supply of currency to disburse. Moreover, unlike for other demonetisations, the government did not give a transitional window during which the demonetised notes still had legal effect. Instead, the intervention made the demonetised notes illegal from the very next day and gave holders a grace period of only 72 hours after which no more transaction was to be allowed.[89]

The ultimate outcomes were days of queues in front of banks, and a sudden loss of wealth for the portion of the demonetised notes that could not be converted. In economic terms, the costs of transitioning were extremely high for those individuals whose labour-income to total-income ratio was high – in other words, with no savings - as one or two days of work lost queueing meant a sudden drop of 10% of monthly income. Some reports even mentioned deaths taking place at the queues due to the extreme heat.[90] Further to that, the inability to convert the notes within the stipulated time meant a sudden loss of wealth that could be paralleled only to a massive sudden currency depreciation or hyperinflation. Even here, those who bore the burden the most were those individuals who has no immediate access to banks,

[87] See, https://www.ecb.europa.eu/euro/exchange/html/index.en.html
[88] Kenneth Rogoff, 'India's Cash Bonfire Is Too Much, Too Soon', Financial Times (9 December 2016)
[89] Prime Minister Narendra Modi, Speech on 8th November 2016.
[90] Tim Worstall, 'India's Demonetisation Kills 100 People Apparently - This Is Not An Important Number', Forbes (8 December 2016)

such as people living in rural villages, disabled or impaired individuals. The low reactivity was due in part to the lack of access to proper information and guidance on the demonetisation decision and how to react.[91] In her research on what she defines as '*information poverty'*, Elfreda Chatman shows that marginalized groups have comparatively less access to information and, for this reason, are usually in the worst position to respond to crises.[92]

C. *Conversion from Cash into Bank Deposits*

More challenging is the conversion of notes into bank deposits that occurs with de-cashing. In this case, in order to protect existing property rights, the level of money in the form of notes in circulation is to be reduced, to be compensated with a parallel increase of money in the form of bank deposits. In contemporary financial systems, money is commonly understood as taking the form of bank deposits, which represent the large majority of money in circulation. Currency, on the other hand, accounts for less than 3% of the total broad money.[93] Currency, in turn, is largely made by notes, which in the United Kingdom account for about 94% of the cash in circulation, and by coins.[94] India, in this respect is very different from many other countries, as its monetary base has a much higher ratio of cash over deposit.

From a legal perspective, bank deposits and currency are two very different types of money. While bank deposits are IOUs from commercial banks to consumers, currency is an IOU from the Central bank to consumers.[95] Thus, conversions from cash into deposits means that when the banknote holder deposits cash into a private bank, the original liability of the central bank attached to the notes will disappear and, from the point of view of the banknote holder, it will be substituted with the liability of the bank towards its depositor. Hence, the banknote holder will not hold cash in the form of a banknote but only in the form of a credit balance towards its bank. The bank, in turn, will deposit all the notes to the central bank, which will convert them into central bank deposit.

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[91] Silvia Masiero, 'New Routes to Cashlessness? ICTs, Demonetisation, and the Indian Informal Economy', Presented at the Development Studies Association Conference: Sustainability interrogated societies, growth, and social justice (DSA 2017), Bradford, 6-8th September.

[92] Elfreda Chatman, "The impoverished life-world of outsiders", (1996) 47 Journal of the American Society for Information Science 193; E. Chatman, "A theory of life in the round", (1999) 50 Journal of the Association for Information Science and Technology 207.

[93] Helen Allen and Andrew Dent, "Managing the Circulation of Banknotes", Bank of England Quarterly Bulletin Q4 (2010), at 302

[94] McLeay, "Money in the Modern Economy", note 22 above, at 5

[95] Ibid at 4

The same would apply, even if a government decided to convert cash into a new e-currency, in which case the notes shall be substituted for e-cash on par.[96] From a macroeconomic perspective, a conversion of cash into a non-cash instrument - which in theory could also entail virtual currencies in the future - would probably be beneficial for banks as it would increase liquidity in the banking system and, therefore, lead to credit creation.[97]

However, the same conversion could impose transaction costs on individuals. At the outset, it is important to stress that cash provides fundamental challenges, such as the risk that the banknotes might being lost, damaged or stolen, which in turn does add a cost on the money holder, especially the only savings are in the form of banknotes. Yet, the conversion from cash to bank deposits is not free form risks either. On a general level, it would mean that since all their assets would be in the form of bank deposits, individuals would now have to bear the risks of bank insolvencies or bank liquidity problems. Essentially, this moves the financial risks of cash from the State – which is always responsible for the currency in circulation – to individuals. On a micro-level, it means that every monetary transaction would incur a fee, thereby increasing the costs of making payments, not to mention the time costs of traveling to the nearest branch to perform the payment. Indeed, the value of money is made by the nominal value of the money and the cost of using it. If, for instance, getting cash would cost a day-worth of work, then the value of notes would increase. We can see that from the history of notes in the 18th and 19th century United States. Notes issued by a bank in St Louis would not trade at par when used in New York, but they were worth less. More specifically, they were worth the face-value of the note minus the cost of travel that someone would have incurred to redeem them in gold at the issuing bank.[98]

From a policy perspective, while de-cashing does protect existing property rights on paper, it does not always achieve this in practice. Transferring the credit risk from the state to banks does not pose problems as long as mechanisms are in place to protect bank creditors: chiefly among them, strong prudential and supervisory frameworks and a deposit insurance scheme.

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[96] Morten Bech and Rodney Garrath, "Central bank Cryptocurrencies", Bank for International Settlements Quarterly Review 55 (September 2017), at 10;

[97] One might argue that if cash is sudden converted into bank deposit, banks will receive a direct boost in their liability side as the level of deposit will increase. This is not necessarily a bad thing as liability will then be used to finance the bank's lending or investment operations in the asset side. Moreover, the total liability of the banking system will not change – although they will change between banks - as the cash circulating in the economy is distributed by banks through their retail operations. So, an individual withdrawing cash, will always do it by taking money from his deposit account.

[98] Gary Gorton, *Misunderstanding Financial Crises: Why We Don't See Them Coming* (New York: Oxford University Press, 2012), at 14

This, however, is not possible in many developing countries as the financial and institutional systems are not robust enough, and deposit protection is very low or inexistent. Yet, the biggest legal challenges are faced by those that do not have a bank account: mostly the poor. For them, unless the monetary transition is accompanied by regulatory measures that make it easier for unbanked individuals to open bank accounts, there is a very high risk that de-cashing would amount to an expropriation.

V. ACCESS TO TECHNOLOGY AND PROPERTY RIGHTS

The third type of monetary transition envisages a conversion of cash into e-money to perform digital payments, mostly through mobile phones, e-wallets, or cards. In the 2016 demonetisation, neither Prime Minister Modi's speech nor the Gazette of India official notification mentioned the transition to a cashless society as a stated objective of the demonetisation.[99] Yet, one of the key narratives in the immediate aftermath of the decision was that demonetisation was essential to encourage the use of e-payment mechanism to move India into a cashless future.[100] This initiative was part of the broader *Cashless India* campaign to propel the country into a digital payment economy.[101] In fact, the very next day after the announcements, many Indian newspapers published advertisements of digital payment services on their front-page, while advocates for the switch to digital payments immediately welcomed the PM's decision.[102]

A. *Conversion from Cash into E-Money*

Since the early 2000s, technological innovations in payments led to the emergence of a new generation of payment providers, mostly offering retail payment solutions. Unlike their predecessors (and now, competitors), digital payment providers offer payment services outside of the classical payment network and instead rely on software-based solutions to intermediate funds. These new payment services, like Apple Pay, PayPal, Alipay, and M-Pesa, to mention just the best known, bypass the cash and banking channels, and instead rely on mobile phones

[99] The speech did not refer at all to digital payments, while the Gazette merely stipulated the possibility to convert demonetised notes into 'mobile wallets, electronic payments, or the like'. See, Gazette of India, Section 2(vii)
[100] Reddy, *Demonetisation and Black Money*, note 10 above, at 87-101
[101] http://cashlessindia.gov.in/
[102] Reddy, *Demonetisation and Black Money*, note 10 above, at 4.

apps, e-wallets available on phone or online, or, more rarely, cards.[103] The rise of digital payments is occurring all over the world and many commentators predict this to be the future of retail payments. For this reason, understanding the mechanisms of monetary transition from cash to e-money is all more important.

Despite the huge variety in digital payment solutions, we can identify two types of digital payments, each one of them entails different conversion costs.[104] The first type simply entails a transfer of bank deposits from one depositor to another through the use of a bank's phone app or the internet, which simply transmit payment instruction to the originating bank or point of sale. Thus, while payments are processed electronically via a mobile phone app or through a card, there is actually no difference between these and a payment through an electronic bank transfer. When it comes to transition costs, both the payer and the payee need to have a bank account, and since the funds are intermediated through their banks, the analysis in the previous section IV(c) applies.

More interesting is the second type of digital payment. This time, the value intermediated is in the form of virtual currency or 'e-money', rather than bank deposit. This is by far the most common way of performing e-payments in developing countries as many payers are unbanked and living in areas where financial infrastructures are inexistent. In this case, the issuing institution, usually a telecom company or a bank, issues the virtual currency – the 'e-money' - in exchange for cash or deposit money. The e-money is a digital representation of value denominated in fiat currency that is stored in a virtual account called e-wallet available on phones or cards.[105] This e-wallet is nothing more than a service to store and visualize the quantity of e-money available to the user, and to perform payment transfer of e-money to other

[103] See, ACI Universal Payments, Global Consumer Survey: Consumer Trust and Security Perceptions (February 2017), at 7-9; Wendy Matheny, Shaun O'Brien, and Claire Wang, "The State of Cash: Preliminary Findings from the 2015 *Diary of Consumer Payment Choice*", Federal Reserve Bank of San Francisco (November 3, 2016); Shaun O'Brien, "Understanding Consumer Cash Use: Preliminary Findings from the 2016 Diary of Consumer Payment Choice", Federal Reserve Bank of San Francisco (November 28, 2017); Trinh Tu and Cheryl Salmon, *Uses of Cash and Electronic Payments*, Ipsos MORI Social Research Institute (London: HM Revenue and Customs, 2016)

[104] A third type of digital payment entails the transfer of virtual currency, such as Bitcoin, from one user to another. In this case, the user can either purchase the virtual currency with bank-deposit or e-money from one of the various virtual currency exchanges, or acquire the virtual currency by performing specific payment processing function (a function usually called 'mining"). Given the complexity of virtual currencies and the relatively low rate of use among the poor, I did not include them in the analysis. See, He, "Virtual Currencies and Beyond", note 16 above.

[105] Electronic money (e-money) is defined in the UK *Electronic Money Regulation 2011* s 2(1) as 'electronically (including magnetically) stored monetary value, represented by a claim on the issuer, which is issued on receipt of funds for the purpose of making payment transactions.'

e-wallets holders.[106] Key for these digital payment systems is the use of agents, which not only intermediate e-money through their accounts, but crucially act as 'human' bank branches signing up new clients and disbursing cash in exchange for clients' e-money.[107]

B. *Access to Technology as a Transition Cost*

Mobile payments are now considered one of the essential tools for financial development.[108] Not surprisingly, economists, politicians, and various organizations welcomed a more widespread adoption of digital payments. In the Indian Government's original plan, the de-cashing of high-value notes would have spurred the use of e-payment systems such as PayTM or PhonePe, in lieu of cash. The (apparent) reasoning behind this was that those cash-holders who could not or did not want to convert their cash into deposits or new currency, would have converted their cash into e-money through one of the various mobile payment systems available in India. Yet, evidence shows that the shift from cash to digital payments entails substantial transition costs as it requires that all users be digitally included: in other words, to have access to digital payment technology.

The first problem is of a financial nature. The literature on digital finance, for the most part, does not take into full consideration the total costs of purchasing a mobile device for individuals. Although mobile banking for development does not need sophisticated smartphones to operate payment platforms, very basic mobile phones being sufficient, it is not necessarily true that purchasing and using a mobile phone with payment technology does not require a financial effort from certain parts of the population. Even though mobile phones can be purchased cheaply, their cost-to-income ratio is not negligible for a family that survives on less than two dollars a day.[109] For instance, even in a country with a very high level of mobile penetration such as India, 35% of the adult population still does not have access to mobile

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[106] On this see, Biagio Bossone, 'Electronic Money versus Money: An Assessment of Regulation', in VOX CEPR's Policy Portal (25 January 2017).

[107] For instance, a new user might approach an agent and, once he has joined the mobile banking network, might ask the agent to convert some banknotes into e-money. The agent will transfer e-money from his e-wallet to the client's e-wallet for an amount equal to the cash it has received. The new user will then be able to perform mobile payments to new users or ask another agent to redeem its e-money for cash when he needs it. Agents will ultimately be able to redeem the value of their e-money from cash or into bank deposits from the e-money issuer. See, P. Davidson and N. Leishman, 'Building, Incentivising and Managing a Network of Mobile Money Agents: A Handbook for Mobile Network Operators', GSMA Mobile Money for the Unbanked

[108] See, for instance, World Bank, *Financial Inclusion: Global Financial Development Report* (2014); World Bank, *Digital Dividends: World Development Report* (2016).

[109] Rutherford et al, *Portfolios of the Poo*r, note 61 above

telephony.[110] In the least developed countries, this percentage can be much higher. Moving to digital payments would leave 35% of the population without any access to commerce. While large transactions can offset the cost of technology, this is not the same for small transactions. The difference is particularly important because small transactions are predominant among the poor, who very seldom engage in medium and large payments.[111] Thus, e-payments command a premium for the poor that does not apply to more wealthy individuals.

More importantly, social studies have demonstrated that lack of literacy, and especially digital and financial literacy, can prevent access to digital payments. [112] For a person who is unable to read and write and has very limited understanding of the role of banks, moving from cash to e-payments requires a huge leap of faith. Individuals might not be able to read the instructions on the phone, or simply not understand that a mobile phone message would constitute a payment.[113] Indeed, it is a well-known problem that a lack of digital literacy and financial literacy is responsible for the distrust against mobile banking widespread in rural villages where the level of education is lower.[114] Moreover, studies show that digital illiteracy can easily lead to abuse and fraud against payment users. Mobile banking agents, who act as intermediaries between mobile banking operators and end-users, might defraud customers, for instance by transferring money to their own account without the customer's knowledge.[115]

Finally, in order to function, mobile payment and electronic payments need a very extensive and reliable telecom network and infrastructure.[116] Indeed, without extensive coverage,

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[110] Telecom Regulatory Authority of India, Press Release - Highlights of Telecom Subscription Data as on 31st August 2016

[111] See, Rutherford et al, *Portfolios of the Poo*r, note 61 above

[112] Alliance for Financial Inclusion, *Mobile Financial Services: Regulatory Approaches to Enable Access* (2010); Franklin Allen et al, "The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Account", World Bank Policy Research Working Paper 6290 (2012); Era Dabla-Norris et al, "Identifying Constraints to Financial Inclusion and Their Impact on GDP and Inequality: A Structural Framework for Policy", IMF Working Paper WP/15/22 (2015); Center for Global Development, *Financial Regulations for Improving Financial Inclusion* (2016); World Bank, *Finance for All? Policies and Pitfalls in Expanding Access* (Washington: The World Bank, 2012)

[113] Antonique Koning and Monique Cohen, 'Enabling Customer Empowerment: Choice, Use, and Voice', CGAP Brief (2015)

[114] Kyle Holloway, Rebecca Rouse, and William Cook, "How Do Mobile Money Fee Structure Impact the Poor?" (CGAP, 2017); Kiendel Burritt and Gerhard Coetzee, "Customer Centricity and Financial Inclusion: Lessons from Other Industries" (CGAP 2016);

[115] Joseck Luminzu Mudiri, 'Fraud in Mobile Financial Services', Microsave (2013); Kate Lauer et al., 'Bank Agents: Risk Management, Mitigation and Supervision', CGAP Focus Note 75 (20111); Katharine McKee et al., 'Doing Finance Right: The Case for Stronger Mitigation of Consumer Risk', CGAP Focus Note 103 (2015);

[116] Sameer Govil, Perspectives on Accelerating Global Payment Acceptance (Visa, 2016), at 26-28

merchants and consumers will be unable to operate even the most basic transactions.[117] In this regard, empirical literature shows that distrust of the reliability of the telecom network can discourage potential new customers from signing up to mobile payment schemes and, more worryingly, lead to fraud and permanent loss of customers who decide to return to cash.[118] In India, where power outages are common, and where the internet infrastructure is not well developed, digital payment infrastructures cannot be relied upon as the main channel to support the payment system.

Fortunately, in the Indian demonetisation, demonetised note holders were not confined to the use of e-payments. Yet, the challenges of converting cash into digital payment experienced in India can teach an important lesson for the future, as all countries sooner or later will have to move to a less cash-intensive economy. Indeed, there is increasing evidence that behavioural challenges in using and understanding e-payments, and network and coverage problems can indeed constitute huge barriers to the successful rise of a cashless economy everywhere, including the UK.[119]

VI. CONCLUDING OBSERVATIONS ON DEMONETISATIONS AND SOCIAL EQUALITY

The 2016 Indian demonetisation in many ways exemplifies the challenges of monetary transitions. As correctly argued by Christine Desan, money is first and foremost a constitutional project: a governance strategy orchestrated by policymakers to mobilize resources.[120] In this light, the Indian demonetisation situates itself in the struggle to achieve useful monetary innovations and enhanced security, while at the same time preserving property rights and social equality. This paper showed that monetary changes can entail substantive transition costs. These are, unfortunately, disproportionally higher for the poor and other marginalized groups, as they, more than others, rely on cash, very rarely have bank accounts, and are much less familiar and confident with digital payment technology. Ultimately, transition costs undermine

[117] CGAP, *Mobile Payments Infrastructure Access and Its Regulation: USSD* (CGAP, 2014)
[118] CGAP, *Understanding How Consumer Risks in Digital Social Payments Can Erode Their Financial Inclusion Potential* (CGAP, 2016), at 1
[119] Access to Cash, *Access to Cash Review: Final Report* (2019);
[120] Christine Desan, "The Constitutional Approach of Money: Monetary Design and the Production of the Modern World", in N. Bandelj, F. Wherry, and V. Zelizer (eds.) *Money Talks*

existing property rights and, thus, lead to wealth reduction, insecurity, and weakened confidence in monetary institutions.

A. *Transition Costs and Property Rights: A Recap*

In the context of a monetary change, the transition from one form of money to another, although motivated by compelling policy reasons, should not occur at a cost to money holders, who enjoy pre-existing property rights over their cash. Just as there would be a violation of the right to property over a piece of land if the access is suddenly blocked, so does any measure that makes it more difficult for money holders to convert their demonetised cash into new money. When notes are declared invalid without any means for people to change them into e-money or deposit, or more difficult to convert them in other denomination notes, then those people will find themselves locked out of the payment system with no way to use their cash. This is nothing less than an expropriation, and as such it should be motivated with precise reasons of public interest. [121] Hence, if we can draw one key lesson from the Indian demonetisation, this is that for monetary transitions to respect property rights, it is necessary that for every single citizen, the reduction in circulating money is mirrored by a parallel increase in bank-deposits or electronic money. In other words, it requires an institutional guarantee that a banknote holder possessing 40.000 Rupees in demonetised cash savings will retain the same amount of money in the new form without having to incur fees or extra costs. Only then, can monetary transitions achieve social equality.

In order for a monetary transition to work, it is first and foremost necessary to guarantee that conversion costs are minimized. Preparation is essential and that is, primarily, a government's duty, no different than ensuring good bank supervision or preventing counterfeit notes. First, as I argued earlier, sudden changes are cataclysmic for the economy as they only lead to chaos and increased uncertainty. Thus, it is necessary to notify in advance of the forthcoming monetary change in order for citizens and firms to prepare, or to give enough time for the conversion to be completed. In the Indian case, the ATM and bank branch infrastructures were not adequately prepared to disburse new bank notes, which left millions of demonetised note

[121] Namita Wahi, "Is the Current Demonetisation Legal?", Centre for Policy Research (6 December 2006), available at http://cprindia.org/news/5692; P. Reddy, "Is the Modi Government Restriction on Bank Withdrawals Supported by Law?", Scroll (14 November 2016), available at https://scroll.in/article/821484/is-the-modi-governments-restriction-on-bank-withdrawals-supported-by-law

holders without any money to spend. Second, in the transition from cash to new legal tender notes, it is necessary to guarantee that note holders will incur no extra requirements to convert their notes, and no limits on the amount of money in demonetised notes that can be converted. Any extra fee is, essentially, a tax on the use of money use and, as such, should not be imposed arbitrarily. More importantly, to use such a fee as an extra rent for private companies such as banks or e-payment operators should be avoided at all cost.

More critically, monetary transitions need to guarantee equal access to the payment mechanisms to which users are transitioning to. For instance, in the transition from cash to bank deposits or e-money, it is necessary to deploy policies that guarantee free access to banks for all individuals, and the availability of e-payment methods easy enough to operate for individuals with no digital literacy and at no extra cost. In a country like India where 50% of the population does not have a bank account, the Indian demonetisation ended up leaving unbanked note holders unable to convert their currency into deposits, thereby expropriating them. It was even more complicated for individuals to mobilize cash through the mobile payment system.

B. *Discriminations*

In the context of monetary transition, it is also important to guarantee that the shift from one type of money or payment to another does not disproportionately affect certain groups over others. Since in fiat monetary systems the value of money is set by the state, in the exercise of its power to decide what constitutes money and what qualifies as legal tender, governments have not only an obligation to manage inflation, but also the concurrent obligation to guarantee that 1 state-unit of money in the form of bank note is no less valuable than 1 unit of money as bank deposit or e-money. Any measure that differentiates by law or in practice different types of money by making them more expensive can only lead to inequalities, as it will have impact certain social groups more than others.

The Indian demonetisation achieved the very opposite. It imposed a series of requirements that favoured digital payment users over bank users, and favoured bank users over unbanked cash holders. In the 2016 Indian demonetisation, note holders were given incentives to convert notes into bank deposits. The *Gazette of India* notification on demonetisation published the next day explicitly discriminated between banked and unbanked note holders. While holders of demonetised notes with a bank account could convert them into bank deposit with no limit,

unbanked individuals could convert them into cash only for a total amount of 4,000 Rs.[122] Moreover, no requirement was imposed on the conversion of money into e-money through mobile wallets or credit cards. While justified with the need to control black money, those requirements impacted disproportionately more on the poor.

[122] The Gazette of India: Extraordinary [Part 2, Section 3 (ii)]