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Asia Digital Common Currency as a Global (International) Currency

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Asia Digital Common Currency as a global (international) currency

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Abstract[3]

This paper proposes "Asia Digital Common Currency (ADCC)" aiming at fostering Asian financial markets. We are proposing to issue a digital common currency controlled and managed under multilateral governance framework. As a result, the international currency, which should be an international public good, will be governed by a multilateral system. Under our proposed ADCC, each member country can carry out monetary policy independently. It also has a mechanism to maintain currency sovereignty in digital era. In addition, ADCC will contribute to the development of financial market infrastructures in Asia. It will foster the bond markets and standardize the Asian financial system. Asia lags behind Europe in monetary integration, but historically had experiences in common currency circulation. ADCC is an idea that should be thoroughly considered in order to develop the Asian and Japanese economies in the digital age.

Keywords: Digital Currency, Common Currency, International Currency as an International Public Good, Currency Sovereignty (Münzhoheit), Anonymity, Independence of Monetary Policy

JEL classification code: E42, F33, F36

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1. Introduction

The digital economy is developing rapidly, as seen in the rapid expansion of e-commerce. It is especially the case in Asia. With the development of the digital economy, the need for digital currencies is naturally increasing. The potential need for digital currencies will be high in Asia as well. And central bank digital currency（CBDC）projects are underway to digitize cash (banknote). Some central banks in Asia have also progressed their projects.

Central bank digital currencies have initially been discussed for domestic use. But recently, discussions about cross-border use have activated. This change in debate is not surprising as the digital economy expands across national borders. Under such circumstances, the question of whether the currency of a large country should be used as an international currency, as in the conventional international currency system, should be reconsidered. In fact, there is a view that the digital renminbi (e-CNY), a front runner of CBDC project, is aimed at internationalization of the currency though the Chinese central bank (the People's Bank of China<PBOC>) hasn't clearly mentioned about it[4]. The Board of Governors of the Federal Reserve System also touched upon potential benefits of digital USD as the vehicle currency[5].

On the other hand, as an alternative to the conventional system, a system for exchanging CBDCs by the initiative of BIS is also underway (the Multiple CBDC <mCBDC> project). This paper proposes to go further to realize a common currency in the form of a digital currency. The idea of the digital currency to be circulated internationally and/or globally was already proposed by Mr. Mark Carney former Governor of the Bank of England as Synthetic Hegemonic Currency (SHC) [6].

In our proposal of common currency, unlike the euro, the national currencies of each country remain. Our proposal has the following three merits: (i) The use of regional common currencies can reduce foreign exchange risks: (ii) Issuance of digital common currency-denominated bonds can promote the development of the Asian regional-wide bond market: and (iii) Managing the currency in a multilateral system strengthens international governance of international currencies.

The technical details of our proposal are explained in our previous papers[7]. In this paper, after presenting the outline of the proposal, we will discuss the merits of our proposal as an international currency, the topic of monetary policy, and the relationship with currency sovereignty.

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[4] Progress of Research & Development of E-CNY in China, July 2021 by PBOC, "though technically ready for cross-border use, e-CNY is still designed mainly for domestic retail payments at present." (p5)

[5] "Money and Payments: The U.S. Dollar in the Age of Digital Transformation" January 2022 by the Board of Governors of the Federal Reserve System

[6] "The Growing Challenges for Monetary Policy in the current International Monetary and Financial System" August 2019, Speech by Mark Carney

[7] Please refer to Inui, Takahashi and Ishida (2020a)(2020b).

2. Historical episodes of common currencies in Asia

Before explaining our proposal for the Asian Digital Common Currency, let us introduce two historical episodes about Asia Common Currency, briefly.

In Asia, economic integration has progressed due to trade and business collaboration, but there is a view that a common currency is difficult because of the diversity of political systems, religions, and economic development stages compared to Europe.

However, East Asia has a long history of widespread circulation of Chinese currency. The Asian common currency already existed in the Middle Ages. The photo1 is Ming's Yongle coin (Yong le Tong Bao), which was widely distributed in East Asia including Japan. The samurai government leaders in Japan at the time promoted the circulation of this currency.

Photo 1． The first Asia Common Currency: Yong le Tong Bao (永楽通宝)" in Ming Dynasty of China (15c)
(The Currency Museum, Bank of Japan)

From around the 12th century to centuries, Japan did not have its own coins and used Chinese coins as her national currency. This is an economic reason, not a political reason, because the whole East Asia including Japan was in one trade area.

Japan has also been using the current currency unit, “Yen”, since 1872. “Yen (円)” in the old Chinese character is "圓" （Photo 2-1）. In fact, Chinese characters are the same for Yuan in China (Photo 2-2）and Won in South Korea. Already for 150 years, Japan, South Korea and China have used the same currency unit in Chinese characters[8].

[8] Taiwan and Hong Kong also use “圓” as their currency units in Chinese characters.

East Asia has a tradition of common currency.

Photo 2-1: An Old Banknote in Japan

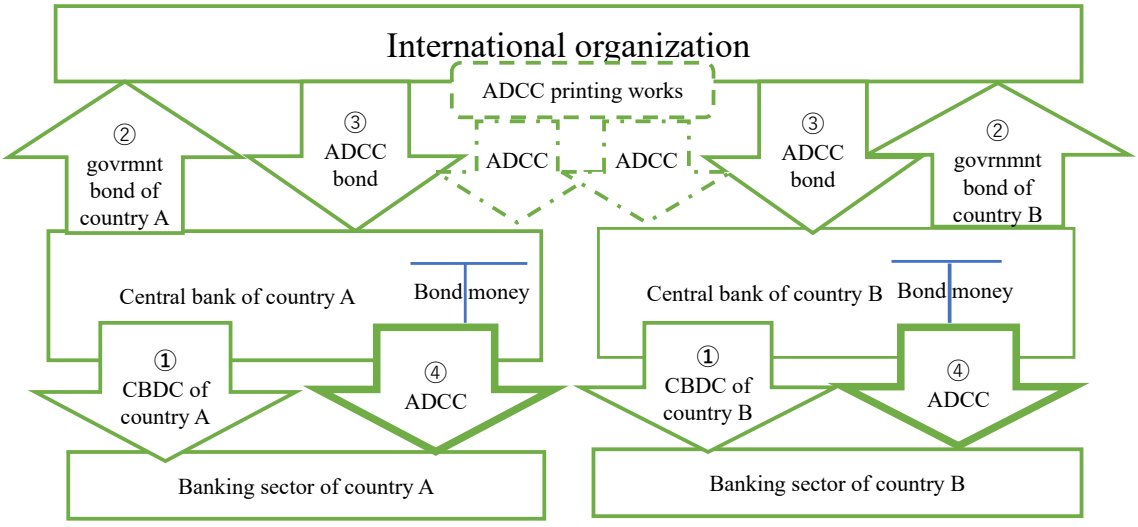
Photo 2-2: A Banknote in China

3. Asia Digital Common Currency (ADCC)

(1) Outline of the process: distribution of digital common currency and the common currency denominated bond

Asia Digital Common Currency (ADCC) is an issuing and circulating system of a digital common currency co-existing with the CBDCs with a precondition that individual member countries already issued CBDCs. Since ADCC utilizes CBDC system in each country, additional cost to issue ADCC may be minimized[9] (Chart 1).

Chart 1: Outline of Asia Digital Common Currency issuing processes



[9] Though not all countries in Asia haven't issued CBDC yet, it can be said that issuing CBDC will be realized sooner than expected since digital currencies can be used and transferred by using conventional devices such as smart phones.

Issuing and circulating processes of ADCC are to be explained in accordance with the Chart 1 hereinafter. Firstly, each country (country A and B in the Chart 1) issues and circulates CBDC (① in the Chart 1)[10]. Secondary, an international organization may be established for the purpose to obtain government bonds of the member countries (② of the Chart 1). The international organization issues ADCC bonds which are the common currency denominated bonds backed by the government bonds (③ of the Chart 1). The ADCC bonds are to be provided to member central banks in Asia. In other words, the ADCC bonds are returned to the central banks in exchange for the government bonds obtained. Instead of government bonds, the member central banks can offer central bank issued bonds, Asian Bond Funds (ABFs[11]), and/or local currencies of the countries. The ADCC bonds will contribute to fostering Asia capital markets through standardization and harmonization of the markets. The member central banks hold the ADCC bonds as the assets and issue the ADCC to the banking sector backed by the assets (④ of the Chart 1). The banks circulate the ADCC to their customers just like the banknote distribution. As such, the international organization will work just like a printing bureau and mint for banknote and coin issuance, respectively. The processes of issuing, circulating, and withdrawing CBDCs are just handling data (value) instead of transferring paper banknotes and metal coins physically. The international organization needs to manage the data (value) with relevant database without having costly physical infrastructures. Also, local currency (CBDC) and ADCC will be circulated in parallel coexisting each other in member countries, which means multiple currency regime is to be adopted (refer to Chart 2).

ADCC carries transaction records including IDs of digital devices[12]. In order to secure anonymity, such KYC information is kept and managed by an independent government agency in each country without being disclosed even to the central bank. Therefore, the independent government organization may need to be newly established to keep personal information safely keeping it within each country. KYC data will not go beyond the jurisdictions.

When some criminal activities are found, relevant measures to identify such activities need to be conducted separately from normal procedures. More specifically, related organizations including

[10] The ADCC proposal is aiming at presenting a kind of possible standard CBDC model in the region in order to secure interoperability of CBDCs and harmonize financial markets.

[11] The Asian Bond Fund (ABF), established in 2003, is an index bond fund with a two-phase framework, namely, "ABF1," which invested in U.S. dollar bonds, and "ABF2," which invests in local currency bonds and is open to private sector investors. In 2016, because the EMEAP determined that ABF1 had achieved its initial purpose, its proceeds were reinvested in ABF2. In July 2018, some selected bonds held within ABF2 were made available for lending to support the development of local currency securities lending markets and to enhance the functioning of regional money markets

[12] Digital devices may consist of digital vaults of banks, digital safes of merchants (companies), and digital wallets of individual persons.

central bank and the government agency cooperate each other and inform the incident to relevant authorities related to criminal activities.

ADCC is circulated by utilizing the system infrastructures of CBDCs in member countries to be connected multilaterally. Since ADCC may be a reliable currency to be issued with relatively low cost even for cross-border transactions, it may be able to be widely used for workers' remittance as well as for the purpose of trade by companies and travel of individuals. ADCC may also be utilized as an alternative vehicle currency to be managed by member countries fairly instead of using a currency of a dominant country.

(2) ADCC under international currency system

The significant aspect of ADCC as an international currency of public goods may be based on the multilateral governance by member central banks. Currently, a domestic currency of economic superpower is used as the international currency. This is due to economic reasons as well as historical background. The currency of economic superpower is the most liquid and safe. The convenient, user-friendly payment and settlement systems are already available for the vehicle currency. Having said that, it has side effects such as the control of a vehicle currency is conducted based on the domestic economy of the superpower, which could cause external shock to the small countries depending on the vehicle currency. It may be said that this might be avoided if such small counties adopt fully floating exchange regime. However, our experiences show that it is not such a simple issue written in a textbook. As a matter of fact, some small countries have been repeatedly affected by the policy change of the superpower. However, as long as a national currency plays as international currency, other countries can not be entitled to blame the superpower. The current international monetary system has serious contradictions.

Though authors don't deny the benefits of the currency of the superpower, the possible benefits of regional digital common currency should also never be underestimated[13]. A digital common currency managed by member countries multilaterally would promote international/regional cooperation and make regional stability increase. It may be important issue to discuss financial issues in the region with equal opportunities by member counties.

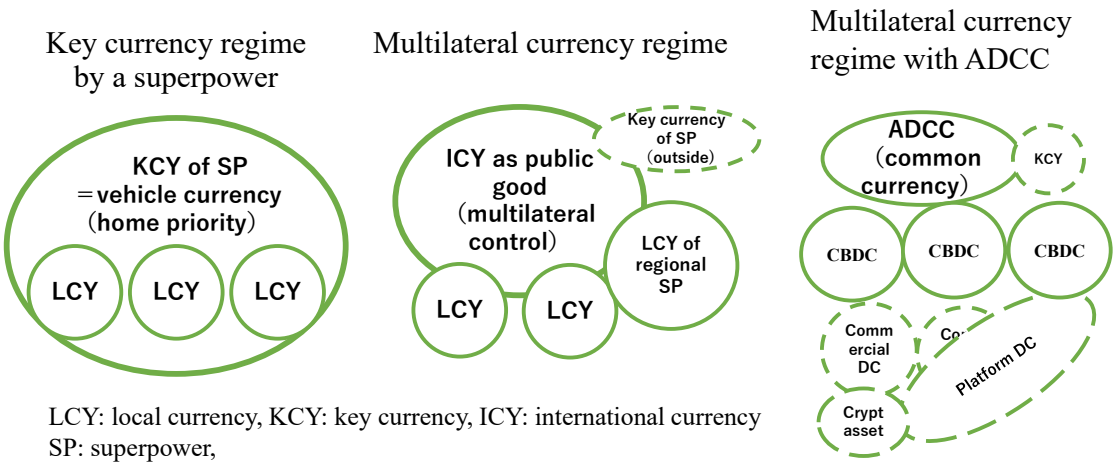
It may be sometimes pointed out that multilateral international discussions are not efficient and

[13] "Redefining strategic routes to financial resilience in ASEAN+3", December 2021, Edited by Diwa Guinigundo, Masahiro Kawai, Cyn-Young Park, and Ramkishen S. Rajan

effective, only NATO (No action talk only). The discussion on effective action such as ADCC will definitely strengthen the mutual relationship as we experienced when we discussed the SWAP agreement in ASEAN+3.

Since ADCC is a basket currency, exchange rates with the local currencies of member countries will fluctuate. As explained later, the monetary policy of each member country may be kept independent. But, at the same time, the influence (impact) of big country having high weight of currency share will be significant with stronger impact. Therefore, it is an important issue how to decide the basket weights of member currencies. There may be some possible measures for such basket rate determination including based on GDP, trade share, etc. depending on economic power of the country. Whereas, considering that ADCC should be a public good, such rate may be decided considering political factors. As such, since there is no "definitive answer" for this kind of issue, we need to discuss all such issues cooperatively among all member counties. Chart 2 illustrates the international currency framework comparing different system for the sake of discussion.

Chart 2: Comparison of possible international currency regime



LCY: local currency, KCY: key currency, ICY: international currency
SP: superpower,

(3) Fostering financial markets: Implementing financial market infrastructures

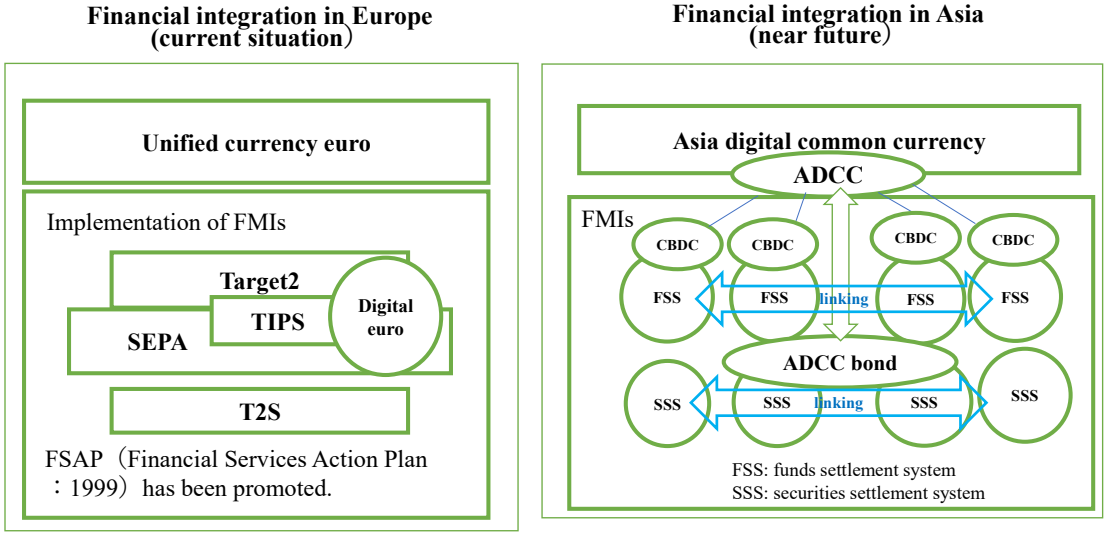
One of the advantages to implement ADCC is to foster financial (capital) markets in the region. Firstly, in order to circulate the common currency, implementation of payment and settlement infrastructures in individual countries is essential together with regional infrastructures. One of the pre-requisites to implement ADCC is that CBDC is to be issued in each member country in the region. Hopefully, a standard model of CBDC is to be adopted to secure interoperability. Fundamental technical specifications may need to be secured to be exchangeable to CBDCs in the region. Considering the network externality of CBDCs (currency in general), standardization of CBDC is especially important

having significant benefits from the viewpoint of quality assurance and version upgrading as well as interoperability of the CBDCs.

As already mentioned, ADCC (common currency denominated) bonds will be issued by the international organization, which will also contribute to fostering capital markets in the region. ADCC bonds may be index bonds with currency basket portfolio, which means that the bonds may provide the most efficient risk-return profile. ADCC bonds may also contribute to integration and connection of securities markets cooperating with CSDs (central securities depositories) in the region. Also, BCG (blockchain technology) and DLT (distributed ledger technology) may be utilized for ADCC as digital currency and ADCC bonds as digital securities. As such, ADCC is expected to contribute for the development of FMIs (financial market infrastructures) in the region.

"Euro" may be a good precedent of a common currency unifying (abolishing) local currencies of member countries. There are many things that Asia can learn from the euro. Establishing euro may have some important features not only unifying currencies including monetary policy implementation but also connecting and consolidating payment and settlement infrastructures. Development of FMIs in Europe is based on the FSAP (Financial Services Action Plan) initiated in 1999. Firstly, payment and settlement systems in Europe were interconnected such as TARGET Interlinking System. Then, single shared platforms such as TARGET2 and T2S were developed. TARGET2 and T2S are the FMIs in Europe. In line with this kind of consolidation, standards and legal frameworks for securities clearing and settlement were also developed and took in effect. Though there were some negative views on euro because of the crisis in 2010, it should be highly appreciated as a successful huge project at least development and implementation of FMIs. As recent initiatives in Europe, central banks keep developing and enhancing FMIs utilizing new technologies. TIPS (TARGET Instant Payment Settlement) which enables 24x7x365 settlement for small (retail) payment by using central bank money in real time bases and the digital euro project would be good evidence as such initiative. ADCC may hopefully become one of the initiatives to foster FMIs in Asia.

Chart 3: Image of Financial Integration, financial infrastructures



(4) Currency sovereignty in digital era

We have received some comments and advice on our idea of ADCC. One of them are that ADCC proposal could have some conflict with conventional currency sovereignty. In digital era, currency sovereignty is discussed from the viewpoint of personal data protection. Generally, digital currencies have inherent characteristics carrying trade data with personal information ever for cross-border payment and settlement. If it is the case, preventing domestic personal date from leaking to outside country may be an important issue for currency sovereignty. In case of ADCC, personal information such as individual ID is stored by an independent government agency separated from trade data handled by central bank, which guarantees anonymity of payment and settlement even for the central bank. Personal information doesn't go outside the country even for cross-border payment except for the necessary information of recipient protected by secure measures.

(5) Digital Currency Area vs Optimal Currency Area

With respect to digital currencies, not only CBDCs but also private (commercial) digital currencies may be issued. The Bitcoin is a pioneer of the digital currency regarded as "crypt asset" (crypt currencies represented by the Bitcoin may also function as currency). As pointed out by Brunnermeier et al. (2019), the big digital platformers dominant globally may issue digital currencies (refer to Chart 4).

Chart 4: Possible variation of digital currency

Type		Characteristics
Crypt asset		Digital asset (digital gold)
Digital currency	CBDC	Single function currency as alternative for banknote
	Private bank digital money	Digital money with additional functions such as programmability
	Platform money	Digital money to be used within the platform

Brunnermeier et.al. pointed out some possibility that "Digital currency area" may be formed instead of "Optimal currency Area". In addition, considering such multiple currency circumstances, the currency sovereignty could less make sense. Talking about the possible situation with the ADCC co-exists with local currencies including CBDCs and other currencies, issues for multiple currencies need to be discussed (refer to Chart 2). With respect to multiple currency economy, Edo period in Japan was a good example, where gold, silver, and copper coins were circulated in parallel with fluctuating daily exchange rates. As evidenced by the development of money changers, the economy of the Edo period was one of the most advanced financial economies in the world at that time.

(6) Foreign Exchange rates and monetary policy implementation

One of the characteristics of ADCC is to co-exist with local currencies in the region, which enables for each country (central bank) to conduct monetary policy implementation for stabilizing each currency. The following is an example of fluctuations of exchange rates of country J and K for that of ADCC (refer to Chart 5).

Chart 5: Monetary policy implementation and Exchange rate fluctuations

	Country J	Country K	Common currency (ADCC)
Initial condition	1$ = 100¥ (1%)	1$ = 1000₩ (2%)	1$ = 1ADCC (1.5%)
Case 1	1$ = 100¥ (1%)	1$ = 1200₩ (2%)	1$ = 1.1ADCC (1.5%)
Case 2	1$ = 100¥ (1%)	1$ = 1100₩ (3%)	1$ = 1.05ADCC (2%)

For simplicity, we assume that ADCC is issued with the equal currency weight (1:1) for currency J and currency K. Denomination of currencies of country J and country K are ¥ and ₩, respectively. The exchange rates are shown as the rate of each currency to the USD $. Interest rate of each currency is shown in the parenesis ( ). The initial condition is assumed that interest rates of ¥, ₩, and ADCC are 1%, 2%, and 1.5%, respectively. Case 1 shows when exchange rate of ₩ depreciates 20% from 1000₩ to 1200₩ to the dollar $. Then, ADCC depreciate 10% from 1ADCC to 1.1ADCC to the $.

Next, case 2 shows in case ₩ increases its interest rate from 2% to 3% against the depreciation. Then, ₩ appreciates to 1100₩ to the $ (10% depreciation to the initial condition). ADCC depreciates 5% to the $. The results above show that the fluctuation of common currency ADCC is smaller than that of each currency, which is natural considering that ADCC is a basket currency.

In case of Case 1, a company in country K having a contract based on ADCC, the impact of currency depreciation may be 10% though ₩ depreciate 20%. Also, such monetary policy of each country has influence to the common currency ADCC. If the authority of each country tries to conduct monetary operation by referring to ADCC as a "merkmal", the common currency will bring discipline to the monetary policy of each country. This is a derived benefit of the common currency.

4. BIS mCBDC compared with ADCC

Cross-border payment and settlement using CBDC is discussed under BIS Innovation Hub project by HKMA, BOT, PBOC, and CBUAE. The project is trying to implement faster, cheaper, more transparent and more inclusive cross-border payment services under G20 recommendations. More specifically, it aims at implementing a CBDC which is compatible with others and benefiting from a diverse and competitive market for services. In order to achieve this, it is suggested that central banks collaborate each other. Also, the new technologies such as DLT is utilized to implement a real time PVP (payment versus payment). The CBDC arrangements based on single multi-currency system may be the possible way to implement multi-CBDC arrangement for the cross-border payment with single rulebook in the near future.

Even though, the multiple CBDC arrangements utilizing DLT may drastically reduce risks of conventional cross-border payment and settlement, utilizing common currency including ADCC may provide better way in terms of foreign exchange risk reduction by definition.

Another benefit of mCBDC is that the personal information such as individual ID will not go outside each country[14]. This characteristic may meet the requirements for currency sovereignty discussed the above. ADCC also satisfies with this requirement by introducing institutional framework establishing the government agency separately controls KYC information from the central bank preventing personal information from going outside the country.

5. Concluding remarks

[14] BIS Economic Annual Report (2021) Chapter 3

Contributions to the development of global economy from Japan has decreased drastically for these days. Not only from the increasing international competitiveness of Japan but also for the benefits of world economy, proposal for new initiatives from Japanese society may be expected. As such, the authors are trying to propose implementation of Asia digital common currency (ADCC) for the sustainable development of Asian economy. The authors are also trying to contribute to regional development through this kind of proposal which could also contribute to revitalize Japanese economy as a member of Asian economies. It may be a good topic to foster development of regional economy and cooperation in the digital era.

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