

From money to commodity: comparative case studies in demonetization

Article

Published Version

Creative Commons: Attribution-Noncommercial-No Derivative Works 3.0

Open Access

Sampeck, K. ORCID: <https://orcid.org/0000-0001-5839-8662>
and Chirikure, S. (2023) From money to commodity:
comparative case studies in demonetization. *World
Archaeology*, 55 (5). pp. 540-561. ISSN 1470-1375 doi:
10.1080/00438243.2025.2462286 Available at
<https://centaur.reading.ac.uk/122796/>

It is advisable to refer to the publisher's version if you intend to cite from the work. See [Guidance on citing](#).

To link to this article DOI: <http://dx.doi.org/10.1080/00438243.2025.2462286>

Publisher: Taylor and Francis

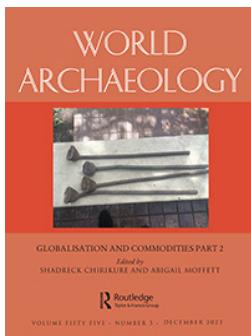
All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the [End User Agreement](#).

www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading

Reading's research outputs online



From money to commodity: comparative case studies in demonetization

Kathryn Sampeck & Shadreck Chirikure

To cite this article: Kathryn Sampeck & Shadreck Chirikure (2023) From money to commodity: comparative case studies in demonetization, *World Archaeology*, 55:5, 540-561, DOI: [10.1080/00438243.2025.2462286](https://doi.org/10.1080/00438243.2025.2462286)

To link to this article: <https://doi.org/10.1080/00438243.2025.2462286>



© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 13 Mar 2025.



Submit your article to this journal [↗](#)



Article views: 197



View related articles [↗](#)



View Crossmark data [↗](#)

From money to commodity: comparative case studies in demonetization

Kathryn Sampeck ^{a,b} and Shadreck Chirikure ^{c,d}

^aDepartment of Archaeology, University of Reading, Reading, UK; ^bDepartment of Sociology and Anthropology, Illinois State University, Normal, Illinois, USA; ^cResearch Laboratory for Archaeology and the History of Art, University of Oxford, Oxford, UK; ^dDepartment of Archaeology and Human Evolution Research Institute, University of Cape Town, Cape Town, South Africa

ABSTRACT

Archaeological studies of money typically focus on its initial emergence and mature development. This study examines the denouement of a commodity money and the economic, social, and political implications of the transition from a money to a commodity role. Previous studies of money emphasize that it is socially constructed, shapes markets, and is historically contingent. Geographic and chronological variability of money systems is well supported archaeologically. This paper examines archaeologically observable evidence of two case studies: (1) *marale* copper ingots in Southern Africa and (2) cacao in Mesoamerica. Despite chronological and geographic variability in the nature and uses of money, these case studies indicate important common trends in demonetization that are attempts to usurp the political, fiscal, and social power of money.

KEYWORDS

Alternative currencies;
currency circuits; Africa;
copper ingots; Mesoamerica;
cacao

Introduction

‘For they say, if money go before, all ways do lie open’ observes the character Ford (as Brook) in Shakespeare’s *The Merry Wives of Windsor* (Shakespeare [2015] n.d., Act 2, Scene 2, lines 169–170). This interlude in the play emphasizes how money opens opportunities, facilitates interactions, and in a broad sense, empowers. This article evaluates monetary power by considering its undoing – the demonetization of a money token – and asks if money opens opportunities, what does demonetization close?

Some archaeological studies take what money is and how it works as an assumption, while others classify evidence of money in terms of well-known categories such as coinage (Colin and Krmnicek 2012; Rosenswig 2024b). No matter the theoretical position, archaeological studies of monetization tend to focus on the emergence and elaboration of money systems, such as bent bars (Satamāna) from India (Dhavalikar 1975), manillas and cowries in West Africa, copper ingots in Central Africa (Bisson 1975), Kula rings from the Pacific, Yap stones in Micronesia (Fitzpatrick and McKeon 2020), and tea bricks in Tibet (Reynolds 2006). Instead of beginnings, however, this paper considers endings and the de-monetizing of money.

CONTACT Kathryn Sampeck  k.e.sampeck@reading.ac.uk  Department of Archaeology, School of Archaeology, Geography and Environmental Science, University of Reading, Wager Building, Pepper Lane, Whiteknights, Reading, Berkshire RG6 6EJ, UK

© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

In this article the money tokens of *marale* copper ingots in Southern Africa are compared with the product of cacao in Mesoamerica. These regions separated by two continents feature the legacy of extensive money systems and evidence of demonetization, often as part of colonial and post-colonial strategies of power and control. Even more important for relevant points of comparison is that despite their geographical, cultural, and chronological differences, demonetization took the same path minimizing the roles of copper and cacao through production, circulation, and consumption and in doing so commodifying them. In this work *commodity* designates items that, in accordance with prevailing cosmologies/worldviews, have economic, social, and political value (Chirikure and Bray 2025). Chirikure, Killick, and Stephens (2024) emphasize that commodity production, exchange and consumption are crucial for achieving globalization for peoples across multiple scales in a wide array of geographic and temporal contexts. Large-scale production, well beyond even regional needs, fuels global commodity networks, yet having enough stuff is just one factor in the extent and frequency of exchanges and their broader socio-economic and political effects. The effects of currency demonetization are archaeologically observable yet it has not been a major focus of research. The case studies presented here from Southern Africa (northern South Africa) and Mesoamerica (El Salvador) offer steps towards this gap offering examples that illustrate the expansion and change of markets, movement away from the extractive processes that maintained indigenous frames of reference and sovereignty, precipitous absorption of native wealth, and dismantling and supplanting of institutions.

What is money? A very brief review

Recent archaeological studies have reviewed money theory and examples of material evidence (Rosenswig 2024a, 2024b; Sampeck 2021). The anthropologist Karl Polanyi (1957, 264) defined money in functional terms, as objects used for payment, a standard of accounting, and a medium of exchange or standard of value. Money acts as a store of wealth (Quiggin 1949; von Mises 1953). Published research also emphasizes different factors in monetary origins, functions, and consequences (Dalton 1965, 1990; Innes 2004; Smith 2004, 90–91). Two common models are: (1) money arises as a natural outcome of exchange, or a ‘monetarist’ model (Frey, Pommerehne, and Schneider 1983; Marx (1863–1867) 1921, Smith [1776] 1970). This perspective promotes what historian Desan (2010) has called the ‘myth’ of money – that money is neutral and universal (has the same characteristics and effects wherever it occurs); (2) money is created by the operation of state institutions (Hart 1986). A third, compelling approach emphasizing the contingency of money in terms of form, value and use is the ‘constitutional’ model (Desan 2010). Desan (2010, 25) acknowledges money as a collective activity that links individuals and communities: “‘money’ is invented when a community, acting through a stakeholder, denominates in a homogeneous way the disparate contributions received from members, and recognizes them as a medium and mode of payment’. Desan (2010, 38) suggested that private use of money probably followed, rather than preceded, its deployment for public purposes, ‘... as people pioneered different kinds of money, they created different kinds of markets’ (see Bloch and Parry 1989, 18). Finding a coin or a stash of them is not a sure sign of a monetized system, however, as Graeber (2011, 130) emphasizes – money occurs in places where markets and states do not exist and is seldom used to buy and sell anything at all, but instead is a component of crucial acts central to relationships between people.

In this paper, money is recognized as a token relevant to the relationships between people in a society, the accumulated institutions of a polity, and as a framework for systems of value, including markets and finance (Hart 1986, 646; Polanyi [1944] 2001, 72, 196; Veblen 1904).

Recent scholarship emphasizes that the potential roles of money may be distributed across multiple objects or may be variably deployed depending upon the social situation (Baron 2018b; Dalton 1982; Fitzpatrick and McKeon 2020; Kuroda 2008; Polanyi 1957). Diverse systems of financial instruments in different cultural contexts varied in their appropriateness to different monetary functions and could have different geographies of circulation (Dalton 1965; Einzig 1948, 321; Guyer 1995, 9; Snell 1995). Kuroda (2008) emphasizes factors of timing or seasonality, money supply, and exchange networks, that generate distinct, concurrent currencies.

Archaeological and anthropological studies provide evidence of diverse currencies in different geographic zones and time periods. Ostrich eggshell beads recovered from later Middle Stone Age (c. 33 000 before present) cave deposits in Lesotho were probably acquired through exchange (Stewart et al. 2020). In Switzerland, excavations at the settlement at Burgäschisee-Süd, a Cortaillod village (3900–3500 BCE), recovered beads that might have been used for social exchange or functioned as a special purpose money (Ottaway and Strahm 2010). In Viking-Age economies (800–1100 CE) silver hoards on the island of Öland, off the Swedish east coast, were a mixture of foreign coins, bars and ingots, hacksilver and complete objects suggestive of a non-uniform economy in which different kinds of ‘money’ circulated in different spheres within society, including super-regional and long-distance exchange networks (Thurberg 1988). Working with examples from late imperial and early republican China, Japan and India, Kuroda (2008) frames the distinctive circulation in time and space of different monies as ‘currency circuits’, a helpful idea for this comparative study. In Nigeria, long before British currency was imposed in Lagos in 1880, ‘Mexican, Peruvian, Brazilian and Chilean dollars circulated freely alongside British gold, silver and copper coins, Spanish and South American gold doubloons and half doubloons, American double eagles, eagles, half eagles and quarter eagles, French twenty-franc pieces, gold dust and nuggets, and Maldivian and Mozambique cowries’ (Guyer and Pallaver 2018, 10). Kuroda (2008, 18) asserts that ‘actual operation of markets in history required plural monies’. These and other studies reveal a consistent pattern across time a place of co-existing culturally contingent monies and systems of circulation (for example, Houlbrook 2015; R. Rosenswig 2024, 2024b; Schrauwers 2020).

A significant factor that can foster diversity in a monetary system is colonial expansion and co-option. Colonizers often introduce their money tokens to propagate arenas of operation and value that may or may not overlap with existing indigenous monetary systems. Guyer and Pallaver (2018, 11) emphasize that adoption of coins and notes introduced by the colonial power in Africa from the late nineteenth century onward was a gradual rather than an abrupt transition, ‘encompassing the coexistence, sometimes for decades, of multiple currencies that had different implications for economic life and social relations’. The supply and viability of indigenous African monies smoothed the way for the colonial state and the challenges of introducing enough colonial currencies to satisfy needs within an already lively monetary economy (Guyer and Pallaver 2018). Conversely, African people working for Europeans used means of payment as a political and social strategy, demanding the continued use and value of African monies by refusing to be paid in colonial money (Guyer 2004; Guyer and Pallaver 2018, 14).

Why demonetize?

Many archaeological, anthropological, and economic studies assessing the movement of tokens in and out of monetary systems do not consider the moving ‘out’ as demonetization (e.g. Baron 2018a, 2018b; Bisson 1975; Colin and Krmnicek 2012; Ottaway and Strahm 1975; Reynolds 2006; Rosenswig

2024a). Demonetization is a process of stripping the currency unit of a political or social entity of its status as legal tender of exchange, ending its legally enforceable validity. Demonetization therefore involves divesting a monetary standard or token of value, withdrawing the money from use, and depriving it of validity. As the two case studies in this paper show, demonetization is closely tied to changing political and economic realities.

From a constitutional perspective, killing old monies and birthing new ones is a crucial way to transform local economic structures and relationships of governance. Maurer (2018) points out that demonetization is the state asserting control over the unit of account. Economic factors aided by demonetization include constructing export-oriented economies, controlling macro-economic conditions in colonies and increasing seigniorage revenues – the profit a government issuing a currency makes due to the difference between the face value of a money token and their production costs – for financing local colonial governments. Truitt (2018) contrasted campaigns to promote a national gold form in Asia that were state-led efforts to intervene in processes of value creation. The Vietnamese state sought to demonetize gold, the Indian state to promote its monetization; the divergent paths in part lie with the histories of gold in each that shaped its role as a particularly potent symbol of economic liberalization that links citizens in the Global South with actors in the heart of the international monetary system (Truitt 2018). Pertinent to this study, African currencies had no monetary value in Europe and were generally treated as barter items by Europeans, while at the same time, for many Africans, British and other European coins had little or no monetary value, worth only the bullion value of their metal content (Guyer and Pallaver 2018). The material used to make European currencies gained commodity value in Africa. Similarly, African currency tokens became commodities and currencies (e.g. gold) in Europe. The recent episode of demonetization in India by Narendra Modi was driven by a need to curtail the shadow economy, increase cashless transactions, reduce the use of illicit and counterfeit cash to fund illegal activity, and combat tax evasion via ‘black money’ held outside the formal economic system (Ghosh, Chandrasekhar, and Patnaik 2017). The common effect in these diverse examples is that demonetization disrupts a cash economy and re-centralizes stores of value and money supply. Precisely because money is socially and politically constituted, diverse money systems can be seen as a threat and the act of demonetization a means of consolidating power. Maurer (2018, 173) asserts that ‘demonetization is an attempt at control: control the infrastructures in order to channel the value transfer and relations among people’. Demonetization thus reveals tensions among the economic, social, and political meanings of money, political legitimacy, and economic and social values.

What would demonetization look like archaeologically?

A constitutional model allows for variability in governmental control of money creation, circulation and use, from entrepreneurial participation to more centralized systems. The following two case studies from Africa and Mesoamerica reveal the diversity and long legacy of money systems that spanned vast distances. Archaeological techniques can trace the origins of the source material for the monetary tokens, and careful archaeological contextual analysis indicates allied changes in social, political, and economic values.

Commodity money of South(ern) Africa: *marale* copper ingots

Africa is a vast region with a long legacy of well-developed money systems. Before European colonialism in the late nineteenth century, the Northern Lowveld of South Africa was famous for



Figure 1. Four *marale* ingots in the Skukuza Museum, Kruger National Park, South Africa. Photo by Shadreck Chirikure, 2018.



Figure 2. The flat Phalaborwa landscape, Northern Lowveld, and protruding syenite hills (Shankare Hill). The hill slopes and surrounding flats were occupied by Kgopolwe (CE 1000–1300) and Letaba (CE 1600–1900) populations. Photo by Shadreck Chirikure, 2012.

producing golf club shaped *marale* (singular: *lerale*) copper ingots (Figure 1) at places such as Phalaborwa (Mamadi 1940; Miller, Killick, and van der Merwe 2001). The Northern Lowveld of South Africa is a monotonously flat landscape, occasionally disrupted by protruding syenite hills (Figure 2). It is notorious for extremely high temperatures, very low rainfall and the presence of disease-carrying tsetse flies. This prompted some early European travellers and explorers to assume wrongly that the region was unattractive to settlement by indigenous agriculturalists, yet, the region was the focus of a thriving economy sustained by copper and iron production.

The epicentre of *marale* production was Phalaborwa, located near the confluence of the Ga-Selati and Olifants Rivers on the western border with the Kruger National Park. To the east Mozambique lies about 90 kilometers from Phalaborwa, while Zimbabwe is double the distance to the north. This explains why Phalaborwa was a hub for commodity money production and circulation in the past.

Geologically, Phalaborwa is famous for the ore-rich Palabora Igneous Complex (PIC), renowned for hosting over 3 million tons of rock rich in economically exploitable copper (Thondhlana 2013). Between 900 and 1900 CE, indigenous miners extracted outcropping copper carbonates from the PIC and smelted them in Phalaborwa and Lolwe type of furnaces to produce *marale* ingots. *Marale* production cultivated exchanges and relationships in a network spanning hundreds of kilometers over parts of northern South Africa, Mozambique and beyond (Mamadi 1940; Miller, Killick, and van der Merwe 2001). Archaeological and historical research in Phalaborwa and adjacent areas has identified long-lived settlements occupied by copper and iron metallurgists during the Kgopolwe (CE 1000–1300) and Letaba (CE 1600–1900) phases (Pistorius 1989). The archaeological and historical record corresponding with this sequence is associated with ancestors of modern Sotho, Venda and Tsonga people whose descendants still call the Northern Lowveld home (Pistorius 1989; van der Merwe and Scully 1971).

Archaeological evidence of marale production at Phalaborwa

Within Phalaborwa, the center of indigenous copper and iron metallurgical activities was the kidney shaped 32 sq kilometer large PIC, made up of three main geological members namely the Northern Pyroxenite Lobe, Loolekop Lobe and the Southern Pyroxenite Lobe (Miller, Killick, and van der Merwe 2001). Stratigraphically, pyroxenite rocks were deposited earlier, followed by syenite plugs and foskorite rocks, with the central carbonatite (comprised of banded and transgressive deposits) being the youngest. Extensive fracturing of transgressive carbonatites created channels through which copper-bearing mineralizing solutions permeated both the carbonatite and foskorite members of the PIC complex (Palabora Mining Company Limited Geological and Mineralogical Staff 1976). More than 10,000 tonnes of rock containing copper ores are estimated to have been extracted from Lolwe Hill by indigenous miners (van der Merwe and Scully 1971) leaving open galleries, shafts and adits (Miller, Killick, and van der Merwe 2001). The mining of copper involved the use of tools such as dolomite hammer stones, iron gads and chisels to extract malachite and azurite. The labor of men, women and children was employed while strangers and foreigners were not allowed near mines and production areas (More 1974).

Mined carbonate and oxidic copper ores were processed to remove gangue materials for smelting in locations near mines, in settlements and in other suitable areas between the early and late second millennium CE (Miller, Killick, and van der Merwe 2001; Pistorius 1989). Two main types of smelting furnaces – Phalaborwa and Lolwe types – are known in Phalaborwa. The Phalaborwa furnace type (used for both iron and copper) was sub-triangular shaped with three tuyere ports (Figure 3). Internal diameters ranged between 60–100 cm while their heights varied between 80–120 cm (Miller, Killick, and van der Merwe 2001, 406). The site of Square nearly 25 kilometers northwest of Phalaborwa yielded seven Phalaborwa type furnaces associated with about 180 tonnes of iron slag (van der Merwe and Killick 1979). The second type is the comparatively smaller but domed Lolwe furnace type (height of between 40 and 50 cm) with a single tuyère entrance. Regardless of type, the bases of most furnaces found in Phalaborwa and their surrounds contained small central holes used as receptacles for medicines (comprised of a mix of tree bark, roots and in some cases human anatomical body parts) used by smelters to neutralize the power of malevolent forces during smelting (van der Merwe and Scully 1971). It was believed that pollution and evil forces if left alone, could result in unsuccessful smelts (Pistorius 1989).

Once the process of smelting started, prevailing furnace conditions determined how the reduced metal was collected. In conditions with higher fuel-to-air ratios, and sustained



Figure 3. Reconstruction of Phalaborwa type of furnace on display at Masorini 20 kilometers northeast of Phalaborwa town in the Kruger National Park. Photo by Shadreck Chirikure, 2018.

combustion, liquid copper settled at the bottom of the furnace forming on solidification a dish shape with occluded fragments of charcoal, parts of furnace clay and/or sand (Miller, Killick, and van der Merwe 2001). The slag floated on top of the metal and was removed from the furnace. The primary dish-shaped ingot was then refined in crucibles and cast into *marale* ingots and other desired objects. However, in smelting situations maintaining low fuel-to-air ratios and short intervals of smelting, the slag did not become sufficiently liquid to allow reduced metal to pass through (Hauptmann 2007). When the smelting ended, metallic copper froze inside the slag, which was crushed to mechanically remove metal prills for melting in crucibles to cast objects such as ingots (Thondhlana 2013). More reducing conditions reduced iron oxides attached to the copper ore to metallic iron, creating an undesirable Cu-Fe alloy (Mamadi 1940). Comparatively, less reducing conditions produced copper with very little iron. Evidence shows that Phalaborwa people used the two methods, depending on need and situational advantages.

According to Miller, Killick, and van der Merwe (2001), two copper dishes weighing just over one kilogram each were excavated from an eleventh to twelfth centuries CE house floor, associated with a pot containing copper slag at the site of SPK3 in Phalaborwa. At Shankare on the northeastern side of the Cleveland Game Reserve in the same area, Thondhlana (2013) identified a large amount of crushed copper slag and many crucibles that were used to melt prills and cast them into ingots and other objects. According to Miller, Killick, and van der Merwe (2001), the first step in the casting of *marale* ingots involved making molds by preparing fine sand on the ground, followed by impressing a golf club shaped stick. Molten metal was then poured into the resulting shape to create individual ingots (see Figure 1). The ingots look remarkably similar and are fairly standardized. The average rod length and thickness of *marale* in the Skukuza Museum (Figure 1) is respectively 450 mm and 15 mm in diameter. The golf club shaped heads were reasonably standardized with the only difference being that some had but others lacked protruding studs. With the exception of one tin *lerale*, the majority of known *marale* are all made of copper (Miller, Killick, and van der Merwe 2001).

Marale and the political economy

In southern Africa, copper was a highly valued metal used for making decorative and expressive objects. The red colour of copper resonated with cosmology and ancestors, making it a metal more valuable than gold. This prompted Herbert (1984) to label copper the red gold of Africa. Early twentieth-century oral traditions gathered from various communities in northern South Africa sketched an extensive network of *marale* ingot circulation centered on Phalaborwa (Mamadi 1940). *Marale* copper ingots were used as currency, and as mediums of exchange and a measure of wealth.

Once exchanged, the ingots were converted into many uses. For example, they could be melted and worked to produce copper bangles, anklets, armlets and beads all of which are very common at second millennium CE archaeological sites in sub-Saharan Africa. Furthermore, *marale* ingots were used as tokens in bride wealth (*lobola*) transactions during marriage negotiations. It has been suggested that copper ingots could substitute for cattle, showing how valuable they are. In some cases, the *marale* could be kept as heirlooms or stores of value to be exchanged when the need arose. The copper-working Maseke-Malatji Sotho of Phalaborwa are well known producers and traders in copper who often networked with traders from other groups that expanded the network. Their relatives, the Makusane and Majaji-Malatji Sotho, predominantly worked iron and circulated another commodity money, the triangular shaped iron hoes (Figure 4). Like the *marale*, the distribution of these triangular hoes extends from the Maputo coast in Mozambique to the Limpopo River in the north (Chirikure 2015).

What was the role of copper commodity money in the societies of northern South Africa? One of the most striking observations in precolonial southern Africa is that resource rich landscapes, such as ore bodies, did not emerge as the centers of states (Chirikure 2018; Chirikure et al. 2023). The copper and iron rich resource-scapes were located far away from states that dominated northern South Africa such as K2/Mapungubwe (CE1000–1300) and the Venda state (CE1600–1900). Although there were chieftainships around Phalaborwa, no large, complex states emerged (Moffett 2017). However, the production of copper and its



Figure 4. Triangular hoes on display at Masorini, Kruger National Park, South Africa. Photo by Shadreck Chirikure, 2018.

circulation brought in cowries and glass beads from the Indian Ocean together with resources from other regions of southern Africa (Thondhlana 2013; Moffett 2017). This dispersed production model created groups or clans that acquired material possessions but in a heterarchical relationship (Chirikure et al. 2023). In this case, therefore, economic specialization did not result in the emergence of political states. With no centralized control of production and distribution, different Sotho communities such as the clans acquired exotics from the Indian Ocean and in the region, maintaining heterarchical economic and power relations.

Marale demonetization

Indigenous copper and iron production ended in the Northern Lowveld around 1893, when it was banned by the Transvaal colonial government. The assault on commodity moneys such as *marale* was multi-pronged. In the first instance, the colonial government banned indigenous metalworking to stop metalworkers from manufacturing weapons to resist colonialism (Klapwijk 1986). Secondly, some missionaries also weighed in and prompted colonial governments to ban indigenous metallurgy because the smelting of iron and copper was associated with rituals and the use of medicines that often included human anatomical parts. Thirdly, colonization resulted in the loss of land and control over the economy. The copper and iron ore rich lands around Musina and Phalaborwa were taken by the colonial state and subsequently fell under the ownership of private mining companies. With no access to ore sources, and other livelihoods, Africans were forced to work in the mines and to look for work. This process of demonetization was part of a strategy to reduce Africans into wage earners of a colonial currency, dependent on the colony and post-colony.

Commodity money in Mesoamerica: cacao

Money in Mesoamerica has a long history and many forms, and cacao, the seed of a tropical tree, was one kind of currency (Baron 2018a, 2018b). Like copper ore sources in Africa, cacao was also geographically restricted because of the tree's ecological requirements, including lower yields in urban environments due to needs for adequate tree spacing. Cacao is thus parallel to *marale* in that production occurred away from major centers of power. The Mesoamerican case study is a region in what is today western El Salvador, known in the sixteenth century CE as the Izalcos. The landscape of the Izalcos is a well-watered valley of rich soils, bordered by steep volcanic uplands that channel foot traffic through the valley. The critical location of this region for transportation networks is much like that of Phalaborwa. The ideal ecological conditions of the Izalcos made possible extraordinary, unparalleled levels of cacao production compared to other favorable regions in Mesoamerica; like Phalaborwa, the Izalcos were pre-eminent, specialist producers of a substance that served as money. Much like copper ingots versus iron bars in southern Africa, other monetized Mesoamerican items, including cotton cloth and copper axes, had some overlaps in zones of production and circulation. Exponentially higher dry bean production than other Mesoamerican cacao-producing regions in the sixteenth century CE and subsequent resilience, despite colonial traumas, underscores how Izalcos high-yield cacao farmers provided a stable supply of cacao.

Cacao – commodity money and the political economy

Scholars have focused considerable attention on the pre-Columbian and early modern cultural history of cacao. As people today use cacao to make chocolate, scholarly focus is often on cacao as

food, with its use as money a curiosity. Cacao is used to infuse many Mesoamerican foods and drinks that were and continue to be especially important in life course ceremonies such as weddings and in healing practices. Like copper in southern Africa, cacao was also potent in religious belief and practice and a currency, medium of exchange and measure of wealth. Cacao could be stored, used to pay private and public debts, including tribute or taxes, and make purchases of goods and services. Starting about the thirteenth century CE, the Mesoamerican economy became more thoroughly and increasingly monetized, facilitated by a robust supply of cacao 'small coin' that circulated well beyond its cultivation area.

Dynastic lords of ethnic states, known as *altepetl*, managed usufruct rights to land for high-yield cacao production, engendering a system of prebendal rights (Sampeck 2021). Although cacao cultivation likely occurred in hierarchical political and social systems with charismatic, autocratic leadership, the twelfth to fifteenth century CE political leadership in the Izalcos appeared to be collaborative and coalition focused. Archaeological evidence of settlement plans, locations of elite and civic structures, and agricultural infrastructure indicate administrative oversight compatible with consensus-driven governance and household-level decision making (Sampeck 2021).

The invasion of this region by Europeans in the sixteenth century CE fortified the use and circulation of cacao money. Beginning with the first European description of cacao, Europeans in the sixteenth century framed cacao as money. During Christopher Columbus's fourth voyage in 1502, Ferdinand Columbus, Christopher's son, described how the expedition off the Yucatán coast met a trading canoe filled with a dizzying array of goods. Columbus describes how the canoe held 'many of those almonds [cacao seeds] that those of New Spain have for money . . . I noticed that if just one of these almonds dropped, they all immediately bent to recover it, as if an eye had fallen out' (Colombo 1563, 200 r–200 v; translation by Sampeck and Binasco, 2016). Sixteenth-century Spanish colonial officials described the potential for quick profits in the Izalcos in terms of cacao as cash money: 'for truthfully in any twenty leagues of land and province, there is nothing in the world of more profit and less cost, and *all in ready cash*, for the Spaniards call the income from the cacao bunches of gold' (MacLeod 2008, 83, emphasis added). The Izalcos became renowned because many were returning to Spain with their salaries doubled 20 times over (MacLeod 2008).

In contrast to the *marale* case study, cacao's booming value in the sixteenth century CE as money fostered a bottom-up incentive for wage labor paid in cacao money. Whereas metalworkers in southern Africa were dispossessed of their lands and access to metal ores, indigenous cacao farmers in the Izalcos retained control over their orchards and made decisions about agricultural activities and labor. Devastating epidemics, warfare and abuse decimated local populations. Survivors turned to hiring migrant labor to make up shortfalls, an appealing option for residents of low- or non-producing cacao regions that still had to pay Spanish tribute in cacao. For example, Mayas in Verapaz did 'not have work nor employers to pay a day's wage, and if one hires himself out to another here he earns forty cacao beans daily which would be worth ten maravedis, whereas for the same work they earn two reales a day in Sonsonate [the Spanish town in the Izalcos], one for living expenses and the other for saving; so all go there and they cannot be held back, for they argue that they are going to earn the tribute, their shirts and their pantaloons' (MacLeod 2008, 87).

Spanish intervention intensified the cacao currency circuit so that by the mid-seventeenth century CE, cacao was as widely, if not more widely, circulated than Spanish metallic coins as the principal 'small coin' across Mesoamerica. Cacao paid the wages of silver miners in Taxco, in Northwest Mexico, bought everyday items in colonial markets across Mexico and Central America, and satisfied private and public debt across New Spain (Escalante Arce 1992; Haskett 1991). Although one might think that the colonial incentive would be to replace indigenous moneys, in

The cacao money example is important because it adds details of timing and complexity of contrary dynamics to the process of demonetization. Records of abuse, theft, extortion, disproportionate local demands for cacao tribute, and pressures of cacao payments from low- or non-producing nearby regions show the diverse, interrelated ways the first phase of divesting Izalcos producers of their wealth was through debt in cacao money. At the same time, Spanish demands in cacao money fortified its economic, social, and political relevance.

This continuation of cacao's important monetary role paved the way, however, for reconfiguring producer-consumer relationships to consolidate Spanish economic and political power. Two inter-related, important contributing factors to the demonetization of cacao in the early seventeenth century CE were the emergence of new intensive cacao production zones and tremendous growth in the culinary use of cacao across the Americas, Europe and to a small extent in Asia.

Making and using money relates to stakeholder capacity to create the medium and continue to supply it (Sampeck 2021). As previously described for *marale* ingots, the archaeological correlate of such capacity includes a location, or administration of places, where money production is possible, such as locations with access to copper ore deposits, or in the case of cacao, fertile, ecologically favorable cultivation zones. Cacao agroforestry requires consistent attention to the condition of trees and agricultural infrastructure. Evidence of the degree of directed or entrepreneurial cultivation, processing, and distribution shown by infrastructure integration or coordination (terracing, irrigation networks, etc.) and specialization.

Simply put, does archaeological evidence indicate location in cacao-favorable zones, and to what degree does the infrastructure indicate centralized or entrepreneurial control? The settlement pattern changes from dispersed settlement pattern characteristic of cacao growing zones from 1200 to 1500 CE, to initial colonial activity including Spanish-mandated forced relocation to nucleated settlements 1520–1580 CE, and then from 1580–1615 CE, a resurgence of the cacao-friendly dispersed settlement (Figure 5). Even during the shift to more nucleated settlements, the

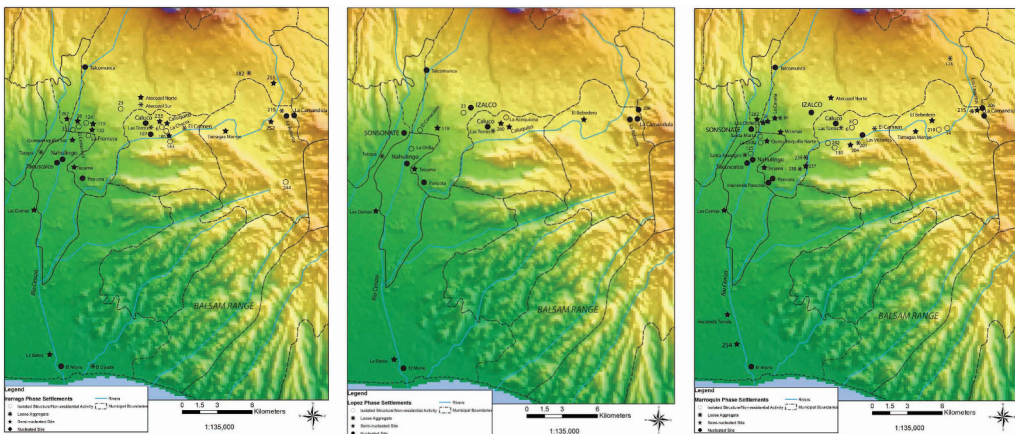


Figure 5. Settlement pattern changes in the Rio Ceniza Valley from 1200–1500 (left), to initial colonial (1520–1580; center), to 1580–1615 (right). Maps by Sean Stretton, 2015.

new places often replicated the access to resources and spatial organization of the previous phase, maintaining access to cacao-favourable zones. The capacity to produce, attested in colonial documents, is supported by agricultural and domestic spatial organization.

By 1600 CE, however, conditions shifted. By the end of the sixteenth century CE, exhausted cacao groves in the Izalcos often ended up as pasture for cattle, the expansion of which exacerbated problems for remaining orchards (Escalante 1992). For those orchards kept in operation, overcrowding, careless harvesting, and a lack of renovation of irrigation networks shortened the lives of many trees (MacLeod 2008, 95). In Spanish eyes, land was plentiful compared to labor and capital, so the impetus to maintain cacao quality or fertility through investment in human, material, and ecological infrastructure and development was low, while transitioning to new plantations on fresh soils was attractive, especially when the labor in these new settings was under direct Spanish control.

According to one Spanish authority, the Guayaquil, Ecuador Spaniards established entirely new cacao groves in thinned tropical forests for the specific purpose of seizing the Mexican (New Spain) market (MacLeod 2008, 244). Sizable cacao plantations in Venezuela and the Caribbean first began to appear in 1622 CE, and Venezuela began exporting cacao for culinary use to Europe in large quantities in the 1630s (241–2). The avalanche of Guayaquil cacao began in 1625 CE, at the same time Venezuelan cacao production entered the market and cultivation of the sun-loving crop (thus incompatible with cacao's agroforest) of indigo was increasing throughout the province of Guatemala. Adding to the competition was Costa Rica, which began exporting cacao in 1660 CE (Escalante 1992(2), 83 (Lohse 2010). In the 1680s supply from Guayaquil and Venezuela increased still further, with Matina valley plantations in Costa Rica expanding at the end of the century (Lohse 2010; MacLeod 2008, 244, 246). The cacao market was flooded with huge yields from South America, produced on new private plantations owned by Spaniards and worked by enslaved Africans and Afro-Latin Americans. The control of the cacao market shifted radically, observable archaeologically in the location and extent of cacao cultivation zones.

The broad, continental patterns in cacao agriculture are clear; the local, Izalcos region patterns are equally disrupted. The 1650–1750 CE settlements show a remarkable change in settlement location, with a decided shift to cities (Sonsonate, Izalco, Caluco, Nahulingo); the few rural contexts are either hacienda centers (El Bebedero, Los Lagartos) or rocky hilltops that were not occupied at other periods (Miramar, La Bolsita, and Survey Area 165) (Figure 6). The economic doldrums of this period include a near cessation of maritime trade and marked depopulation. Those factors are written in a landscape pattern of severe disruption of access to the best cultivation zones.

Liquid profits

The usurpation of cacao orchards in Soconusco, Mexico and direct Spanish oversight of high-volume cacao cultivation in new locales undoubtedly eased its culinary growth in Spanish kitchens and disrupted, but did not eliminate, indigenous financial and commercial systems. In the 1630s cacao was reaching Spain, Holland, and even England in fair quantities, and by the mid-seventeenth century it was the preferred drink of the upper classes and the club and teahouse society of all the capitals of western Europe (MacLeod 2008, 242; Norton 2007). Reaping wealth in cacao as a food commodity happened in markets largely out of the reach of indigenous hands and at the same time made indigenous stores of wealth in cacao money less predictable due to commodity market volatility. The fiscal system of the state no longer relied in a substantial way on cacao as a money, but rather as a profitable commodity. The problem of market volatility relates to Guyer's (1995, 5)

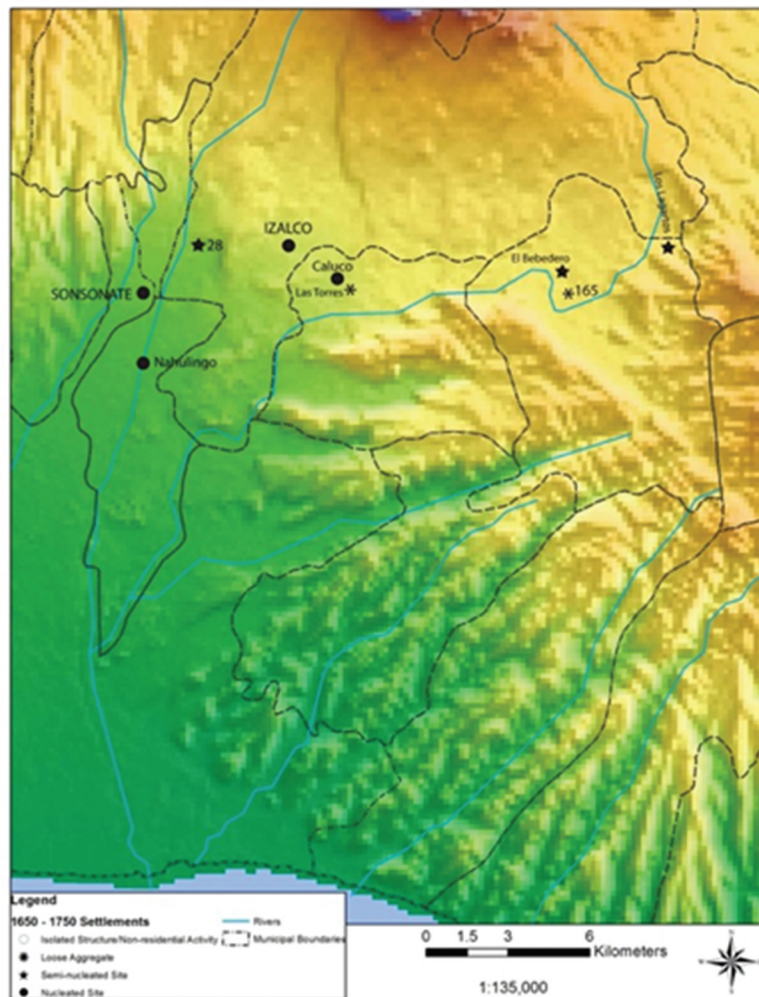


Figure 6. Settlement locations in the Rio Ceniza Valley from 1650 to 1750. Map by Sean Stretton, 2015.

observation that the predictability of taxes and the persistence in value of social payments both counteract the ‘fear of the arbitrary’ in money systems. Removing those guarantees sent cacao into a state of volatility that still plagues its commerce today.

A further material effect potentially links the loss of cacao money to remarkable debasement of silver coinage from Peru in the seventeenth century. Problems with the mandated purity of silver coins from Peru resulted in a global monetary panic and disruption of trade (Lane 2021). The lack of confidence was so severe that King Philip ordered coins to be devalued, and even those produced with the new design or marked for their debasement were viewed suspiciously. Perhaps the loss of cacao to its commodity value and uses placed even more strain on silver coin, and within especially the Pacific networks, fueled the debasement of coins in a vain effort to keep the currency systems propped up.

Shifts in buying power

The conventional quantity theory of money in economics tends to emphasize the problem of too much money as a source of inflation and thereby, devaluation of long-term, reserve wealth in real terms (Guyer 2012). In an economy focused on money as a medium of exchange, the real threat is too little money as a stress on the exchange function, exactly the crisis happening in the 1650–1750 CE phase of cacao demonetization. People often use money in private use in contexts of extensive domestic and foreign trade. The archaeological correlates include evidence of markets and market integration as an important form of household provisioning and cacao as a form of payment in commerce, with prices expressed in cacao.

Multiple sixteenth- and seventeenth-century accounts and legal complaints emphasize how the Izalcos communities depended on cacao purchasing power for the majority of household provisioning (Escalante Arce 1992, vol. 2, 13, 55; Fuentes y Guzmán [1699] 1932–1933, vol. 3, book 8, Chapter 4, 52; Pineda 1925, 330, 337). Archaeological evidence of such marketplace provisioning includes a large-scale and even distribution of goods among households regardless of social rank than is likely achievable through nonmarket provisioning (Garraty 2010; Hirth 1998, 455). Sixteenth- to seventeenth-century CE material culture of Spanish and indigenous households is archaeologically almost impossible to distinguish (Verhagen 1997). In extensive excavations of 48 households in the Izalcos region principal town of Caluco, Verhagen (1997, 442) found a significant correlation between the amount of tin-enameled maiolica and the amount of porcelain and that the majority of households had some. Verhagen (1997, 447) suggested that this distribution indicated that ‘wealth was distributed rather uniformly among the residents of Caluco’. The pattern in Caluco was valid across the entire valley, in a variety of rural and urban contexts, with Chinese porcelains and tin-enameled maiolica a regular and significant component of assemblages. While status might have been variably constructed across Spanish and Pipil households in Caluco and other contexts in the Izalcos, the even distribution of imported European, Asian, or European-style fine wares, olive jar, maiolica, and porcelains suggests a common ability to purchase and consume (Figure 7; Sampeck 2019).



Figure 7. A sample of sixteenth-century porcelain and maiolicas from the Rio Ceniza Valley. Photo by Kathryn Sampeck, 2008.

Household assemblages in the seventeenth to eighteenth century CE, as in earlier phases in the Rio Ceniza Valley, include coarse earthenwares and a more limited amount of tin-enameled maiolica, produced in Guatemala (Figure 8). One variety of maiolica, Maiolica variety B, has a date range of 1650–1750 CE, which is indicated because of its stylistic similarities with seventeenth- and eighteenth-century maiolicas and the variability of its paste (Figure 9; Sampeck 2015). This paste variability suggests multiple places of manufacture, all in Guatemala.

Figure 10 presents a comparison of frequencies over time at sites that had a 1650–1750 CE component of imported glazed ceramics. These contexts are then compared for the frequency of imported glazed ceramics of earlier and later phases, altogether: kraakporcelain (1580–1615 CE); Guatemalan maiolica Variety B (1650–1750 CE) and Variety C (1750 to 1820 CE). In these places with an 1650–1750 CE component, the contexts with the greatest abundance of porcelain and tin-enameled wares overall are the urban centers of Caluco and Nahulingo. Maiolica used from 1650–1750 CE in smaller, rural settlements occurred in very low frequencies and in places that in general had much higher rates of earlier and later glazed ceramics. What is also not part of the chart are the diverse contexts of earlier and later glazed ceramics. Kraakporcelain occurred in many locations throughout the survey region, yet that range of settings, which had rebounded into a cacao-friendly dispersed pattern, did not have 1650–1750 CE imported wares. The 1750–1820 CE rural locations shifted to an abundance of small groupings for laborer residences on haciendas; these places did not have an 1650–1750 CE component of imported glazed wares, though they had significant quantities of 1750–1820 CE maiolica and British refined white earthenwares. The dispersed centers of Guatemalan maiolica production in the seventeenth to eighteenth century CE may have presented a challenge for establishing regular supplies. Market access in 1650–1750 CE existed in the city and buying power was significantly reduced in rural settlements that were not the estate house of an hacienda.



Figure 8. A typical seventeenth- to eighteenth-century assemblage from the Rio Ceniza Valley. Photo by Kathryn Sampeck, 2008.



Figure 9. Examples of Guatemalan maiolica variety B from the Rio Ceniza Valley. Photo by Kathryn Sampeck, 2008.

Overall, this pattern of glazed ceramic use precisely at the time of cacao demonetization indicates disruption in places that were not major consumers of glazed ceramics before or after; in the late eighteenth to early nineteenth century CE, many more isolated contexts or small villas/clusters emerged that had ready access and increased/larger consumption of glazed wares.

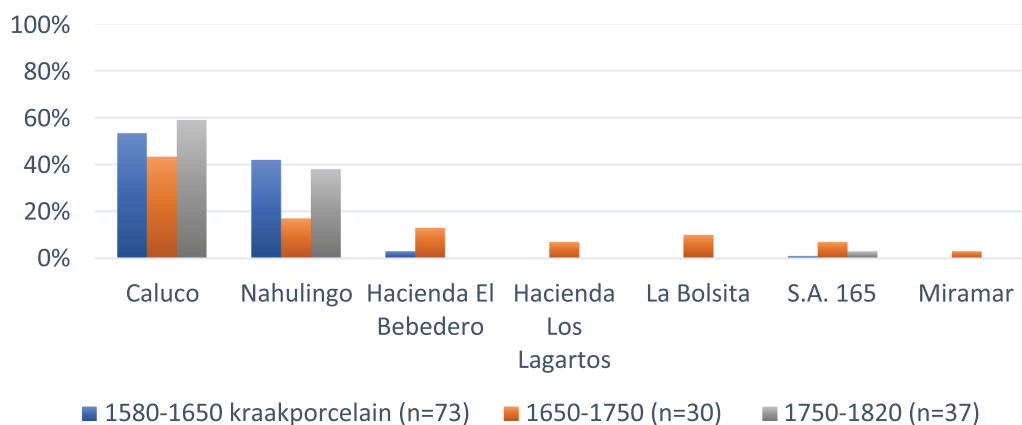


Figure 10. Change over time of percentage frequencies of glazed ceramics at Rio Ceniza Valley sites with a 1650–1750 component.

Discussion

Contrary to some popular beliefs, money has a great time depth in human societies, where it performed multiple functions depending on context and needs. This is because of the centrality of exchange in forming and maintaining relations among individuals, groups and communities. Whether transactions involve individuals, groups, and communities, the transformation of the substance of the material of a money token into a commodity exposes how money was constructed in that society through effects that are archaeologically observable in settlement and activity area location, configuration, and in household provisioning.

Marx's famous Money-Commodity-Money cycle addresses the fungibility of money, starting as a medium of exchange or a means for purchasing commodities, but transforming into commodity and back to money. In some societies such as those of Iron Age southern Africa, *marale* copper ingots and triangular iron hoes were commodity money, used to pay for other goods and services and they commanded specific values. In a parallel way, cacao money paid for goods and services, settled debt, and shaped accounting systems. Cacao payments could then be transformed into a sacred offering, an exquisite food or drink, or stored as wealth for future use. Indigenous cacao farmers of the Izalcos retained legal rights and control of land in the face of widespread dispossession in other settings. The flexibility of these indigenous moneys was strategic, tailored to circumstance, and fostered crucial social and political relationships. The power of *marale* and cacao money was their mutability in relation to differing economic, social, or political power. Multiple monies, under the control of individuals and groups, thus had a redistributing effect in society: money-commodities were not exclusive and could be exchanged for other types of money-commodities.

Demonetization of commodity monies then was an act of the colonial state imposing its power and ensuring that it had total control over economy and politics. Colonial powers, through demonetization, sought not just to reconfigure, but seize control of the globalized systems of Africa and Mesoamerica, to centralize revenue streams and redirect internal commerce to extractive export. To grasp this power, colonial powers in both Africa and Spanish America dispossessed indigenous producers of their access to critical resources for money production, shown archaeologically by settlement and resource accessibility shifts. As a result of settler colonialism and direct rule, not just in South Africa, but also Zimbabwe and Kenya, indigenous industries that produced currencies such as copper and iron production were banned.

The circle of money, and its ability to be flexible and attuned was maimed by demonetization. Taxes were levied in coinage issued by the state, forcing Africans to work in mines. Stores of cacao wealth in Izalco had unpredictable worth of commodity cacao on the global market, far from local frames of value – the global system liquidated their wealth in a cup of chocolate sipped at breakfast in Spain or France. Demonetization likewise impoverished Africans making them dependent on an economic system that they did not control. Africans could control the value of their monetized ingots, but under the colonial economy, the state determined the value of currencies. A single currency had many advantages in that it made taxation, wider economic, and political control easier. Therefore, demonetization was a strategy of disempowerment more than economic efficiency.

The economic friction of demonetization is evidenced in imperial powers' continued use of indigenous monies. Demonetization of southern African *marale* did not happen until the nineteenth century CE. In western El Salvador, cacao money endured well into the nineteenth century. Both persisted through the disruption of colonization and the birth of nation-states, a testament to their continuing local relevance and ability to subvert forces designed to disempower. A late nineteenth-century account from Mexico City attests to the persistence of

cacao money in high volumes and material culture configured to support continued money use: 'cacao ... was probably more extensively used as money and for larger transactions in commerce...it passed current as silver or copper at the present day ... until the present day it is the custom among some of the Indians, and even others, in the city of Mexico to sell firewood by zontles of four hundred pieces. ... three xiquipillis are equal to a carga or load, the which has twenty four thousand grains of cacao. To evade the trouble of counting so many when the merchandize was of considerable value, sacks of certain dimensions were used' (Bastow 1897, 51–52). Squier (in García de Palacio [1985]) likewise recounts that cacao money was used for small transactions in the Izalcos region well into the nineteenth century.

Demonetizing *marale* and cacao had a domino effect of disrupting other indigenous institutions. Cacao money could no longer function properly as a way of paying off state debt, pushing people to acquire and use for cash payments other monetized consumables such as indigo in the seventeenth century and, more than any other alternative, Spanish moneys produced and managed by Spain. The archaeological consequence of the ending of commodity monies is that in the case of southern Africa, indigenous copper and iron smelting was banned, as was hunting to obtain ivory. Without production, the commodity monies gradually became rarer and rarer, to the point of disappearing, only available as heirlooms. With sanctioned value detached from them, they became worthless. The scarcity of these objects and their gradual disappearance from the archaeological record is an indicator of demonetization, and the allied political and economic transformations. The two case studies reveal the same patterns of money as a harbinger of the expansion and change of markets to dispossess resilient, self-sufficient indigenous producers, by dismantling access to resources for producing money, funnelling access to state-controlled money through wage labor, and undermining value systems by making indigenous moneys either too scarce (*marale*) or too common (cacao) and obsolete.

Conclusion

Together these African and Mesoamerican case studies demonstrate: (1) the resilience and flexibility of monetary diversity, i.e. 'true liquidity' (Kuroda 2008, 27), with money circuits of varying lifespans, scales, and roles; (2) the nature of a money and the nature of the market are integral to each other, so changing markets involves unmaking the monies that created that market; and (3) demonetization radically shifts who holds power, consequences that archaeology reveals on the ground and in people's material lives. Archaeological evidence provides greater resolution to the connections between the processes of unmaking commodity monies and the forces of settler colonialism. In southern Africa and Central America archaeological evidence for settlement reorganization and changing patterns of activity signal the suppression of indigenous systems of social and political relationships. As long as alternative monies persisted, they can also be shown to have continued to offer power to their makers and users. The abundant and long-established examples of commodity monies in Africa and Mesoamerica tend to be overlooked or even misrecognized due to their relatively recent demonetization.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the British Academy; Council for International Exchange of Scholars; John Carter Brown Library, Brown University; National Research Foundation; National Science Foundation; Social Science Research Council; University of Oxford; Wenner-Gren Foundation.

ORCID

Kathryn Sampeck  <http://orcid.org/0000-0001-5839-8662>

Shadreck Chirikure  <http://orcid.org/0000-0002-2183-4253>

Data availability statement

The data used in this study have been previously published in cited works.

References

- Baron, J. P. 2018a. "Ancient Monetization: The Case of Classic Maya Textiles." *Journal of Anthropological Archaeology* 49:100–113. <https://doi.org/10.1016/j.jaa.2017.12.002>.
- Baron, J. P. 2018b. "Making Money in Mesoamerica: Currency Production and Procurement in the Classic Maya Financial System." *Economic Anthropology* 5 (2): 210–223. <https://doi.org/10.1002/sea2.12118>.
- Bastow, J. W. 1897. "Comercio, moneda, y cambio de los antiguos pueblos de México." In *Congreso internacional de americanistas, Actas de la undécima reunión. México–1895*, 47–64. México: Agencia Tipográfica de F. Díaz de León.
- Bisson, M. S. 1975. "Copper Currency in Central Africa: The Archaeological Evidence." *World Archaeology* 6 (3): 276–292. <https://doi.org/10.1080/00438243.1975.9979608>.
- Bloch, M., and J. Parry. 1989. "Introduction: Money and the Morality of Exchange." In *Money and the Morality of Exchange*, edited by J. Parry and M. Bloch, 1–32. Cambridge: Cambridge University Press.
- Chirikure, S. 2015. *Metals in Past Societies: A Global Perspective on Indigenous African Metallurgy*. New York: Springer.
- Chirikure, S. 2018. "Early Metallurgy and Surplus without States in Africa South of the Sahara." In *Überschuss ohne Staat-Politische Formen in der Vorgeschichte: 10. Mitteldeutscher Archäologentag vom 19. bis 21. Oktober 2017 in Halle (Saale)*, edited by H. Meller, D. Gronenborn, and R. Risch, 431–446. Halle (Saale): Landesmuseum für Vorgeschichte.
- Chirikure, S., F. Bandama, S. Hall, D. Killick, N. E. Mathoho, M. Nkhasi-Leosana, D. D. Rosenstein, and T. Thondhlana. 2023. "Dispersed Craft Production Systems at Rooiberg, C. 1200–1850, and Broader Implications for Southern African History." *Southern African Humanities* 36 (1): 163–180.
- Chirikure, S., and F. Bray. 2025. "Working with the Hard Stuff: Africa in Conversation with China." In *Cambridge History of Technology*, edited by D. Schaefer, F. Bray, T. Saraiva, M. Valleriani, and S. Chirikure. Vol. 1. Cambridge: Cambridge University Press.
- Chirikure, S., D. J. Killick, and J. Stephens. 2024. "Global Commodities in Precolonial Southern Africa: Local Concepts and Global Conversations." *World Archaeology*. 1–15. <https://doi.org/10.1080/00438243.2024.2425286>.
- Colin, H., and S. Krmnicek. 2012. "The Archaeology of Money." *Annual Reviews in Anthropology* 41 (1): 235–250. <https://doi.org/10.1146/annurev-anthro-092611-145716>.
- Colombo, F. 1563. *Historie del S.D. Fernando Colombo: Nelle quali s' ha particolare, & vera relatione della vita, & de' fatti dell'Ammiraglio D. Christoforo Colombo, suo padre: et dello scoprimento, ch'egli fece dell'Indie Occidentali, dette mondo nvo, Hora possedute dal Sereniss. Venice, Italy: Appresso Francesco de' Francheschi Sanese.*
- Dalton, G. 1965. "Primitive Money." *American Anthropologist* 67 (1): 44–65. <https://doi.org/10.1525/aa.1965.67.1.02a00040>.
- Dalton, G. 1982. "Barter." *Journal of Economic Issues* 16 (1): 181–190. <https://doi.org/10.1080/00213624.1982.11503968>.

- Dalton, G. 1990. "Writings That Clarify Theoretical Disputes Over Karl Polanyi's Work." *Journal of Economic Issues* 24 (1): 249–261. <https://doi.org/10.1080/00213624.1990.11505011>.
- de Fuentes y Guzmán, F. A. [1699] 1932–1933. *Recordación florida*. Guatemala City: Sociedad de Geografía e Historia de Guatemala.
- Desan, C. 2010. "Coin Reconsidered: The Political Alchemy of Commodity Money." *Theoretical Inquiries in Law* 11 (1): 361–409. <https://doi.org/10.2202/1565-3404.1245>.
- Dhavalikar, M. K. 1975. "The Beginning of Coinage in India." *World Archaeology* 6 (3): 330–338. <https://doi.org/10.1080/00438243.1975.9979613>.
- Einzig, P. 1948. *Primitive Money in Its Ethnological, Historical and Economic Aspects*. London: Eyre & Spottiswoode.
- Escalante Arce, P. A. 1992. *Códice Sonsonate: Crónicas hispánicas*. Vol. 2. San Salvador: CONCULTURA, Dirección de Publicaciones e Impresos.
- Fitzpatrick, S. M., and S. McKeon. 2020. "Banking on Stone Money: Ancient Antecedents to Bitcoin." *Economic Anthropology* 7 (1): 7–21. <https://doi.org/10.1002/sea2.12154>.
- Frey, B. S., W. W. Pommerehne, and F. Schneider 1983. "Are We All Monetarists Now? An Empirical Inquiry." *Journal of Post Keynesian Economics* 6 (1): 89–96.
- García de Palacio, D. 1985. *Letter to the King of Spain: being a description of the ancient provinces of Guazacapan, Izalco, Cuscatlan, and Chiquimula, in the Audiencia of Guatemala, with an account of the languages, customs, and religion of their aboriginal inhabitants, and a description of the ruins of Copan*. Translated by E. G. Squier, with additional notes by A. von Franzius, edited by F. E. Comparato. Culver City, CA: Labyrinthos Press.
- Garraty, C. P. 2010. "Investigating Market Exchange in Ancient Societies: A Theoretical Review." In *Archaeological Approaches to Market Exchange in Ancient Societies*, edited by B. L. Stark and C. P. Garraty, 3–32. Boulder, CO: University Press of Colorado.
- Ghosh, J., C. P. Chandrasekhar, and P. Patnaik. 2017. *Demonetisation Decoded: A Critique of India's Currency Experiment*. New York: Routledge.
- Graeber, D. 2011. *Debt: The First 5,000 Years*. Brooklyn, NY: Melville House.
- Guyer, J. I., ed. 1995. *Money Matters: Instability, Value and Social Payments in the Modern History of West African Communities*. Portsmouth, NH: Heinemann.
- Guyer, J. I. 2004. *Marginal Gains: Monetary Transactions in Atlantic Africa*. Chicago: University of Chicago Press.
- Guyer, J. I. 2012. "Soft Currencies, Cash Economies, New Monies: Past and Present." *PNAS* 109 (7): 2214–2221. <https://doi.org/10.1073/pnas.1118397109>.
- Guyer, J. I., and K. Pallaver. 2018. "Money and Currency in African History." In *African History*, Oxford Research Encyclopedias. <https://doi.org/10.1093/acrefore/9780190277734.013.144>.
- Hart, K. 1986. "Heads or Tails? Two Sides of the Coin." *Man* 21 (4): 637–656.
- Haskett, R. S. 1991. "'Our Suffering with the Taxco Tribute': Involuntary Mine Labor and Indigenous Society in Central New Spain." *The Hispanic American Historical Review* 71 (3): 447–475.
- Hauptmann, A. 2007. *The Archaeometallurgy of Copper: Evidence from Faynan, Jordan*. New York: Springer.
- Herbert, E. W. 1984. *Red Gold of Africa: Copper in Precolonial History and Culture*. Madison: University of Wisconsin Press.
- Hirth, K. G. 1998. "The Distributional Approach: A New Way to Identify Marketplace Exchange in the Archaeological Record." *Current Anthropology* 39 (4): 451–476. <https://doi.org/10.1086/204759>.
- Houlbrook, C. 2015. "Small Change: Economics and Coin-Trees in Britain and Ireland." *Post-Medieval Archaeology* 49 (1): 114–130. <https://doi.org/10.1179/0079423615Z.00000000074>.
- Innes, A. M. 2004. "What is Money?" In *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, edited by L. Randall Wray, 14–48. Cheltenham, UK: Edward Elgar Publishing.
- Klapwijk, M. 1986. "A Late Iron Age Furnace Excavation on the Farm Longridge, Agatha, North-Eastern Transvaal, South Africa." *South African Archaeological Bulletin* 41 (143): 22–26. <https://doi.org/10.2307/3887714>.
- Kuroda, Akinobu. 2008. "Concurrent but Non-Integrable Currency Circuits: Complementary Relationships Among Monies in Modern China and Other Regions." *Financial History Review* 15 (1): 17–36. <https://doi.org/10.1017/S0968565008000036>.
- Lane, K. 2021. *Potosi: The Silver City That Changed the World*. Oakland, CA: University of California Press.

- Lohse, R. 2010. "Cacao and Slavery in Matina, Costa Rica, 1650–1750." In *Blacks and Blackness in Central America: Between Race and Place*, edited by L. Gudmundson and J. Wolfe, 57–91. New York: Duke University Press. <https://doi.org/10.1515/9780822393139-004>.
- MacLeod, M. 2008. *Spanish Central America: A Socioeconomic History, 1520–1720*. Austin: University of Texas Press.
- Mamadi, M. F. 1940. "The Copper Miners of Musina." *The Copper Miners of Musina and the Early History of the Zoutpansberg, Union of South Africa Department of Native Affairs Ethnological Publications* 8:81–86.
- Marx, K. (1863–1867) 1921. *Capital: A Critique of Political Economy, Volume I. The Process of Capitalist Production*. Revised and Amplified According to the 4th German Edition by Ernest Untermann, Samuel Moore, and Edward Aveling, Translators, edited by Frederick Engels. Chicago: Charles H. Kerr and Co.
- Maurer, B. 2018. "The Gift of Money: Dematerialization, Demonetization, and Money's Pedigree." *Revue Du MAUSS* n° 52 (2): 161–174. <https://doi.org/10.3917/rdm.052.0161>.
- Miller, D., D. Killick, and N. J. van der Merwe. 2001. "Metal Working in the Northern Lowveld, South Africa A.D. 1000–1890." *Journal of Field Archaeology* 28 (3/4): 401–417. <https://doi.org/10.1179/jfa.2001.28.3-4.401>.
- Moffett, A. J. 2017. 'Phalaborwa Where the Hammer is heard': *Crafting Together the Political Economy of Iron Age Communities in Southern Africa, AD 900–1900*. Unpublished PhD thesis, University of Cape Town.
- More, C. E. 1974. "Some Observations on 'Ancient' Mining at Phalaborwa." *Journal of the South African Institute of Mining and Metallurgy* 74 (6): 227–232.
- Norton, M. 2007. *Sacred Gifts, Profane Pleasures: A History of Chocolate and Tobacco in the Atlantic World*. Ithaca: Cornell University Press.
- Ottaway, B., and C. Strahm. 1975. "Swiss Neolithic Copper Beads: Currency, Ornament or Prestige Items?" *World Archaeology* 6 (3): 307–321. <https://doi.org/10.1080/00438243.1975.9979611>.
- Palabora Mining Company Limited Mine Geological and Mineralogical Staff. 1976. "The Geology and Economic Deposits of Copper, Iron and Vermiculite in the Palabora Igneous Complex: A Brief Review." *Economic Geology* 71 (1): 177–192. <https://doi.org/10.2113/gsecongeo.71.1.177>.
- Pineda, J. de. 1925. "Descripción de la provincia de Guatemala." *Anales de la Sociedad de Geografía e Historia* 1 (4): 333–334.
- Pistorius, J. C. C. 1989. *Die metaalbewerders van Phalaborwa*. Unpublished Ph.D. thesis, University of Pretoria.
- Polanyi, K. 1957. "The Economy as Instituted Process." In *Trade and Market in the Early Empires: Economies in History and Theory*, edited by K. Polanyi, C. M. Arensberg, and H. W. Pearson, 243–270. Glencoe, IL: The Free Press.
- Polanyi, K. [1944] 2001. *The Great Transformation: The Political and Economic Origins of Our Time*. 2nd Beacon Paperback ed. Boston: Beacon Press.
- Quiggin, A. H. 1949. *A Survey of Primitive Money: The Beginnings of Currency*. London: Routledge.
- Reynolds, B. 2006. "Ethnographic Currency: Exotic and Unconventional Forms of Money." *Journal of the Numismatic Society of Australia* 17:31–41.
- Rosenswig, R. M. 2024a. "Money, Currency, and Heterodox Macroeconomics for Archaeology." *Current Anthropology* 65 (2): 235–266. <https://doi.org/10.1086/729096>.
- Rosenswig, R. M. 2024b. "Understanding Money; Or, Why Social and Financial Accounting Should Not Be Conflated." *Economic Anthropology* 11 (1): 71–86. <https://doi.org/10.1002/sea2.12304>.
- Sampeck, K. 2015. "Chronology and Use of Guatemalan Maiolica: Ceramics as Reducción in the Izalcos Region of El Salvador." *Historical Archaeology* 48 (2): 18–49. <https://doi.org/10.1007/BF03377138>.
- Sampeck, K. 2019. "Cacao and Violence: Consequences of Money in Colonial Guatemala." *Historical Archaeology* 53 (3/4): 535–558. <https://doi.org/10.1007/s41636-019-00206-7>.
- Sampeck, K. 2021. "A Constitutional Approach to Cacao Money." *Journal of Anthropological Archaeology* 61:101257. <https://doi.org/10.1016/j.jaa.2020.101257>.
- Schrauwers, A. 2020. "Banknotes, Bookkeeping Barter, and Cloth Money: Conversions of "Special-Purpose Money" in the Cloth and Dammar Trade of Sulawesi, Indonesia, 1860–1905." *Economic Anthropology* 9 (1): 8–21. <https://doi.org/10.1002/sea2.12183>.
- Shakespeare, W. (2015) n.d. *The Merry Wives of Windsor* from the Folger Shakespeare, In edited by Barbara Mowat. Paul Werstine. Folger Shakespeare Library. Accessed January 2, 2025. <https://www.folger.edu/explore/shakespeares-works/the-merry-wives-of-windsor/>.
- Smith, A. [1776] 1970. *An Inquiry into the Nature and Causes of the Wealth of Nations*. London, UK: Everyman's Library.

- Smith, M. E. 2004. "The Archaeology of Ancient State Economies." *Annual Review of Anthropology* 33:73–102.
- Snell, D. C. 1995. "Methods of Exchange and Coinage in Ancient Western Asia." In *Civilizations of the Ancient Near East*, edited by J. M. Sasson, J. Baines, G. Beckman, and K. S. Robinson, 1487–1497. New York, NY: Scribners.
- Stewart, B. A., Y. Zhao, P. J. Mitchell, G. Dewar, J. D. Gleason, and J. D. Blum. 2020. "Ostrich Eggshell Bead Strontium Isotopes Reveal Persistent Macroscale Social Networking Across Late Quaternary Southern Africa." *Proceedings of the National Academy of Sciences* 117 (12): 6453–6462. <https://doi.org/10.1073/pnas.1921037117>.
- Thondhlana, T. P. 2013. *Metalworkers and Smelting Precincts: Technological Reconstructions of Second Millennium Copper Production Around Phalaborwa, Northern Lowveld of South Africa*. Doctoral diss., UCL (University College London).
- Thurberg, M. 1988. "Regional Economic Structures: An Analysis of the Viking Age Silver Hoards from Öland, Sweden." *World Archaeology* 20 (2): 302–324. <https://doi.org/10.1080/00438243.1988.9980074>.
- Truitt, Allison. 2018. "Nationalizing Gold: The Vietnamese SJC Gold Bar and the Indian Gold Coin." *Economic Anthropology* 5 (2): 224–234. <https://doi.org/10.1002/sea2.12119>.
- van der Merwe, N. J., and D. Killick. 1979. "Square: An Iron Smelting Site Near Phalaborwa." *Goodwin Series* 3 (3): 86–193. <https://doi.org/10.2307/3858116>.
- van der Merwe, N. J., and R. T. K. Scully. 1971. "The Phalaborwa Story: Archaeological and Ethnographic Investigation of a South African Iron Age Group." *World Archaeology* 3 (2): 178–196. <https://doi.org/10.1080/00438243.1969.9979500>.
- Veblen, T. 1904. *The Theory of Business Enterprise*. Clifton, NJ: Kelley.
- Verhagen, I. L. 1997. *Caluco, El Salvador: The Archaeology of a Colonial Indian Town In Comparative Perspective*. Doctoral dissertation, Nashville, TN: Department of Anthropology, Vanderbilt University.
- von Mises, L. 1953. *The Theory of Money and Credit*. New York: Skyhorse Publishing.