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Stablecoins, Central Bank Digital Currencies and US Dollar Hegemony

The Geopolitical Stake of Innovations in Money and Payments

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Abstract: Stablecoins are second generation cryptocurrencies, aimed at maintaining their value stable with respect to official currencies. The most famous example is perhaps represented by libra, the cryptocurrency announced by Facebook in 2019 and yet to be issued; the most widespread is tether, with a market capitalization of almost 10 billion dollars and a daily transaction volume of almost 50 billion dollars, which makes it the most used cryptocurrency. The diffusion of stablecoins is hardly surprising. By minimizing volatility – the main flaw of first generation cryptocurrencies, including bitcoin –, stablecoins are expected to play an even more important role on a global scale within a few years. Our contribution deals not with the economic, but specifically with the geopolitical factors that could foster the use of stablecoins for strategic and military purposes. In particular, we focus on how such payment instruments, together with other alternative electronic payment systems, could be used as a means to circumvent economic sanctions and ultimately as a challenge to the hegemony of the US dollar in the international monetary system.

Keywords: stablecoins, cryptocurrencies, international monetary system, economic warfare, economic sanctions

JEL Classification: E50, F51, F52

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1 Introduction

In 1988, *Foreign Affairs* published an article entitled “Technology and Sovereignty” that foreshadowed the radical overhaul of the international monetary and financial system by technological innovation (Wriston, 1988). Even more, it envisaged the possibility that such transformations would ultimately lead to a change in the form and in the balance of power on a global scale. Indeed, in subsequent decades, the rise of the Internet completed the revolution in information and communication technologies (ICT) and contributed to the liberalization of international capital flows, ushering in a new era of financial globalization.

More recently, the invention of bitcoin has brought the challenge to the core of the payment system, promising (or threatening) a “peer-to-peer electronic cash” (Satoshi, 2008) capable of bypassing the banking system, crossing political jurisdictions without permission and ultimately competing with the US dollar for global monetary hegemony. In fact, bitcoin was allegedly developed as a response to the Global financial crisis and to the absence of a truly international currency. However, the extreme volatility of bitcoin has greatly hampered its actual circulation as a means for international settlements and has instead encouraged its use as a speculative financial asset (Amato & Fantacci, 2020).

Now a new generation of cryptocurrencies, called stablecoins, could overcome this drawback by offering a digital cash equivalent pegged to a major national currency, or to a basket of currencies or assets. Stablecoins would thus combine advantages of conventional bank money (in terms of stability of value) with the advantages of cryptocurrencies (in terms of lack of bank intermediation and hence greater privacy and potentially lower transaction costs).¹ In 2019, the social network Facebook announced the creation of a consortium with other major actors of the payments system and other sectors (technology, communications, venture capital and even nonprofit), aimed at launching a stablecoin called libra. The

¹ It is worth noting that the alleged virtues of bitcoin in terms of anonymity and cheapness are more a myth than a reality: ownership and transfer of bitcoin is traceable on the blockchain, if required e.g. by authorities, whilst extremely high costs are simply covered by the creation of new coins to remunerate the “miners” who approve the transactions (Amato & Fantacci, 2020, pp. 16–17 and pp. 42–43).

prospect of having a stablecoin catered to an already existing social network with billions of users triggered the immediate reaction of central banks and regulatory authorities across the world, who sensed a potential threat to monetary sovereignty and financial jurisdiction. Hence, the Libra project has been postponed and redesigned as a more traditional payment network (Popper & Isaac, 2020), yet similar initiatives have been launched by other platforms.

On the backdrop of these developments, and of their implications for the payments industry and for the banking system, the present paper intends to assess the potential geopolitical causes and consequences of the rise of stablecoins. In fact, stablecoins could allow circumventing various sorts of restrictions to the transfer of money that continue to exist even in the present environment of free international capital movements, such as capital controls imposed by certain countries or economic sanctions used as a form of warfare against designated regimes. Moreover, their emergence raises a series of fundamental issues: Can the issuance of stablecoins backed by assets be likened to the money creation by the shadow banking system? Do stablecoins represent a challenge to the current international economic order based on the enforcement of sanctions through the payments system (particularly SWIFT²)? Could stablecoins threaten the status of the dollar as international currency? Will they lead to the rise of a fragmented new international monetary system based not on national governments but on private enterprises and even on pure algorithms? What is the role of governments in promoting or hampering the rise of new alternative payments systems? The present paper addresses these and other related questions to investigate the challenge launched by stablecoin technology to the monetary hegemony of the United States.

In the sphere of international relations, hegemony entails a combination of dominance and consent: it rests on military power and outright control of resources and markets, but also on the ability to impose a system of values (Gramsci, 1996).

Monetary hegemony refers primarily to the exercise of hegemony in the monetary sphere.³ Even in this context, hegemony is a multifaceted

² SWIFT (Society for Worldwide Interbank Financial Telecommunication) is the largest system in the world that allows its customers to send and receive payments and financial transactions messages in standardized form. It will be described in greater detail in Section 2.2.

³ The use of the term hegemony in relation to the international monetary system can be traced back to Cohen (1977). However, already Kindleberger (1973) had claimed that the leadership of one country is necessary for the stability of an international monetary regime. This notion is at the basis of hegemonic stability theories of the international monetary system (Eichengreen 1987). Yet Gramsci had already hinted at the economic and even strictly monetary dimension of hegemony, by evoking “the hegemony of the sterling in the world” and by pointing out that “the revenues generated by London’s financial market contribute greatly toward erasing the [British] deficit in the balance of trade” (Notebook 4, 1930–32, §60; in Gramsci, 1996, p. 234).

phenomenon that has various aspects roughly corresponding to the fundamental functions of money: a currency is hegemonic when it is used simultaneously and internationally as a unit of account, as a means of settlement and as a reserve asset. In modern times, however, this analytical distinction is of little practical relevance, since the three functions are closely intertwined. As the history of the Bretton Woods system proves, a currency that is established as a pure unit of account, for the definition of the par values of other currencies, immediately becomes a necessary reserve asset for all countries who accept to have liabilities denominated in that currency and ultimately also a means of payment for the settlement of contracts denominated in that same currency. Similarly, when the use of a currency in one of these functions is threatened, so is its ability to continue performing the others, and consequently the ability of the issuing country to continue indefinitely to finance balance of payments deficits simply by creating international money.⁴

In this paper, discussing how stablecoins and other innovations in international payments could threaten the monetary hegemony of the United States, we shall consider in what capacity and to what extent the dollar could be substituted by alternative international payment instruments and we analyze how this, in turn, could affect a military power that is increasingly reliant on forms of economic warfare that involve control over the payments system.

The paper is structured as follows. Section 1 defines and describes stablecoins and the related, but different case of central bank digital currencies (CBDCs). Section 2 illustrates the recourse to economic sanctions as an instrument of warfare and presents the role that SWIFT plays in the international payments system. Section 3 discusses the threat represented by stablecoins for US hegemony, analyzing cryptocurrency initiatives and alternative payment platforms on various fronts: Russia, Venezuela (Petro), China, Iran (Instex). Section 4 draws preliminary conclusions and suggests various scenarios, foreshadowing the transformation and potential fragmentation and regionalization of the international monetary system.

⁴ This observation suggests a possible, alternative interpretation of monetary hegemony, not merely as “the exercise of hegemony in the monetary sphere”, but more radically as “a hegemony based on the ability to create international money”. In fact, military clout, economic competitiveness, financial power all depend ultimately on the ability to run unlimited balance-of-payments deficits by financing them through the creation of international money. One could go so far as to ask whether the fact that the United States enjoy the “exorbitant privilege” of issuing the global currency is the ultimate foundation of their status as global super-power. Does the hegemony of the United States stand and fall with the hegemony of its currency? This, however, is the matter for another investigation.

2 Stablecoins

2.1 Definition and Description

Cryptocurrencies are a new form of digital money, inaugurated with the invention of bitcoin in 2008. Their distinctive feature in comparison to traditional forms of digital money, like bank accounts, is that they, at least allegedly, do not require any intermediary⁵: in other terms, they constitute a peer-to-peer electronic cash, in which the storage and transfer of funds is performed not through a protected network by a centralized banking system, but over the Internet by a decentralized ledger technology (DLT or blockchain) that relies on cryptography to ensure privacy and security. The truly groundbreaking potential of cryptocurrencies is to combine the advantages of two forms of money that have remained hitherto separate: electronic money and cash. Their main limit, and the chief impediment to keeping that promise, has been the extreme instability of their value.

Stablecoins are cryptocurrencies that aim at overcoming this instability by maintaining a stable value in relation to an official currency or to a basket of currencies. They can be issued by a private entity (stablecoins proper) or by a central bank (in which case, they fall under the category of central bank digital currencies discussed below).

Following a recent study published by the European Central Bank (Bullman, Klemm, & Pinna, 2019), privately issued stablecoins can be classified into four categories according to the method that they use to stabilize their value (Table 1):

1. *Fiat tokens* are fully backed by funds consisting of official currency, in the form of cash, electronic money, commercial bank money or reserve deposits. Hence, they are a “tokenisation” of the official currency. Tokens are issued by depositing an equivalent amount of official currency, and can always be converted back into official currency at par value. This mechanism in turn requires an issuer or a custodian for the safekeeping of the funds. For this reason, this case is the most centralized in the ecosystem of stablecoins. Centralization is particularly relevant when the stablecoin is backed by a basket of currencies: indeed, in this case, the entity that manages the system has the additional task of deciding the composition of the basket (a decision that, as we shall see below, can have important macroeconomic and geopolitical implications). The most relevant stablecoin in terms of market capitalization, namely Tether, is

⁵ In fact, this claim does not hold true in practice: cryptocurrencies are designed and maintained by intermediaries which developed the technology and/or manage the transactions (Amato & Fantacci, 2020, pp. 38–42).

usually indicated as the typical example of this category, although, as we shall argue, it belongs now more appropriately to the next.

2. *Off-chain collateralized stablecoins* are backed by a portfolio of assets other than cash, whose value therefore can fluctuate in terms of the currency adopted as peg. Even in this case, a central party is needed, and not only for the custody of the assets but also for the management of the portfolio. Hence, the presence of a third party is even more relevant. The expression “off-chain” is used to indicate that the underlying assets are regular financial instruments traded on regulated markets and serves to differentiate stablecoins of this class from those of the next one. The most important example of this class is Saga. However, also Tether has moved into this class since it is no longer backed entirely by cash, but also by loans, raising a strong issue of transparency and accountability, since it is not subject to financial regulation or supervision (Coppola, 2019)
3. *On-chain collateralized stablecoins* are backed by other cryptoassets,⁶ recorded on the same underlying DLT. Hence, there is no need of an issuer or a custodian. This feature implies a higher degree of decentralization. Given the higher volatility of crypto-assets compared to regular financial assets, these stablecoins must be overcollateralized to try to keep their value stable. However, no backing of any multiple of 100% will be enough if the value of the underlying cryptoasset falls towards zero.⁷
4. *Algorithmic stablecoins* do not rely on the presence of a collateral. Instead, stability is pursued by use of an algorithm coded in the blockchain, which adjusts automatically the supply of tokens in response to the movements of demand. Stablecoins that are stabilized by algorithms, and that do not rely on any form of backing, represent in principle the ultimate threat to sovereignty by technology, since they cannot be controlled by any form of political authority or legal regulation. However, as in the previous case, even here the coin is bought and sold in exchange for cryptoassets, and hence its value can be stabilized in

⁶ Cryptoassets are constructed on the same technological infrastructure as cryptocurrencies (DLT), but are a slightly broader category, since they do not necessarily respond to the purpose of constituting a general means of payment. For example, according to the Swiss financial authority, cryptoassets comprise not just payment tokens (cryptocurrencies proper), but also utility tokens (which represent a purchasing power restricted to specific services) and security tokens (which represent a share of ownership in a company).

⁷ To be sure, this holds true also for the previous category, since all securities issued by someone are exposed to the issuer's default. However, in the case of conventional financial assets, the default risk is mitigated by the existence of real assets backing the liabilities and by regulation and supervision concerning their adequate management and evaluation. All these features are lacking in the case of crypto-assets.

Table 1: Taxonomy of stablecoins.

Name	Examples	Backing	Management	Analogue in conventional finance
Fiat tokens	Monerium, Gemini	Cash, electronic money, bank money, reserves	Discretionary	e-money
Off-chain collateralized	Saga, Tether	Conventional financial assets	Discretionary	Eurodollars, money market fund
On-chain collateralized	BitUSD, Minexcoin	Crypto-assets	Discretionary	
Algorithmic	Steem, NUBITS	Not predetermined	Automated	Algorithmic trading

relation to the latter, but may depart significantly from the value of the official currency. Moreover, in order to continuously buy and sell the stablecoin, even if no formal backing is required, the algorithm will have to be endowed with adequate amounts of the underlying cryptoassets used as reserves.

Overall, the ambition of stablecoins to provide a completely disintermediated ersatz for official currencies remains a delusion: the first two categories may be stable, but they are in fact centralized; the second two are decentralized, but may be seriously unstable.⁸

2.2 Central Bank Digital Currencies (CBDCs)

Perhaps the most plausible development consists in what may be regarded as stablecoins issued by central banks, or central bank digital currencies (CBDCs). These may be thought of as fiat tokens that are issued and managed directly by the same monetary authority that issues traditional fiat money in the form of coins, banknotes and reserves. For this reason, CBDCs are not strictly speaking stablecoins, in the sense of cryptocurrencies that try to peg their value to official currency: in fact, they *are* official currency. The centralization of this type of stablecoins is at least justified by the fact that it relies on the institution that is already normally entrusted with the task of issuing the currency. Indeed, the issuance of CBDCs would arguably improve central banks' ability to carry out the increasingly important role that they have assumed in the wake of recurrent

⁸ The risks implied by stablecoins in terms of financial stability, monetary sovereignty and privacy have been recently discussed by Panetta (2020).

crises, by broadening the instruments at their disposal, strengthening the transmission channels of monetary policy, providing a direct link with businesses and households, increasing the central bank control on the monetary base and allowing extreme forms of monetary expansion such as helicopter money and negative interest rates (Barontini & Holden, 2019; Bindseil, 2020; BIS, 2018; Kumhof & Noone, 2018).

A study by the Bank for International Settlements (2018) states that CBDCs are a new kind of central bank money different from physical cash or central bank reserve and settlement accounts. According to the study, the distinctive feature of CBDCs with respect to traditional forms of central bank money is that the former combines the characteristics of two hitherto distinct types of money: tokens (like coins or banknotes) and ledger entries in accounts (such as bank accounts) (Green, 2008: 58). In the light of two monetary policy objectives – general purpose and wholesale – the BIS report articulates a taxonomy of CBDCs emphasizing three key characteristics of money: form (digital or physical); accessibility (widely or restricted); and technology (token or account-based). Moreover, the BIS report highlights how CBDCs can be conceived in such a way as to guarantee users different degrees of anonymity similarly to the stablecoins issued by private actors.

However, no CBDC has yet been issued. To date, there are two CBDC projects at an advanced stage that have been developed by the central banks of Sweden and Uruguay (Barontini & Holden, 2020). Both projects were born in response to the widespread use of electronic payments and the consequent decline in the use of cash. The fear that cash would become scarce or too expensive for the older population groups pushed the central banks of Sweden and Uruguay to conceive a new user-friendly form of digital cash.

As for the Swedish case, the project for the construction of the e-krona started in 2017. E-krona will be a valued-based currency, this means non-account based. However, the Riksbank considers the current versions of distributed ledger technology not yet suitable to meet the proposed needs.

Therefore, it plans an intermediate step characterized by a “platform” where payment service providers (PSPs) of the e-Krona will connect and distribute the currency. According to the Riksbank, PSPs will use DLT in providing their services.

Turning to the Uruguayan project, the Central Bank of Uruguay launched a pilot experimentation in November 2017. The program consisted in issuing and distributing the e-Peso. The digital banknotes were issued for distribution through an “e-note manager platform”. The role of the platform was to register the ownership of the digital banknotes and protect users from the danger of fraud. In total, 20 million e-Pesos were issued. E-Peso payments are made instantly in peer-to-peer mode using the e-Peso. There is a limitation on the possibility of

accumulating this means of payment. No individual can hold more than 30,000 pesos; for businesses the limit is set at 200,000 pesos.

The current inertia of central banks leaves the creation of international money open to unregulated private initiative. Something similar had already occurred in the late 1950s with the development of the eurodollar market.

2.3 Stablecoins and Eurodollars

Perhaps the most relevant comparison to appreciate the monetary characteristics of stablecoins is indeed provided by eurodollars and other forms of quasi-money created by the shadow-banking system (described e.g. by Ricks, 2016). In fact, apart from the decentralized character of the ledger on which they are recorded, stablecoins bear many similarities with eurodollars (Kaminska, 2017). The latter consist in dollars held outside the United States, not in the form of metal or paper money issued by the Federal Reserve (Fed), the American central bank, but in the form of deposits at private banks that are not subject to US jurisdiction (Amato & Fantacci, 2012, pp. 101–102). Eurodollars, like stablecoins, are intended to constitute a form of quasi-money or cash equivalent, thanks to a series of characteristics that distinguish them from other types of assets: in fact, they are not only highly liquid (like many large-cap stocks on the market), not only very safe (like bonds issued by creditworthy borrowers), but they entail virtually no nominal price risk: in other terms, they are intended to preserve their nominal value in terms of the currency in which they are denominated (Ricks, 2016, p. 31–32). Moreover, stablecoins allow to circumvent KYC requirements,⁹ capital controls, and other restrictions; similarly, the eurodollar market developed in the 1960s as a deregulated market where “no questions are asked, no information is given” (Einzig, 1973: 65). Finally, and most importantly, to the extent that stablecoins are backed not by cash (as in the case of fiat tokens) but by financial assets (off-chain collateralized stablecoins) or even by loans (Tether), they involve a conversion of long-term commitments into short-term claims comparable to the maturity transformation operated by financial institutions issuing eurodollars.

Of course, there is also a difference, and indeed a contrast, between stablecoins and eurodollars: the latter are created by the private banks, whereas stablecoins, like all cryptocurrencies, rely on decentralized ledgers and aim at

⁹ KYC (know your customer or know your client) requirements are guidelines imposed on financial intermediaries to verify the identity, risk and suitability. They are part of broader AML (anti-money laundering) regulations.

disintermediating the traditional banking system and at offering peer-to-peer payments. However, at closer consideration, this difference is not as relevant as the advocates and proponents of stablecoins pretend. In fact, on one side, eurodollars are not issued by regular banks, but by the so-called “shadow banks”, i.e. non-bank financial institutions, which act like banks, but without the bank charter and the consequent submission to banking regulation (Ricks, 2016, p. ix); on the other side, as we have seen above, most stablecoins, unlike other cryptocurrencies such as bitcoin, do require the existence of a third party that is responsible for maintaining the peg with the official currency (or with the basket of currencies) and that has custody of the reserves that represent the backing. Only if the peg relies not on reserves, but on an algorithm, is a stablecoin a purely technical device with apparently no juridical body and no governance structure.¹⁰ If, instead, as in the majority of cases, there is a backing, a stablecoin resembles more familiar forms of money, and more specifically electronic money (if it is fully backed by cash) or bank money (if it has fractional cash reserves or if it is backed by financial assets). It is the latter form that appears to be the most common (see e.g. Tether). And it is the latter case that most resembles eurodollars, which are also a form of bank money issued outside the perimeter of regulated banks.

Hence, in many respects, the issuance of stablecoins, particularly if they are backed by assets and not by cash, can be likened to money creation by the shadow banking system. In other terms, stablecoins of this sort imply a creation of international liquidity that represents a potential threat to global financial stability and to the monetary hegemony of the United States.

One aspect of the historical evolution of the eurodollar market makes such a threat appear even more plausible. In fact, among the first and most enthusiastic users of eurodollars were the governments and central banks of communist and non-aligned countries, who preferred not to hold their dollars in the United States, especially after the Egyptian government had seen its dollar holdings frozen in the wake of the Suez crisis in 1957 (Einzig, 1973, p. 30). Eurodollars appeared, at least initially, as a convenient way to circumvent US controls. As we shall see in the next paragraph, the United States eventually managed to extend their control even on offshore dollar operations, through the SWIFT payment

¹⁰ This is not strictly true, as even the example of bitcoin shows. To be sure, its creation is governed by the algorithm. However, there are still margins of adaptation of the protocol (e.g. to facilitate scalability) that are decided by the community of the users according to a peculiar governance structure, which remains tacitly in place behind the algorithm itself.

system.¹¹ In this context, therefore, the development of stablecoins may be sustained by geopolitical motivations similar to those that backed the diffusion of eurodollars over 60 years ago.

3 The Relationship between Sanctions and the International Payment System

3.1 The Payments System as an Instrument of Defense and Warfare

Shubik and Verkerke (1989) classify war economics into two strands, defense economics and economic warfare. Defense economics mainly deals with employing economic tools and methodologies to national defense issues. In particular, this branch deals with the analysis of alternative solutions for defensive aims together with the mobilization and the collection of resources for these purposes. Typical economic defense analysis investigates the public expenditure devoted to develop weapons. Instead, economic warfare represents the branch that studies the use of economic weapons for strategic purposes. The distinctive trait of economic warfare, as opposed to defense economics, is that it is focused exclusively on the use of economic weapons such as sanctions, cartels, and embargoes. Following Shubik and Verkerke's taxonomy, it is possible to frame payments systems in both branches of the discipline. In particular, the ability to trace the global payments network allows the United States to collect information that can be used in various fields of defensive economics (Farrel & Newman, 2019; US Department of the Treasury, 2020). In recent years, this ability has been employed principally as a tool to track terrorist financial networks (Farrel & Newman, 2019; US Department of the Treasury, 2020). Furthermore, the analysis of big data acquired from the payments system allows identifying strategic economic objectives of other countries and to trace with extreme precision the methods of supplying goods and commodities.

As for economic warfare, the use of the payments system is the most efficient way to carry out embargoes and sanctions. Disconnecting a country from the international payments system is one of the most powerful economic weapons.

¹¹ Moreover, US claimed also extra-territorial regulation of USD denominated transactions and payments. Legal references are available on the US Department of the Treasury web page: <https://home.treasury.gov/policy-issues/terrorism-and-illicit-finance/terrorist-finance-tracking-program-tftp>

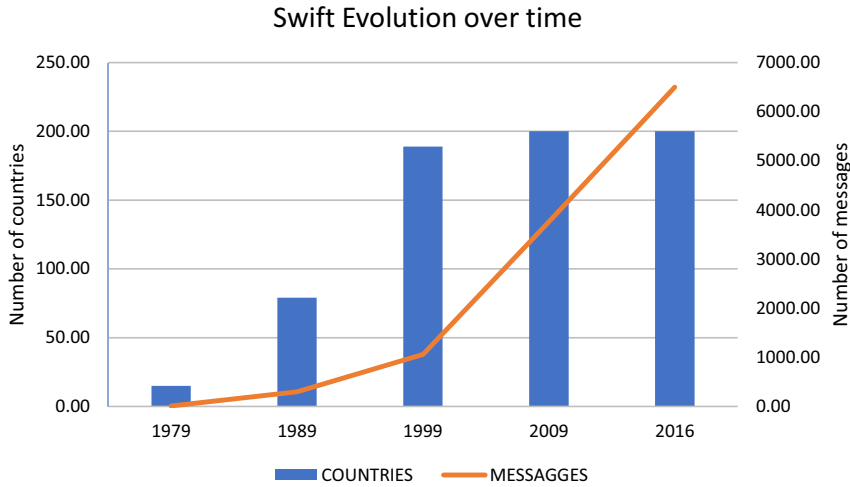


Figure 1: Number of Countries in which Swift Operates and Number of Messages Managed.
Source: <https://www.swift.com/>.

This is because in addition to not allowing trade and financial relations with hostile countries, it makes economic relations between the disconnected country and its allies highly difficult. Currently, the main actor in the international payments system is SWIFT. Therefore, it is necessary for countries that do not orbit the US sphere of influence to create alternative systems to circumvent embargoes and sanctions, including those imposed by the United States. Before discussing the alternatives that are being developed, particularly in the form of stablecoins, let us therefore start by analyzing how SWIFT operates.

3.2 SWIFT

Since the late 1970s, SWIFT (Society for Worldwide Interbank Financial Telecommunication) has provided a system for sending and receiving payments and financial transactions messages in standardized form (around 100 different types of messages). SWIFT is located in Belgium and managed by a consortium of principally European and North-American banks. Among its main clients there are banks, financial institutions of different kinds, governments and central banks all over the world. At the end of the 1970s, SWIFT was used in 20 countries by around 500 companies for an overall amount of approximately 10 million messages per year. As shown in Figure 1, in 2016 SWIFT supplied around 11,000 financial

institutions across the globe for a total of more than 6.5 billion messages per year (Farrel & Newman, 2019; SWIFT, 2020).

Cook and Soramäki (2014) analyzed Swift's network of payments over the period 2003–2013 by means of network analysis. In particular, they investigated the network for the type of message MT103. MT103 (Single Customer Credit Transfer) is the most used message in the SWIFT system for customers' cross-border wire cash transfers. From their analysis, it is possible to extract very useful information on the topology of payments. This information is not only of economic importance but also of fundamental political and strategic relevance.

In particular, it emerges that the density of the network is affected by seasonality and by global geopolitical and economic events. Nonetheless, the topology of the MT103 networks has not undergone substantial changes over the decade considered. The networks display a core-periphery structure¹² characterized by a group of highly connected hub countries (North American and European countries, Russia, China, India, Saudi Arabia, New Zealand, Australia and South Africa), and by another group of poorly connected countries having relations mainly with countries belonging to the core (South American, African and Central Asian countries). This implies a strong economic dependence of the periphery from the core. Moreover, it may indicate the spheres of influence of the countries belonging to the core in the event of conflicts. Nevertheless, it is not possible to draw general conclusions from the topology analysis. From this data, however, it cannot be excluded that peripheral countries do run economic relations with other peripheral countries or with core countries to which they are not connected. This for at least three reasons: international barter agreements between countries, bilateral and multilateral forms of clearing between companies, and widespread practice by companies of holding current accounts in banks located in countries where they have commercial interests. Let us briefly analyze each of these cases in turn.

As for international barter, the main reasons for undertaking such types of agreements is to economize foreign exchange reserves and transaction costs, and avoid using the dollar in order to reduce dependence on the US and circumvent international sanctions. It could also be a way for governments to keep the dynamics of the current account under control. While during the Cold war international barter was extensively employed by the Soviet Union, nowadays many African and South American countries tend to use international barter agreements especially with China (Bräutigam & Gallagher, 2014; Humphrey & Michaelowa,

¹² We follow the definition of core-periphery structure by Craig & von Peter (2014). According to them, in core-periphery structures: 1) core nodes are linked to all other core nodes; 2) all core nodes are linked to at least one periphery node; 3) periphery nodes are not linked to any other periphery nodes.

2018). In the case of corporate barter, or intercompany clearing agreements, the economic rationale is mainly to save liquidity, to create reserve space to enhance credit leverage over them, and to avoid the costs of using bank money. Finally, in order to facilitate payments and business relationships with their customers, companies that export goods and services tend to hold current accounts in the country they export to or in big international banks. Therefore, in the SWIFT data, there may be no evidence of connections between some countries or the connection between countries may emerge not for commercial but exclusively for financial reasons. What can be said with certainty is that peripheral countries tend to rely on the economic and/or financial system of a core country. This happens especially for countries providing commodities or contributing to transnational value chains of production.

The level of intensity of relations between countries is analyzed by means of a modularity index that considers the weighted flows of messages (Cook & Soramäki, 2014). More precisely, modularity indexes compare the flows within a group to the ones between groups. From this perspective, the authors obtain five large and stable clusters along the considered period. The biggest cluster is composed principally by non-European large economies (the United States, Australia, Canada, China, Hong Kong, and Japan), while the second consists mainly of European and North African countries. The other relevant clusters concern North European countries, the area of the former Soviet republics and countries belonging to central and northern Africa. From the modularity analysis, it is possible to extract information on the level of interrelation between economic areas. Potentially, the clusters identified by the modularity analysis could become separate and independent payments systems. It is important to note that the identified clusters should not be considered as possible optimal currency areas (Mundell, 1961),¹³ but as areas where economic interactions are very dense: i.e., where economic relations within areas are much more intense than between areas.

Regarding the importance of individual countries, the authors provide information extracted from the Strength and SinkRank indices. Considering the Strength, which computes the intensity of message inflows and outflows (corresponding to inward and outward payments), the countries with the largest number of incoming flows are the United States, Germany, the United Kingdom and China, while in regards to the outgoing flows United States, United Kingdom and

¹³ The main difference with the theory of optimal currency areas is that the latter analyzes the institutional aspects of the economies under consideration, such as the labor market or the coordination of fiscal policies. Cook and Soramäki's analysis, instead, considers only the monetary flows through the payment system.



Figure 2: Center (Blue) and Periphery (Green) in the International Payments Network.
Source: Cook and Soramäki (2014: 16).

Germany are the most relevant. In general, the top five countries registered flows, both incoming and outgoing, of about 50% of the total. SinkRank is a metric that computes the speed at which a message sent anywhere in the network reaches a specific node. The degree of centrality of a country is positively correlated to the value of the SinkRank index. Also according to this metric, the United States, Germany, China and United Kingdom represent the countries with the highest degree of centrality. It is not surprising that the countries with the highest levels of centrality coincide with the economies with the highest GDP and trade intensity. As Figure 2 clearly shows, the United States occupy a central position in the global network of SWIFT payments.

Until the late 1990s, SWIFT behaved as a private company and protected the privacy of its customers by denying any request for information from governments or private institutions. After the terrorist attack on the Twin Towers in 2001, the United States Treasury launched the Terrorist Finance Tracking Program (TFTP)¹⁴ to trace the funding network of Islamic fundamentalists. Within this framework, the United States government required access to SWIFT data (Lichtblau & Risen, 2006). From 2001 on, it has been able to obtain information that can be used not only for national security purposes, but also for geopolitical and economic ends (as an instrument of economic defense). A significant step towards

¹⁴ <https://home.treasury.gov/policy-issues/terrorism-and-illicit-finance/terrorist-finance-tracking-program-tftp>.

the use of the payment system for military and strategic purposes (as an instrument of economic warfare) occurred in 2012 when, under American pressure, SWIFT disconnected the Iranian banking system from its payments network (Farrel & Newman, 2019). This measure was part of the sanctions pack that the United States employed in order to stop the Iranian nuclear program. In 2015, Iran, the United States, China, France, Germany, Britain, China, Russia and the European Union signed the Joint Comprehensive Plan of Action (JCPOA). By signing the agreement, Iran ensured to stop the development of nuclear weapons in return for the end of economic sanctions. Nevertheless, the United States broke the deal and reactivated sanctions against Iran three years later, even if the International Atomic Energy Agency stated that Iran did comply with the JCPOA terms.¹⁵ As a response to Trump's foreign policy, the European Union decided to equip itself with a system that facilitates payments to Iran by avoiding the use of the SWIFT system. This system is called INSTEX (Instrument in Support of Trade Exchanges) and has been operational since June 2019. INSTEX's mission is to encourage "legitimate trade" with Iran, as declared by the EU High Representative/Vice-President Federica Mogherini.¹⁶ In November 2019, the first EU countries that joined INSTEX were Belgium, Denmark, Netherlands, Finland and Sweden.¹⁷ INSTEX works in collaboration with the ISTFI (Special Trade and Finance Instrument), the Iranian counterpart that manages flows in and out of the country. The first transaction operated by the INSTEX system, approved by ISTFI, was made on March 31, 2020¹⁸ and concerned the financial coverage of medical equipment supplied by France, Germany and the UK. Nevertheless, private companies avoid using INSTEX given the fear of running into American sanctions. In sum, the INSTEX case has shown the European Union how much its dependence on the United States of America is still high in a world where the dollar is the international currency and the payment system can be weaponized.

In 2017, following UN resolution 2371,¹⁹ three North Korean banks were disconnected from the Swift system.²⁰ More generally, the possibility that the payment system is no longer a neutral instrument but that it can become a weapon

¹⁵ <https://fas.org/sgp/crs/mideast/RS20871.pdf>.

¹⁶ https://eeas.europa.eu/headquarters/headquarters-homepage/65472/node/65472_pt.

¹⁷ Actually, the countries joining INSTEX are Germany, France, United Kingdom, were Belgium, Denmark, Netherlands, Finland and Sweden.

¹⁸ <https://www.ft.com/content/5a647865-85e1-4919-9a55-e852ac06f67e>.

¹⁹ Resolution 2371, in addition to banning the export of several commodities, further limited the activities allowed to counterparties with North Korea's Foreign Trade Bank.

²⁰ Wagstaff & Bergin (2017), <https://www.reuters.com/article/us-northkorea-banks-swift/swift-messaging-system-bans-north-korean-banks-blacklisted-by-u-n-idUSKBN16F0NI>.

used by the American government and its allies has alarmed their main antagonists such as Venezuela, Cuba, North Korea, Iran, Russia and even China.

Using SWIFT is probably the most powerful economic weapon that the US can employ against an enemy. The Russian case is emblematic from this point of view. In 2014, a package of joint sanctions was imposed by the United States and the EU on the Russian Federation following the Russian invasion of part of Ukrainian territory. These sanctions mainly concerned three strands. The first consisted of the immediate blocking of direct military and financial supplies aimed at these purposes. The second dealt with stopping supplies of goods and services related to oil exploration in the Arctic sea. The third aimed to stop the issuance and trading of debt products for all companies related to the energy and military sector (Christie, 2016; Giuminelli, 2017).

The use of SWIFT as a weapon against Russia was not directly employed, but was used as a threat. The threat could have been credible, given what had happened to Iran in 2012. Indeed, this prompted the first Minister Dmitry Medvedev to declare in January 2015: “If such a decision is taken our economic reaction, and reaction in other spheres, will be unlimited” (Christie, 2016).

Recently, the Venezuelan government has made it known that it is considering joining the Russia’s payment system SPFS (translated from Russian: System for Transfer of Financial Messages) in case the American sanctions also involved the use of the SWIFT system.²¹ SPFS is Russia’s replica of the SWIFT system, conceived and developed by the Central Bank of Russia. The system has been a strategic response to US threats to disconnect Russia from SWIFT in 2014. The first transaction in this system occurred in December 2017. SPFS currently handles approximately 15% of transactions within Russian borders and it counts more than 400 banks and large commodity exporter companies in their network. A Russian MP recently declared that Russia is “ready to switch off SWIFT”.²² Statements of this type are indicative of the “spirit of the time”.

Of significant importance is also the fact that the Chinese CIPS (Cross-Border Interbank Payment System) is willing to connect with Russia’s SPFS.²³ CIPS is a Chinese payment system created in October 2015 to provide clearing and settlement services for payments in renminbi. In March 2016 CIPS decided to use SWIFT for the management of payment order information, similarly to American

21 Laya & Andrianova (2019), <https://www.bloomberg.com/news/articles/2019-07-16/weary-of-sanctions-venezuela-mulls-using-russian-payment-system>.

22 Aggarwal (2018), <https://sites.tufts.edu/fletcherrussia/parv-aggarwal-how-u-s-sanctions-are-fostering-innovative-strategies-for-resiliency-in-russia/>.

23 Villasanta (2019), <https://www.btimesonline.com/articles/122708/20191202/china-india-russia-abandoning-swift.htm>.

payment systems CHIPS and Fedwire. The peculiarity of CIPS is that, in addition to being a payment system, it was designed to be able to transfer communications between financial intermediaries. The fact that in the initial phase of its activity CIPS relied on SWIFT does not mean that it is dependent on it (Prasad, 2017). Likewise, CIPS would not depend on the Russia's SPFS. From a strategic point of view, the Chinese choice to conceive a payment system that allows it to send and receive information about financial transactions by relying on different operators and, if necessary, to be able to provide this service itself seems very prudent.

4 The Threat of Stablecoins to US Dollar Hegemony

International tensions between countries also push private economic operators to implement protection strategies against the possibility of remaining disconnected from the international payments network. This is indeed one of the reasons that gave notoriety and traction to bitcoin, in 2010, when it started to be used as an alternative to conventional payment circuits that had blocked donations in favor of WikiLeaks, the nonprofit organization that publishes secret information and news leaks from anonymous sources (Fantacci, 2019: 118).

The proliferation of stablecoins is a phenomenon that should also be seen in light of this international scenario (for example, the Venezuelan cryptocurrency Petro). In fact, unlike first generation cryptocurrencies such as Bitcoin, stablecoins could be good substitutes for the official currencies, at least to the extent that they managed to maintain their promise of a low variability of their value.

For this reason, regulators in many countries subject to trade sanctions have changed their approach to this type of payment instruments. For example, in 2018 the Iranian Central Bank banned the use of cryptocurrencies considered as financial instruments used for illegal and terrorist activities. Just a year later, due to the tightening of sanctions by the United States and the exclusion of Iranian banks from the SWIFT circuit, Iran has signed a trilateral blockchain cooperation agreement with Russia and Armenia (Kirkpatrick, Savage, Johnston, & Hanson, 2019).

Also in Russia the approach to cryptocurrencies has recently changed. In 2017 they were considered by the Russian Central Bank as a Ponzi scheme or, in any case, as a means for activities of dubious lawfulness. By contrast, in 2018 Sergei Glazev, an economic advisor to President Putin, claimed that "this instrument (a state cryptocurrency) suits us very well for sensitive activity on behalf

of the state. We can settle accounts with our counterparties all over the world with no regard for sanctions”.²⁴ Recently, a cryptocurrency proposal has been put forward by Russia to the BRICS countries (Brazil, Russia, India, China and South Africa). Kirill Dmitriev, the head of Russia’s Direct Investment Fund (RDIF), said that “an efficient BRICS payment system can encourage payments in national currencies and ensure sustainable payments and investments among our countries, which make up over 20% of the global inflow of foreign direct investment”.²⁵ The proposal is still vague and it is not clear how this stablecoin would be conceived and implemented.

Venezuela is the only country that has already created a state cryptocurrency called Petro (at least according to government sources).²⁶ Petro was launched in order to circumvent American economic sanctions and try to get out of the inflationary trap that the country is still facing. The coin is a cryptocurrency backed by oil reserves. The Venezuelan government declares to have issued 100,000,000 of Petros with a value of USD 60 each (corresponding to the price of a barrel of oil at the time of issue). The proceeds from the issuance of the coins were used to finance current government expenditures. In the Petro white paper, Venezuela’s government emphasized the fact that Petro is an independent and decentralized currency system built on the blockchain technology (Anchustegui & Hunter, 2019). This independence is deemed necessary given that the dollar-dominated international financial system has led to uncertainty and instability from which the BRICS countries wish to free themselves. In any case, the lack of data and information regarding the circulation of Petro, inside and outside Venezuela, make it impossible to assess the effectiveness of this currency. The only certain thing is that the United States government “prohibits, among other things, transactions by a United States person or person within the United States related to: certain new debt of Petroleos de Venezuela” (Anchustegui & Hunter, 2019).²⁷

Even China started by banning cryptocurrencies altogether and only recently moved to a more open position. The Chinese Central Bank recently said it was developing several projects related to digitization, blockchain construction as well as alternative payment systems, including a state-sponsored CBDC.²⁸ It is relevant to note that the Chinese approach is completely different from that of the other

24 Seddon & Arnold (2018), <https://www.ft.com/content/54d026d8-e4cc-11e7-97e2-916d4fbac0da>.

25 Ostroukh (2019), <https://www.reuters.com/article/uk-brics-summit-russia-fx/russia-says-brics-nations-favour-idea-of-common-payment-system-idUSKBN1X01KQ>.

26 <https://www.ft.com/content/bceca4-16b3-11e8-9376-4a6390addb44>.

27 US government Executive Order (EO) 13808, ratified on August 24, 2017.

28 Murphy & Yang (2020), <https://www.ft.com/content/f10e94cc-4d74-11ea-95a0-43d18ec715f5>.

countries just mentioned. This is due to several reasons. China is implementing a strategic innovation plan as a way to improve the efficiency of the financial system. In particular, the use of digital money has increased considerably in China in recent years.²⁹ Secondly, in addition to facilitating transactions, the ambitious innovation plan allows increasing the transmission channels of monetary policy. Last but not least, the creation of a *de facto* stablecoin backed by the country with the highest trade balance surplus in the world could represent a strong threat to the dollar, at least as a means of settlement in international transactions.³⁰ From the point of view of defense economics, the Chinese conduct indicates the Chinese objective of building a state-of-the-art financial system in order not to have to depend on other countries and to create means and channels of payment that allow it to circumvent US sanctions. From the point of view of the economy warfare, the creation of a Chinese cryptocurrency could be seen as an instrument of currency warfare which aims to undermine the role of the dollar in international markets. The intensification of trade between China and developing countries, often characterized by very fragile financial systems and poor infrastructures, could be facilitated by a user-friendly Chinese CBDC. Indeed, the Chinese economic penetration in these countries could rebalance the use of the dollar that traditionally characterizes developing countries. Given that China has such a level of economic relations with the US that it does not fear disconnection from SWIFT, the launch of a Chinese CBDC can be read as a signal of a de-dollarization strategy.

To be sure, as even these developments show, the status of the dollar as a means of international settlement and as an official reserve asset for central banks throughout the world could be challenged by other currencies regardless of the underlying technology, and particularly regardless of the fact of being based on DLT. At least theoretically, there is no need, say, to transform the renminbi into a CBDC for China to promote the use of its currency on a global scale: the monetary hegemony of the United States can be eroded e.g. also through swap agreements between central banks, since swap lines have proved to be an important instrument of dollar hegemony even in the wake of the Global financial crisis (Tooze, 2018, p. 220; on the Bank of China see Armijo & Katada, 2015). However, the circulation of a CBDC has the potential of precipitating the change from one currency to another by involving also retail payments, online or via cell phone, and hence by making the currency accessible to the population at large. This is what lead Mark Carney, then governor of the Bank of England, in his speech at the Jackson Hole Symposium in 2019, to point to CBDCs as a potential step towards what he called a Synthetic Hegemonic Currency: “Technology

²⁹ <https://www.ft.com/content/a97d76de-035e-11e9-99df-6183d3002ee1>.

³⁰ This would not necessarily entail also that the renminbi would be used as a reserve asset, since the latter function would require a liberalization of capital movements, which China has appeared so far reluctant to adopt.

has the potential to disrupt the network externalities that prevent the incumbent global reserve currency from being displaced” (Carney, 2019, p. 15).

5 Scenarios of Future Developments

From a technical point of view, there is the possibility that a stablecoin could become an international currency used as a means of payment and as a reserve asset. However, what remains unclear are its potential geopolitical effects as an alternative international monetary architecture. Proceeding by points, let’s try to highlight which scenarios related to the introduction of stablecoins in the international monetary arena may emerge from the point of view of defense economics and economic warfare. We start by distinguishing stablecoins issued by private companies and stablecoins developed by governments or central banks (CBDC), bearing in mind that this distinction could become very blurred and even disappear entirely in the case of conflicts.

As for the private sector, a preliminary consideration is that the possibility of issuing a stablecoin by a large corporation such as Facebook, Google or Amazon could in a short time make the stablecoin reach a very high degree of diffusion. But why could a private stablecoin have significant geopolitical and strategic effects? Considering the first two typologies of stablecoins presented in Section 1.1, different reasons emerge.

First of all, the decision by the issuer of stablecoins to choose which currencies or assets, and in what proportion, should be part of the portfolio against which the currencies are backed, is of great relevance. To be more precise, a stablecoin that achieves a high capitalization³¹ could have significant impacts on the relative value of the currencies composing the basket, due to the massive buying and selling of the latter on the part of the entity (or algorithm) that manages the reserves. This could be amplified by the stablecoin regulation: a given currency or asset could no longer comply with the requirements for inclusion in the stablecoin portfolio. For example, if a country’s currency were to experience a sharp fall in value due to an idiosyncratic shock, the liquidation of the currency by the

³¹ The term capitalization has gained traction to indicate, in analogy with securities listed on the stock market, the amount of a cryptocurrency circulated by the issuer multiplied by its price. However, this serves merely as a measure of the diffusion and acceptance of a cryptocurrency, and should not be intended literally, since cryptocurrencies cannot be strictly assimilated to securities to the extent that they do not entail similar rights for the holders and obligations for the issuers (see Amato & Fantacci, 2020).

stabilization fund backing the stablecoin could accentuate the devaluation of that currency.³² It could be said therefore that the stablecoins system is pro-cyclical.³³

However, as far as our analysis is concerned, this could also take place with strategic purposes. In light of the SWIFT case, it cannot be excluded that government pressure on private actors may be on the agenda. The purpose of such actions would be to trigger a currency crisis, or in any case, economic damage to the opponent. In peacetime, the stablecoin manager could still be pressured by the government to extract information for defensive purposes and for national or strategic monitoring of that opponent and his economic system. As for stablecoins backed by private assets and not by currencies or public debts, creating instability in the value of the assets underlying the stablecoin could be even easier. The 2007 crisis showed how MBS (mortgage backed securities) characterized by a high rating lost their AAA and AA standing in a very short time.³⁴ Indeed, the high financial instability that could be generated by stablecoins should alarm regulators all over the world in the case of their diffusion. From the point of view of our investigation, it is important to emphasize the ease with which these coins can lose their stability for strategic purposes. Similarly to big tech companies, private stablecoins could exploit network effects to expand in scale and scope, eventually taking on a geopolitical relevance. Like social networks, private stablecoins would then gain the attention of governments, in the countries of both the issuer and the users.³⁵ In case the value of the assets backing the stablecoin could be influenced by the government, further economic damage could be caused to the holders of this currency.

Up to now, we have considered how a government can draw interest from issuing, managing, or extracting information from a stablecoin. The same considerations, albeit in a more limited way, can be referred to relations between

32 Like the abandonment of silver as a reserve asset by the newly established German Empire after the Franco-Prussian war caused a depreciation of silver that ultimately led to its demonetization also in other countries between 1871 and 1875 (Oppers, 1996).

33 Of course, trading rules are crucial in triggering this phenomenon. Nevertheless, in this work we did not delve into the analysis of the trading rules, because it would have made us deviate from the core of the paper.

34 This is not the place for an in-depth analysis of the 2007 crisis. We limit ourselves to mentioning two papers that investigate the root causes that triggered this crisis: the transition from an originate to hold banking system to an originate to distribute banking system (Purnanandam, 2011) and the systemic nature of creation currency implemented by the shadow banking system (Biondi, 2017). For a detailed account of the crisis, we suggest *Crashed: How a Decade of Financial Crises Changed the World* (Tooze, 2018) and for a more technical analysis of the financial instruments involved, we refer once again to Ricks (2016).

35 The geopolitical implications of social networks is clearly illustrated by the recent controversy between the US and China concerning the video sharing platform tiktok.

private companies issuing and using stablecoins (with the difference that the injured party could appeal to the protection of the national judicial system), and between a private stablecoin issuer and a small country. There are many cases in which transnational companies manage to influence weak government policies.³⁶

The role of the custodian of the assets with which the stablecoin is backed deserves separate consideration. In some cases, this role is performed directly by the stablecoin manager whereas in others it is entrusted to a third party. Obviously, the custodian of the assets could be of strong strategic interest for anyone who intends to undermine the value of a stablecoin. On the one hand, the intelligence of a government could infiltrate or assume the role of custodian by acquiring the power to make the stablecoin fail; on the other hand, the keeper could be a strategic target to attack.

As for CBDCs, in addition to all the ways in which private stablecoins could be used for military and defense purposes, other specific ones apply. In particular, on the one hand, a state stablecoin allows counting on a secure payment system not subject to the influence of potential enemies and to their hostile actions such as penalties (even private stablecoins could fulfill the task, yet they would do it with a lower degree of security given the uncertainty about their reliability). Furthermore, China, Russia and the other BRICS members may have an interest in de-dollarizing the international monetary system. At the end of 2019, world currency reserves were approximately 62% held in dollars and 20% in euros. The fact that the United States issue such a large amount of global monetary reserves allows them to benefit from an “international seigniorage” (Amato & Fantacci, 2012: 96). There is no doubt that in a world that is returning multi-polar with at least two other military superpowers, the international monetary system will be affected by major changes.

As history suggests, the international monetary system, and the balance of power between individual national currencies within it, have always been the projection of the relative economic and military importance of the respective issuing countries. It is sufficient to recall how the classical gold standard (1870–1914), although formally a monetary system not centered on any of the acceding countries, actually used the British pound as an international currency (Amato & Fantacci, 2012: 159–173). This was mainly due to the fact that Britain was the country with the highest level of foreign investments, as well as the most powerful empire, while London was the most developed financial center. After the Second World War, the international system adopted was a gold exchange standard (1958–1971), characterized by the fact that all the currencies were convertible into dollars

³⁶ A typical example is the case of the oil company Exxon Mobil. For a detailed account, see Coll (2012).

and only the dollar was convertible into gold. In analogy with what happened for the classical gold standard, the country characterized by the highest international credits and gold reserves became the supplier of international currency. In this case, however, the role of the dollar had been explicitly codified in the Bretton Woods Agreements. By the end of the 60s the gold standard turned out to be unsustainable given the impossibility of the system simultaneously to finance, on the one hand, the Cold War and the American dream and to maintain, on the other hand, gold convertibility (Triffin, 1960). It could be argued that the United States was forced to establish a monetary regime compatible with the war and the national development it was promoting (Fantacci & Gobbi, 2018).

Since the end of the gold exchange standard, the international non-system of fiat money has been characterized by the dollar as the *de facto* international currency. The fact that a country can issue international currency involves many privileges (Eichengreen, 2011), but almost inevitably leads it to a chronic deficit of its current account (Amato & Fantacci, 2012). As is widely known, the US deficit is the counterpart of the Chinese large trade surplus. It would almost seem that China is in the same situation as Britain in 1870 and the United States in 1945 being the country with the largest trade surplus. If the analogies are very strong, so are the differences. In general, in commodity-backed money systems, such as the international gold standard, a country that has constant trade surpluses ends up holding large reserves of this commodity and therefore, holding a large part of the reserves of this commodity, it would become the main candidate to assume the role of issuer of international currency. In a fiat money regime, when a country registers a structural trade surplus it accumulates reserves of the currency of the country issuing the international currency (or of the asset(s) denominated in it, namely the US public debt). This leads to a structurally different dynamic from that described above, given that the country issuing the international currency, the United States, and the country characterized by the highest current account surplus in the world, China, are strongly interrelated. China's use and development of its own currency and international payment system could be a way of reducing this huge financial interrelation. In an international multipolar context characterized by a sort of new cold war, it is possible that we will witness processes of re-localization of production chains and strategic assets, also fostered by the lockdown following the Covid19 contagion.³⁷ This could strengthen the gradual de-dollarization of the payment system.

As discussed above, stablecoins are generally pegged to a currency or to a basket of currencies. Now, in the wake of the global epidemic and of the extreme monetary policies that are deployed to address it, official currencies will quite

37 <https://www.ft.com/content/696d0406-181c-4972-a158-06b610f50dbd>.

likely be subject to increasing fluctuation of their value, both in terms of purchasing power and in terms of exchange rates. In this scenario, stablecoins could potentially represent a more stable money than official currencies, if they were anchored to a basket of commodities. The composition of the underlying basket could change according to the specific purpose for which the stablecoin is designed. In other words, it could be tailored to the specific exchange circuit in which the stablecoins is intended to circulate. For example, a stablecoin targeted to international trade could be based on, and even actually backed by, a basket of staples (foodstuffs and raw materials). The most simple way of implementing this concept would be by backing the stablecoin with commodity futures; but this would leave the stablecoin exposed to the extreme volatility of such instruments and perhaps contribute very little to the stabilization of the price of the underlying commodities. Another, more radical implementation would involve backing the stablecoin with actual commodities: this, of course, would entail building up reserves of raw materials and foodstuffs, along the model of the commodity reserve currencies that have been repeatedly proposed over the past decades by economists of the most different orientation, ranging from Hayek and Friedman to Kahn and Keynes (Fantacci, 2017). Instead, a stablecoin for the domestic economy could be anchored to a basket of consumption goods, such as the consumer price index.

Whatever outcome may be deemed more desirable, it is difficult to make any type of forecast regarding the future, particularly at a time when uncertainty is increased by the effects that the pandemic will have on national economies and on the international payments system. Future investigations will therefore be necessary.

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