Chapter 1
On the Role of Cash in East Asia

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Abstract While due to technological development, the notion of cash is changing, the function and future of cash is entering the monetary debate. Proponents of a cashless society point to cost considerations, the prospect of widening anti-deflationary monetary policy into the realm of negative interest rates, as well as the chances of repressing the shadow economy. As such expectations are being contested, the discussion of the pros and cons of a cashless society is in full swing. Against this backdrop, the contributions to this volume analyse the use of cash in various East Asian economies or examine specific aspects of cash usage. Taken together, the contributions show that many issues related to cash still remain without a solid research foundation. Any top-down moves to reduce the role of cash or to head towards a "cashless society" should therefore be taken with great care and only gradually.

Not long ago, cash—here defined in the narrow and physical sense as banknotes and coins—played no role in monetary policy discussions or in the considerations of monetary economists. Cash was a given, the manifestation of money itself. Its administration and logistics have certainly been a complex undertaking, but a purely technical one, which could be left to the specialists in this field. Other methods of payment evolved more and more, but were built on the fundament of cash. Even if cash became the smaller part of the monetary base or monetary aggregates like M1 a long time ago, people considered the use of debit and credit

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cards just as a convenient means not to carry their money, i.e., their cash, around all the time, but to leave it in a safe place. This has been most visible in times of financial uncertainties or crisis, when people regularly lined up at banks to withdraw their money as banks were no longer considered safe.[1]

This notion of cash has been challenged in recent years, and, as a result, the function and future of cash entered the monetary policy debate and also slowly came under academic scrutiny. One reason for this has been technological development. Cash plays virtually no role in the important and growing area of e-commerce. Even in person-to-person transactions, cashless payments—using debit cards, credit cards, prepaid cards and electronic wallets—are ever more convenient and easy to use. Hand in hand with this development, public authorities have embarked on influencing the use of payment methods. Cashless payment is being promoted and, in some cases, even required—the payment of taxes in Germany for example—despite cash still being the only legal tender in most countries. Many countries have also moved towards putting caps or strict reporting requirements on cash payments beyond a certain amount.[2]

Out of this development, the vision of a "cashless society" has emerged. As the use of cash decreases naturally, this trend can—and maybe should—be enforced by various incentives and regulations. In the end, cash can be abolished altogether. A prominent academic proponent of this idea is Kenneth Rogoff.[3] Explicitly embarking in this direction are countries such as Sweden, Denmark and India, although the latter case also shows the pitfalls of moving too quickly, too abruptly, and largely unprepared in this direction.[4]

Proponents of a "cashless society" regularly refer to its three main benefits:[5]

(1) The supply and the use of cash are costly. Non-cash electronic payment methods not only reduce the transaction time at the point of sale, but also allow for a gradual dismantling of the physical infrastructure for handling cash. Non-cash payment methods, including more recent instruments such as electronic wallets and digital currencies, are rapidly evolving, thereby offering ever more choice and convenient handling.

    The assumption behind this argument is that the cost of non-cash payment and its supporting infrastructure is lower than that of cash.

[1] Laeven and Valencia (2008).

[2] Letzing (2017).

[3] Rogoff (2016).

[4] On 8 November 2016, Indian Prime Minister Narendra Modi made the surprise announcement that all 500- and 1000-rupee notes, amounting to more than 85% per value of the cash in circulation, would be withdrawn in order to fight illicit activities, corruption, terrorism, and to lead India to a modern pathway of a cashless society. Most Indians, however, do not have bank accounts and the newly designed 500- and 2000-rupee notes as substitutes were not sufficiently available yet. Social unrest occurred and the economy was damaged by slowing sales and production already in the two months following Prime Minister Modi's announcement; see Frankfurter Allgemeine Zeitung (2017) and The Economist (2016).

[5] Beer et al. (2015, p. 1).

(2) Cash is the preferred means of payment for all kinds of shadow economy dealings enabling tax evasion, crime and even terrorism, as it allows the anonymity of all the parties involved. Non-cash payment methods, on the other hand, are recorded and traceable.

The assumption behind this argument is that, with the restriction of the use of cash or its abolition, such illicit activities could be pushed back.

(3) Cash can become a hindrance in the proper conduct of monetary policy. Once the so-called zero lower bound is being approached, lowering interest rates further ceases to be a valid option, because people might withdraw their money to avoid paying negative interest rates.[6] However, negative interest rates might be the best way to fight deflationary tendencies or even deflationary contractions. This argument has gained traction by the notion of a "secular stagnation", which implies a negative equilibrium real interest rate.[7] The massive programmes of quantitative easing devised by several major central banks with all their side-effects of blurring the line between monetary and fiscal policy might not be necessary if interest rates could be reduced significantly below zero.

This argument implies that the setting of negative interest rates is just a natural extension of the conventional monetary policy, which has been artificially restrained by the existence of cash. In this view, the zero lower bound is not a natural barrier against unsound financial repression, but simply a hurdle which can and should be overcome by technical progress.

These arguments proposing a "cashless society" are being countered in two ways. On the one hand, critics doubt whether the asserted benefits could prove true in reality. On the other, they fear negative consequences once cash is abolished.[8] The critics expect that the benefits of a "cashless society" would be accrued, above all, by the financial industry, whereas private citizens would only face higher costs, less choice, less security, less ease and less privacy.[9] In addition, the seigniorage of central banks, the profit accrued by creating cash, would shrink. Furthermore, critics are sceptical of the alleged containment of criminal and black market activities, since the incentives for illegal behaviour remain the same and cash substitutes would be available soon. What is more, negative interest rate payments could be avoided or at least mitigated by various acts of arbitration or speculation,

[6]Rogoff (2016, pp. 119–146), for an overview and Agrawal and Kimball (2015) for a method of breaking the zero lower bound despite the existence of cash.

[7]"Secular stagnation" describes a situation of prolonged low to negative growth. Recent discussions have focused on the possibility of an oversupply of savings. Such an oversupply could only be brought to an equilibrium with investments, if the real interest rate—which can be derived at by deducting the rate of inflation from the nominal interest rate—becomes negative; see Summers (2014), and Weizsäcker (2015).

[8]See, for example, Rösl and Seitz (2015, pp. 525–528).

[9]Häring elaborates on the potential misuse of data gained by the use of electronic payment methods. Häring (2016, pp. 85–111).

for example, advance payments of taxes and invoices, or the flight into central bank money substitutes such as Amazon vouchers, Bitcoins or tradeable money market certificates. Last, but not least, negative interest rates could have various detrimental side-effects such as waste of capital and the creation of financial or real estate bubbles.

The debate on the pros and cons of a "cashless society" is in full swing. It is noteworthy, however, that the controversially and ideologically led discussion is lacking a solid empirical foundation. It is against this background that this volume is looking into "Cash in East Asia". Being aware that cash is much more than a technical issue, the contributions in this book analyse the use of cash in various East Asian countries and examine specific aspects of cash usage. The East Asian experience is furthermore contrasted with some European cases.

Masaaki Shirakawa takes the example of Japan in order to analyse the role of cash in a modern economy. He starts off from two observations: Firstly, the cash to GDP ratio has been on the rise in various economies, most notably in Japan. Secondly, there are marked differences in the use of cash and in the tendency to hold cash between countries.

Important reasons for the increased cash to GDP ratio in general include the low level of interest rates in most industrialised countries, which reduces the opportunity costs of holding cash, and precautionary motives. In times of financial turbulence and crisis, people resort to holding significant amounts of cash as a presumably secure store of value.

There is a mixture of reasons for why Japan appears to be the country with the highest *cash to GDP ratio* in international comparison. Japan is a very safe society with a low crime rate and low risks of theft and robbery. The high population concentration furthermore arguably induces many direct person-to-person interactions, which are still most easily settled by cash. This is further corroborated by the demographic change, as elderly people tend to be more reluctant to change their habits, i.e., to switch from cash to cashless payment methods. A dense network of ATMs supports the *status quo*. Finally, a strong drive to preserve privacy among the Japanese people in view of recent technological change is assumed to be an important reason for the unwavering use of cash.

From these cultural features, it can be concluded that the use of cash is strongly influenced by the characteristics of a specific society. In all societies, however, cash is the only means for private individuals to access central bank money directly and thus remain independent of the private banking industry. In times of systemic banking failure caused by a financial crisis, natural disasters or large-scale terrorist attacks, it may thus have an important bearing on the protection of individuals and on financial stability in general.

Against this background, Shirakawa moves on to assess the major arguments for the abolition of cash:

- The benefits of negative interest rates remain fuzzy at best, whereas the forced reduction of the use of cash may cause major disruptions in society.

- There is no proven link between the usage of cash and illicit activities. Japan is a prime example of a safe society with overall low levels of crime and high cash holdings.
- The Bitcoin and other digital currencies based upon new technologies such as the blockchain technology still have a long way to go before they may be widely accepted as a general substitute for cash.

Shirakawa concludes that cash will continue to play an important role in most countries and that moves towards reducing the use of cash should be carried out only gradually.

Friedrich Schneider provides estimates for the relative sizes of the shadow economies of eleven Asian countries: Bangladesh, Cambodia, China, Indonesia, Japan, Laos, Malaysia, the Philippines, South Korea, Thailand, and Vietnam. Using the multiple indicator multiple causes (MIMIC) approach,[10] his econometric model shows a wide range in the size of Asian shadow economies in relation to the official GDP in the period of 2000–2014, starting at 9% in Japan and reaching up to 45% in Cambodia.

The shadow economy plays an important role in the discussion about cash, as an estimated 80% plus share of all shadow economy transactions are conducted in cash. It can be argued, therefore, that a cashless society would limit and restrict shadow economy activities.[11] According to Schneider, however, cash is not a cause of the shadow economy. Cash is just an indicator of the level of shadow economy activities in a similar way as the labour force participation rate or the growth rate of the official GDP *per capita*. The real causes of the shadow economy in Asia are rather different, in particular tax and social security contribution burdens, the intensity of regulations, the quality of public sector services and public institutions, as well as the state of the official economy.

To reduce shadow economy activities, several incentive-oriented policy measures are suggested, such as a reduction of indirect tax rates and the deregulation of the official economy. Moreover, the promotion of the use of credit cards can also work in this direction. The abolition of cash, however, would only increase the transaction costs for shadow market activities and would not work to diminish them significantly. Simulations for European countries indicate that, with the abolition of cash, the shadow economy would be reduced by no more than roughly 10%.

Rüdiger Frank takes up the monetary history of North Korea, focusing in particular on the process of re-monetisation within the last two decades. The extreme case of North Korea shows that both de-monetisation (by political design) and re-monetisation (by economic necessity) are technically feasible. Further lessons can be deduced: first, the way a monetary system is organised and managed has a profound influence on the behaviour of people whatever the cultural and political circumstances. Second, “shadow market activities”, which are illegal and

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[10] Kirchgässner (2017) provides an overview and critique of this and other approaches for estimating shadow economies.

[11] See, for example, Rogoff (2016, pp. 58–79).

considered morally improper in democratic countries, can be the only means of basic well-being or even survival in repressive states.

From the 1950s to the mid-1990s, North Korea could be characterised as a widely de-monetised country in the sense that, although money existed, it was severely restricted in its functions. Goods and services were provided by the state-run distribution system upon the basis of allocations and quotas. Prices were centrally regulated and had no signalling function. Access to goods and services thus depended on political and social capital, and not on money.

This system broke down in North Korea's great famine in the mid-1990s. The central distribution systems virtually collapsed and even staple food could not be provided for the populace, thereby putting their physical survival at risk. To preserve stability, the government tolerated the resurgence of the previously sidelined private farmers' markets, where goods could more or less be freely traded. Money started to matter again with the domestic *won* functioning as the main means of exchange and storage of value alongside foreign currencies.

The ever growing importance of markets supported by the cautious economic reform of 2002 induced modest economic development over the last two decades and even provided opportunities to give rise to a middle class. Fearing a loss of control, the government tried to scale back market activities by means of a currency reform in 2009: the old currency was replaced by a new one, and only a limited amount of cash was allowed for exchange. The main goals of this forced reduction of private cash holdings were to expropriate the middle class and curb inflation. However, since some traders managed to convert their savings into foreign currencies beforehand and the parallel wage increases resulted in an inflationary push, the reform turned out to be a complete failure. Markets continued to thrive and, as a consequence of the loss of trust for the *won*, private transactions were mostly conducted by the more trusted Chinese Yuan. Nowadays, domestic and foreign currencies exist in parallel and they are serving dual or even triple distribution structures. In addition, the North Korean government has introduced cash cards, but their functioning is dependent on critical infrastructure such as a stable supply of electricity and data connection.

Hwee Kwan Chow undertakes to analyse the relationship between domestic liquidity conditions and monetary policy in Singapore. As a very open economy depending on free trade and capital flow, Singapore has adopted an exchange-rate centred monetary policy framework.

Under this system, the value of the Singapore dollar (SGD) is monitored in terms of a currency basket. The Monetary Authority of Singapore (MAS), the central bank, is setting a target exchange rate and a policy band around it, within which the currency is allowed to float. Fluctuations beyond the band are avoided by currency market interventions. Under this framework, the SGD appreciated steadily, albeit in a controlled way, over the last decades, reflecting Singapore's strong economic performance.

Interventions by the MAS usually served to stem stronger appreciations of the SGD and thus tended to increase domestic liquidity, giving rise to potential inflationary pressures. A high national savings rate, however, which is rooted in contributions to a government administered compulsory saving scheme, and long-run state budget surpluses, are offsetting the effects.

Cash in circulation does not carry a high weight as a money market factor in Singapore. The ratio of cash to M1 dropped from about 50% in 1991 to around 20% in 2015. This trend has been supported and driven by the *National Campaign to Minimise Cash Transactions* launched in 1985 with the primary objective of saving manpower and increasing productivity.

Singapore thus seems to be heading towards a society with a minimum use of cash without strong coercive measures by the government in this direction. A track-record of prolonged economic growth, low inflation, strong institutions and, arguably, high trust between the government and its people appears to be very conducive for this trend.

Franz Waldenberger proposes a shift to a fully reserve-backed money regime (FRBM) in Japan as a solution to the countries fiscal and monetary challenges. An FRBM requires banks to keep the full amount of their depositors' funds as reserve money at the central bank. Such a change would also have the side-effect of reducing the private cash holdings resulting from safety considerations.

In the course of quantitative and qualitative easing (QQE), starting in April 2013, the Bank of Japan (BoJ) has increased its monetary base on a large scale. A massive purchasing programme for Japanese government bonds is supposed to suppress deflation and make a 2% inflation rate possible. The already high fiscal debt burden increased to a gross debt to GDP ratio of 230% by 2015. By mid-2016, the BoJ already owned 35% of all government bonds.

However, this situation appears to be unsustainable in the long run. It is unclear how the government will consolidate its debts and how the BoJ will exit from its ultra-expansive monetary easing policy. A severe trade-off between fiscal crisis and price stability might occur.

A solution might be the shift to an FRBM, in which all the money deposited in current bank accounts is subject to a 100% reserve requirement at the central bank. The main purpose is to deprive the private banking sector of the ability to create surplus liquidity, which is regarded as the crucial cause for the boom and bust of asset bubbles.

As a result of the large financial surpluses accrued by Japan's corporate sector, the demand for bank credit is very low, so that the commercial bank reserves held at the central bank already amount to a 47% share of the money in current account bank deposits. According to Waldenberger, this high share opens a window of opportunity for a shift to an FRBM system and the consolidation of government debt, too. Almost halfway of this route has already been accomplished. Further increasing the monetary base by purchasing government bonds would thus be a necessary step to complete the system change and, at the same time, alleviate the fiscal woes of the government. Under the FRBM system, demand deposits in current bank accounts would be as safe as cash, thereby reducing the demand for cash out of safety considerations.

The far-reaching proposal of shifting to an FRBM regime in Japan will certainly induce a vigorous discussion. It also underlines, however, that the use of cash is intimately related to the level of trust within a given society.

Woosik Moon focuses on the ongoing efforts in South Korea to realise a coinless society. The Bank of Korea (BoK) is seeking to eliminate coins as a payment instrument by the year 2020 for three reasons: first, it would reduce the social cost and the inconvenience related to the use of coins in economic transactions; second, the achievement of a coinless society can be seen as a test case for realising a cashless society; and third, the coinless project could finally pave the way for a smooth redenomination of the South Korean Won (KRW), which now stands at about 1200 KRW for 1 US Dollar.

In international comparison, South Korea is already one of the countries with the lowest cash usage ratios in the world. Important economic factors such as retail businesses are strongly in favour of eliminating coins, because of the high transaction cost associated with their handling. The case is also supported by the fact that coins account for less than 3% of the total cash in circulation, whereas banknotes account for more than 97%.

Various incentives to reduce the use of coins are employed based upon the good infrastructure for alternative payment methods in South Korea such as credit and debit cards, electronic cash receipts, prepaid cards and digital wallets. Small change for purchases can be credited to such devices, instead of being paid out in coins. This can furthermore be incentivised by granting bonus points or tax reductions.

Attaining a coinless society by 2020 may thus be a realistic target. This might have the important side-effect of also paving the way for a cashless society. Eliminating coins is expected to face much less fundamental resistance than eliminating all cash. In the meantime, the necessary infrastructure is being prepared and the necessary changes in the behaviour of people is being induced and encouraged for significant advances into the cashless society.

Patrick Hess analyses the evolution of payment instruments in China and the role of the central bank in this regard. Electronic means of payment have seen a steep increase since 2011, whereas the use of cash has been in steady decline. Regulatory steps to accelerate the deployment of point-of-sales equipment at retail level, the integration of payment functions into social media, low cost smartphones and the rapid growth of e-commerce have all been behind the continued growth of non-cash payments.

The growth of e-commerce has, in particular, been driven by the fierce competition for customers between the three Internet giants *Alibaba*, *Tencent* and *Baidu*, which are likened to the Three Kingdoms warring with each other in the period following the end of the Han dynasty (220–280 AD). This competition furthermore spurs financial innovation in various ways. In the course of these developments, the People's Bank of China (PBoC) is assuming a pivotal role, both as an active promoter and as a supervisor to assure the safety and reliability of non-cash payment systems. As a promoter, the PBoC operates five domestic interbank payment systems, and, as a regulator, it requires mandatory licences for all providers of non-cash payment services, for example. The PBoC furthermore regulates the use of Bitcoin, which has gained high popularity in China.

Although China embarked comparatively late on the use of non-cash payments, the actual development appears to be much more dynamic than in most other countries. Hess concludes, however, that cash is nonetheless unlikely to disappear in the foreseeable future and that the PBoC will continue to support the use of banknotes and its underlying infrastructure.

Erwin Gladisch provides an overview of the use of cash in Germany, where the issue is discussed broadly and often emotionally. The German case may thus serve as an interesting point of reference for other countries.

The chapter starts with the observation that the amount of cash issued by the Eurosystem has been rising continuously since 2002. Cash is still the most common means of payment in Germany. According to the *Bundesbank*'s empirical survey, almost 80% of all payment transactions, amounting to 53% of the payment value, are settled in cash at the point-of-sale. What is more, in times of financial crises such as in 2008 in the wake of the Lehman bankruptcy, the demand for cash tends to rise significantly in Germany.

As for the cost of cash, there is no indication that it is more expensive than other payment instruments. According to a study carried out by the European Central Bank (ECB), cash costs 0.42 € per transaction on average, which is much less than debit or credit cards with 0.70 € and 2.39 € respectively. EDEKA, one of the largest retail chains in Germany, reports costs for the whole cash handling of 0.14% of turnover as compared with 0.47% for debit cards.

There is only faint evidence of a direct link between cash, on the one hand, and tax evasion, crime and terrorism, on the other. For tax evasion mostly cashless instruments are of relevance as evidenced by an estimated 5.8 trillion euros worth of private assets in so-called tax havens. Chinese authorities even claim that cash is the simplest way to uncover illegal activities as it leaves traces and is easy to find, contrary to other payment methods.

Gladisch finally asserts that private industry groups have an interest in the drive for a “cashless society” hoping to earn fees and collect valuable data on consumer behaviour. Such a move, however, would not necessarily be a benefit to consumers. However, the latter may cherish a generally accepted, simple means of payment that can be used without any technical set-up, requirements that are still best fulfilled by cash.

Helmut Siekmann draws attention to the fact that cash is not just defined by its economic function as medium of exchange, a unit of account and a store of value. Legally, it also assumes the role of legal tender in the sense that it has to be accepted for settlement of any kind of monetary obligation, whereas other means of payment may be rejected by the creditor. The legal tender role is further supported by the fact that cash does not discriminate, is easy to handle, does not imply the risk of insolvency for the issuer, protects privacy and is still efficient in many situations.

Restricting or abolishing the use of cash in the European Union (or elsewhere) is closely-connected with the issue of legal tender. It has to be asked whether there are legal ways to restrict the function of legal tender or to define a new entity as legal tender, which to date is unknown. Based upon an analysis of primary and secondary European Union law, Siekmann comes to the conclusion that the elimination of cash would be an infraction of the law. In principle, albeit to a lesser degree, this also applies to mere restrictions on the use of cash such as maximum amounts for the use of cash in business transactions.

The lesson to be drawn for countries in Asia and elsewhere, which adhere to the rule of law, is that any consideration of the abolition or massive restriction on cash needs to take the legal tender aspect into account. Despite all technological progress, it is still not easy to identify a monetary instrument that is as suitable as cash is for legal tender.

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What lessons can be drawn from the contributions in this volume as far as the function and the use of cash are concerned?

One important point to note is that the diversity of the use of cash and cashless instruments between countries does not stem so much from technological factors, but from social and cultural habits, instead. Whereas cashless payments in South Korea are advancing smoothly up to the point that the "coinless society" is concretely envisioned for 2020, people in Japan still hold cash dearly even with a growing trend which is comparable to that of Germany and Switzerland on the other side of the world. Singapore appears to be more similar to South Korea, whereas the case of China is driven by special factors such as the economic latecomer status of the country and the important role of the three giant Internet companies.

Whereas the differences between the countries can be observed, described and researched, the knowledge of the universally valid factors which govern the use of cash and other payment instruments in general are still scarce and limited. This suggests that a "one size fits all" approach for regulating the use of cash would be mistaken. At least for the time being, the specific circumstances of each country or culture need to be uncovered and to be taken into consideration.

The contributions do not explore the issue of the zero lower bound of interest rates and its relation to private cash holding in depth. At various points, however, they do confirm that cash is linked to financial stability.[12] In times of financial crisis, people invariably increase their cash holdings out of fear of losing their assets. Such flights into cash can be observed universally spanning countries and cultures. Such interdependencies between cash and financial stability suggest that the abolition of cash to enable deep forays into the realms of negative interest rates may not just simply be an extension of regular monetary policy. Restrictions or even the abolition of cash usage may generate compensating behaviour by various

[12]Potential effects of negative interest rates on financial stability are pointed out by Beer et al. (2015, pp. 4–6).

economic actors and might result in unforeseeable negative effects for the financial system.[13] In this area, too, research appears to be not very advanced yet.[14]

Although shadow economic activities are significant in Asian countries to varying degrees, the contributions in this volume only briefly touch the, at times, politically-asserted link between cash usage and shadow market activities or even crime and terrorism. An important reason for this may be the high likelihood that, with the restriction of the use of cash or even its abolition, such activities will not be reduced to a large extent; they are profitable enough to allow for other hard to detect payment methods, even if they incur much higher transaction costs than cash.[15] In contrast, the extreme case of North Korea shows that, under certain circumstances, "shadow market activities" might be the only source of well-being for a people. North Koreans would certainly not welcome the abolition of Chinese or American cash.

Taken together, the contributions in this volume can only offer a glimpse of the role of cash in selected Asian countries, thereby pointing to the fact that many areas of this subject still remain without a solid research foundation. Any top-down moves to reduce the role of cash or to head towards a "cashless society" should, therefore, be taken with great care and only gradually.

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[13]Krüger points out that a bank run can have stabilising effects, if people are able to withdraw their money. A bank run thus can work like a "safety valve". Without the possibility of non-banks to withdraw funds however frantic buying and selling of assets might occur with further destabilising effects. Krüger (2016, pp. 61–63).

[14]Several potential effects of negative interest rates on financial stability like an impairment of the monetary policy transmission mechanism, a build-up of price bubbles and a misallocation of resources are indicated by Beer et al. (2015, pp. 4–6).

[15]Schneider and Linsbauer (2016, p. 92).

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