



“Techno-market fix”? Decoding wealth through mobile money in the global South



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ABSTRACT

The use of mobile phones for financial services in the global South has gained prominence in the last decade. These financial technology (FinTech) services, popularly known as mobile money (MM), offer an avenue for financial inclusivity, a recurring theme in the United Nations Sustainable Development Goals. This paper, largely conceptual but interlaced with empirical examples from Ghana and Bangladesh, critically examines the rise of mobile money in the global South. Specifically, it employs David Harvey’s adaptation and redeployment of the laws of accumulation to relate the economic phenomenon of MM to the capitalistic relationship between capital and labor. We argue, among other points, that MM emerges as a techno-market fix to make visible, bankable, and taxable the hitherto invisible, unbanked, and untaxed urban sub-proletariat who are mostly engaged in the informal sector. Thus, whether in sub-Saharan Africa or South Asia, the underlying laws of accumulation through MM are the same: make informality visible in order to decode wealth, and accumulate for the sake of accumulation. We conclude by briefly reflecting on how our arguments contribute to the literature on economic, digital, and development geographies of postcolonial economies in the global South.

1. Introduction

Mobile phone technology currently plays a significant role in financial transactions in global South economies. These techno-financial transactions, referred to variously as mobile money (MM), m-banking, or mobile transfers, are increasingly including these economies in the global financial capital system. Supporting and advancing technology-aided tools to improve access to financial services is a recurring theme in United Nations Sustainable Development Goals 5, 8, and 17. Little critical work exists on the growth of financial technology in low-income countries, as most studies focus on efficiency, developmental economics, and financial stability. This paper fills the gap by relating this financial technology (FinTech)-powered economic phenomenon to the capitalistic relationship between capital and labor. Specifically, the paper focuses on discourses of techno-financial inclusion, often framed in global policy dialogues as *financial inclusion*. Seeking to deconstruct techno-financial, inclusive instruments deployed through the MM apparatus, the paper wrestles with broader questions such as, who or what is financially included? How are they included? And does MM exemplify capital’s coding of surplus value in so-called peripheral countries by transforming and integrating them into the hyper-financialized, capitalist world system?

The literature has variously discussed the capitalist relationship between labor and capital in the global South. Due to the large informal

sector within these so-called ‘developing’ economies, scholars have widely debated how this sector has or will be included in the global capitalist order. In his seminal piece *Planet of Slums*, Davis (2006) summarizes critical aspects of this debate, which we briefly describe here. Some scholars (e.g. Castells and Portes, 1989) argue that there is false optimism among the Todaro-Modernists, who, given the growth of the informal sector, view this sector as the “deus ex machina” propelling global South countries into the modern capitalist economy (Davis, 2006, 179). This optimism, critics argue, reflects the fallacies within de Soto’s (2000) ideas of empowering the proto-capitalist, informal sector through formal property rights, microfinance opportunities, and de/unregulated competitive space. These fallacies, Davis (2006, 181) opines, manifest through issues such as “the invisible network of exploitations,” which dissolve social capital and self-help networks while magnifying inequality and extreme abuse, especially of women and children within the informal sector (cf. Joseph, 2001, Chant, 2004, Breman and Agarwal, 2002). Other scholars (e.g. Breman, 2003, Davis, 2006) argue against writing off the innate potential of the informal economy because under certain conditions (e.g., effective organization, labor rights), the informal sector could, indeed, become the deus ex machina of countries in the global South.

Dolan and Roll (2013) offer an alternative lens to view how the global capitalist system includes the informal sector in these global South economies. Like Davis (2006), they recognize the latent potential

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of the informal economy in these countries. However, their descriptive analysis differs from the prescriptive analyses of [Davis \(2006\)](#) and [Bremen \(2003\)](#) because regardless of the apparent disorganization of the informal sector, it is still being mobilized and integrated into the global capitalist mode of production. Grounded largely within Michelle Foucault's work ([Foucault 1995](#)), the analysis of [Dolan and Roll \(2013, 125\)](#) uses the bottom-of-the-pyramid (BoP) approach to emphasize that a series of “market technologies, practices, and discourses” are increasingly deployed to render the informal sector “knowable, calculable, and predictable to global business.” In other words, Dolan and Roll's “seeing-like-capital” analysis invites further scrutiny of the market technologies and processes through which transnational capital decodes the informal sector of its intrinsic value and recodes it with a quantitative, monetary value for private accumulation (cf. [Holland, 2013](#)).

This primarily conceptual paper situates the FinTech economic phenomenon within a discourse examining how global capitalist processes accumulate wealth from the informal sector in the global South. Specifically, we investigate MM as an emerging instance of financialization within these global South economies, which involves financially including previously unknown, unbanked, untaxed labor and informal economic activities into the hyper-financialized capitalist system. To understand the manifold dimensions, system-wide process, and distinct features of financialization in the global South, we must contextualize it within the three circuits of capital, which are based on [Harvey's \(1978\)](#) adaptation and redevelopment of Marx's laws of accumulation. The circuits of capital offer a lens for understanding MM as just one of the many techno-market fixes deployed by capital to deal with accumulation crises in global South economies (see also discussions on financial circuits and ‘real economy’ in [Hall, 2012b](#)). In this perspective, MM sits within a global “neo-liberal financialization” ([Palley, 2013, 8](#)) agenda whereby distinct financialization processes evolve within different places to financially include and decode wealth.¹ This conceptualization of financialization in the global South helps us to realize what [Hall \(2018\)](#) describes as including diverse theory and empirics that move beyond the global North in our understanding of the global geofinance landscape.

The paper comprises six sections, including introductory and concluding sections. We define and highlight the different manifestations or dimensions of financialization in the next (second) section of the paper. We describe how, although in its infancy and with unique, contextual manifestations, financialization in the global South epitomizes the evolutionary and disjointed transformation process of capital (see [Elliott, 1980](#)), which is using FinTech or MM to rework the (informal) labor-capital relationship. Thus, MM as a digital interface is shaping the relationship between technology and the embodied financial practices of informal labor, which allows FinTech digital interfaces to produce and be produced through multiple geographies in the global South (see [Ash et al., 2018a](#), [Ash, Kitchin and Leszczynski, 2018c](#)). The third section offers a theoretical intervention based on the circuits of capital. We unpack why MM allows us to conceptualize financialization within the three circuits of capital, which work to reconfigure the capitalistic relationship between capital and informal labor in the global South.

To ground our theoretical intervention in empirical terms, the fourth section draws examples from Africa (Ghana) and South Asia (Bangladesh), where the authors have researched extensively. Our emphasis here is not to conduct a comparative study; rather, we

explicate the operations of FinTech in the two countries despite their different ethno-racial and political-economic landscapes, and provide rich background and empirical moments to illustrate the theoretical discussions in earlier sections of the paper. The fifth section outlines how the two cases, interlaced with examples from other global South countries, distill key insights into how MM fosters an emerging financialization process in the global South. Specifically, we discuss how wealth is decoded for capital switching by making these global South economies (especially their large, informal sector populations) visible and calculable to the state for tax revenue and to financial and telecommunication corporations. Focusing on Ghana and Bangladesh, we attempt to demonstrate that whether in sub-Saharan Africa or South Asia, the underlying laws of accumulation through MM are the same: make informal labor visible, decode wealth, and accumulate for the sake of accumulation.²

2. Financialization, financial technology (Fintech), and inclusion in the global South

According to [Hall \(2012b\)](#), two related political economy approaches in economic geography are deployed to theorize the relationship between financial circuits and the “real economy”: everyday lived economic practices. The first approach unpacks the (re)production and circulation of money through capitalistic relationship between money and social relations (see [Harvey, 1990](#), [Harvey, 1999](#), [Christophers, 2011b](#), [Christophers, 2011a](#)). The second approach, which focuses on financialization ([Hall, 2012a](#), [Hall, 2012b](#)), builds on the first approach by examining the intersection between financial circuits and (re)production of financial subjectivities (see [Langley, 2006](#); [Langley, 2008](#)), or technological innovations and new forms of financial products (see [Leyshon and Pollard, 2000](#); [Marron, 2007](#); [Hall and Appleyard, 2009](#)). This paper is positioned within the two related political economy approaches by examining how financial circuits is co-constitutive of specific forms of (1) lived economic practices (i.e., unbanked and informal economic activities) and (2) technological innovations (i.e., digital finance) in the global South. More importantly, with digital devices (e.g., smartphone, computers) now becoming both object and subject of geographical enquiry ([Ash et al., 2018a](#)), this paper extends geographical knowledge beyond the global North by examining the implications of a specific form of digital finance (i.e., mobile money) on postcolonial economies ([Pollard et al., 2009](#)) and financialization of development ([Mawdsley, 2018](#)).

Financialization means different things to different people. In discussing its history and multiple definitions, [Krippner \(2005\)](#) asserts that some scholars consider financialization as an augmented form of interstate competition ([Arrighi, 1994](#)), extreme wealth polarization ([Phillips, 2002](#)), the growing influence of financial considerations in corporate governance ([Fligstein, 2001](#), [Zorn, 2004](#)), or the rise of financial trade and new financial instruments ([Henwood, 1997](#), [Tickell, 1999](#)). [Krippner \(2005, 174\)](#) also defines financialization as “a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production ... [and the key term] ‘Financial’ here refers to activities relating to the provision (or transfer) of liquid capital in expectation of future interest, dividends, or capital gains.” [Epstein \(2015, 5\)](#) broadens the definition by focusing on the processual nature of financialization to involve “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (see also [Epstein, 2005](#)).

¹ Our use of Harvey's circuits of capital does not posit that predictable laws of financialization manifest similarly everywhere. One must also pay attention to international financial institutions, like the World Bank and the United Nations, which can format the economy in low-income countries through hegemonic developmental discourses that allow aid money to flow to such countries and contribute to investments in secondary and tertiary circuits.

² In explicating economic growth and accumulation under the capitalist mode of production, [Harvey \(1975\)](#) draws on the phrase “accumulation for accumulation sake,” which was used by Marx to discuss the “tendency to produce without regard to the limits of the market” (*Theories-of Surplus Value*, 2, p. 522).

Scholars in the global North have considered the multiple manifestations or dimensions of financialization within these economies. For instance, some have explored the increasing size of the financial sector and profits relative to the economies of the U.S. and other European countries (Epstein and Montecino, 2015, Lapavistas, 2013b). Others have also considered the increasing role of financial lending as profit-maximizing activities for both financial and non-financial corporations (de Souza and Epstein, 2014). Furthermore, financialization in global North economies has been characterized by rising debt levels within and across sectors through the credit system and expanded wealth extraction by private equity and hedge fund firms (Minsky, 2008). Finally, and essential to this paper, financialization is perceived as the rise of financial innovations (e.g., asset backed securities, credit default swaps) that contribute to increasing financial activities and accumulation within countries and at the global scale (Vercelli, 2013, Greenberger, 2013).

Krippner (2005, 175) poses a question that is easier to answer regarding global North economies, compared to global South economies: “What constitutes the relevant evidence for financialization...” This question seems difficult to unpack, especially for global South countries, if one considers the multiple manifestations of financialization. For instance, apart from the above-discussed manifestations (e.g., increased size of private sector, rise in financial lending and debt levels), Fine, 2013b provides other manifestations such as, “consumer-led booms based on credit”; rising inequality driven primarily by financial rewards; the dominance of the U.S. dollar as global currency; and “the emergence of a neoliberal culture of reliance upon markets and private capital and corresponding anti-statism despite the extent to which the rewards to private finance have in part derived from state finance itself.” We, therefore, argue that the manifold expressions of financialization do not imply a single piece of evidence but require examining the multiple ways in which different contexts are transformed and integrated into the global capitalist system. In the context of global South economies especially, financialization depends on inherited local and Western-imposed political-economic conditions (e.g., structural adjustment policies) that, we argue, change the nature, form, and process of financialization in these countries. This is true even though the overall purpose of financialization is the same everywhere: accumulation.

We focus on the rise of FinTech activities, specifically MM, to view the unfolding process of financialization and its political-economic transformative effects within global South economies. Terms such as mobile money, m-banking, m-transfers, and m-payments capture the use of mobile phones to transfer funds and/or pay for goods and services. We use the term mobile money to indicate the ability to transfer money and/or pay for goods and services without necessarily having a bank account from which the money is transferred and/or without necessarily creating a mobile payment account. This specific use of MM is important in at least two ways. As Donner and Tellez (2008) observe, the terms m-banking, m-transfers, m-payments, and m-finance were linked to banking practices introduced in the global North to allow customers to link their mobile phones to their traditional bank accounts and/or other forms of financial accounts for different financial transactions. In the global South, the people who use MM do not have and often would never want traditional bank or other financial accounts (i.e., the unbanked) for reasons such as not trusting banks, easy access, and convenience (e.g. Dowla, 2006, Benamati and Serva, 2007). The decision to use MM to transfer money through an MM agent without opening a financial mobile account is referred to as over-the-counter (OTC) use, which is generally high in countries such as Bangladesh, Ghana, Pakistan, and Paraguay (Islam, 2014). Related to this is the important distinction that the whole point of m-banking is to ensure that customers (senders and users) in the global North avoid handling cash in m-banking or m-payment transactions. However, since most MM users are excluded from traditional banks and other financial services, MM in the global South is primarily about cash transfer and

payments through a liquidity agent who ensures that cash from point A gets delivered as cash to point B. That said, the delivery of MM differs in the global South; methods include telecommunication providers only, banks only, mobile financial operators, nonprofit organizations, or a mix, such as telecommunication providers and banks or banks and nonprofits (Donner and Tellez, 2008, Porteous, 2006).

Our focus on FinTech corporations and their deployment of MM helps us to conceptualize the multiple manifestations of financialization in the global South in several ways. As noted, scholars have discussed financialization in global North economies by examining issues such as the increase in financial innovations, financial lending by financial and nonfinancial corporations, and the state’s creation of a conducive neoliberal climate to support private financial activities. The rise of FinTech in the global South manifests many of these characteristics in ways unique to the political-economic histories and current modes of production within these economies. As we discuss below, FinTech and MM, specifically, represent financial innovations involving financial and nonfinancial corporations (e.g., telecommunication companies) that are maximizing profits from emerging, hyper-financialized economies in these global South countries. Although financialization is still in its infancy in these global South economies, its possibilities cannot be discounted by solely looking at the so-called developing nature of these economies. After all, the “Mystery of Capital,” to borrow from de Soto (2000), lies in its “evolutionary process” (Schumpeter, 1950, 82), which occurs “discontinuously” by bringing “qualitative changes or ‘revolutions,’ which fundamentally displace old equilibria [i.e. low-financialized economies] and create radically new conditions [hyper-financialized economies]” (Elliott, 1980, 46).

We argue that to see the evolutionary process of financialization in the global South, one must discern MM and the entire FinTech apparatus, as MM is a techno-market fix or response to a longstanding challenge in the global South: capital’s desire to find ways to include unbanked labor and informal economic activities into the global capitalist system. This desire manifests prominently in the global discourse about financial inclusion. Hart (1973) first discussed the informal economy as an economic phenomenon, to describe the mass unemployment he observed in Accra, Ghana, primarily due to increased migration into urban areas and decreased economic opportunities in these areas (e.g., retrenchment of government workers). Informality was seen as an alternative livelihood activity in which both migrants and indigenes engaged in urban areas. This was possible through strategic neoliberal policies that involved the rollout and rollback of the state to support market forces (Hart, 1973, Hart, 1990, Hart, 2006). The informal economy lives in the shadow of the state and is characterized by economic activities that are mostly unregistered, sales that are undeclared for taxation purposes, labor intensivity, and engagement of less-educated, low-skilled workers (cf. Centeno and Portes, Hart, 1990). The shadow economic activities of this large population of informal workers makes them mostly unknowable and incalculable to formal financial and government institutions. Prior to this new phase of financialization, their activities were not attractive to financial institutions partly because their assets were not titled, which made it difficult if not impossible for formal banking loans to be collateralized by assets in the informal economy (Portes and Haller, 2010). As a result of the informal economy, workers were unbanked.

Several studies have shown that informal workers and other unbanked groups involve those who are less likely to use formal financial institutions, based on characteristics such as age, income, ethnicity, education, immigration status, and employment status (Bond and Townsend, 1996, Doyle, Lopez and Saldenberg, 1998, Caskey, 2005, Washington, 2006). In countries with less-developed formal, financial institutions, immigrants’ inherited attitudes and perceptions of banks (i.e., do not trust or do not like dealing with banks), transaction costs for using banking services, and limited access to banks explain why some immigrants are unbanked (Lyons and Scherpf, 2004, Stanley and Bhattacharya, 2008, Toussaint-Comeau and Rhine, 2000). While many

of these studies document the characteristics of the unbanked population in the global North, some studies have shown that the making of the unbanked population in the global North, constituting 95% of the global unbanked population, relates to the informal economy (Singh, 2013, Doron and Jeffrey, 2013, Hannig and Jansen, 2010). Most of these informal workers are poor, do not have regular or high income, lack financial knowledge and related capability, feel intimidated by formal systems and their infrastructures, and generally do not trust formal financial institutions (cf. Gerxhani, 2004, Freund and Spatafora, 2005, Dowla, 2006, Portes and Haller, 2010, De Mel, McKenzie and Woodruff, 2013).

Well-established Marxian and Foucauldian literature on financialization has examined the financial inclusion of labor in terms of different neoliberal policies and technologies and the resulting techno-financial subjects created. For instance, Lapavistas (2009, p. 143) argues that financial expropriation (i.e., extraction of financial profits from the income of laborers) combined with investment banking has led to a major financial crisis and created a new “rentier layer” whereby rent-like income is extracted through an individual’s “position relative to the financial system as well as from ownership of loanable capital.” This new rentier layer illustrates how individuals are “profiting without producing” (Lapavistas, 2013a), or what Fine (2013a) views as fictitious accumulation that does not emerge from productive value relations (see also Bryan and Rafferty, 2006). Gabor and Brooks (2017) also study the emerging ecosystem of digital-based financial inclusion in the global South as comprising a network of neoliberal policies and actors such as the World Bank, charitable organizations, and state actors that make it possible to profile and generate financial assets from poor households (see also Soederberg, 2013). Maurer (2012) explores MM users’ behavior in low-income countries, observing that these knowable and calculable subjects are not purely passive subjects and often exert agency to subvert the value-creation mechanisms of MM by repurposing MM technologies.

We contribute to the literature on financialization, especially in the context of global South economies, by attempting to synthesize the manifold dimensions of financialization through MM. That is, we explore the underlying process through which the financial inclusion of labor, financial innovations, profit maximization, and the alliance between financial and nonfinancial corporations helps to integrate global South economies into the global capitalist system. To do so, we employ Harvey’s adaptation and redeployment of the laws of capital accumulation to offer a system-wide understanding of capitalist crises and the multiple techno-market instruments employed to repair these crises. In other words, we view financialization and its manifold manifestations as part of a system-wide capitalist process involving the (re)deployment of multiple techno-market fixes (e.g., MM) to address the inherent crises within both local and global capitalist ecosystems. This system-wide and process view brings us closer to Lapavistas’s (2013b, 798) definition of financialization: “rapid growth of **circulation** compared to production, but this asymmetry is the outcome of ‘financialized’ interactions among the fundamental agents of the capitalist economy [emphasis ours].”

3. Conceptualizing financialization through MM in the global South: Circuits of capital and mobile money³

Harvey (1978) adapts and redeploys Marx’s laws of accumulation to

³ Some might argue that Harvey’s circuits of capital apply only to advanced economies. We see this argument as imposing a rather narrow view of Harvey’s conceptualization, as such argument inadvertently misses the process-, systems-, and nested-based approach of viewing both local and global accumulation process, which manifest within and across both advanced and developing economies (e.g. see Arefin’s, 2018, recent use of Harvey’s conceptualization in Bangladesh). While we agree that other theoretical lenses could offer similar or

involve three circuits of production: primary, secondary, and tertiary circuits. There are inherent crises within these circuits, which are addressed (or fixed) through capital’s ability to switch from one circuit to another. The circuits operate as follows: the primary circuit of production views labor as central to the relations between direct means of production and consumption. To produce value and surplus value, labor productivity can be increased through increasing work hours/days and/or reorganizing work processes (e.g., division of labor). The commodities produced from such increased productivity are, in turn, consumed by labor to reproduce labor power. However, there is always a crisis of proportionality or contradictions resulting from producing too much capital relative to the opportunities needed to employ such surplus capital. This is referred to as overaccumulation. According to Harvey, overaccumulation manifests in the primary circuit in several forms, such as overproduction of commodities and/or excess labor supply (commodity supply exceeding demand), which later translate into decreased commodity prices or decreased labor wages. For instance, crises of overaccumulation manifest prominently in the global South through surplus labor in urban areas, mostly rural labor migrants who inhabit and operate within specific geo-economic enclaves: informal settlement and economy. Factors including internal political-economic dynamics (e.g., conflicts, unequal spatial distribution of resources) and external forces, such as structural adjustment programs of deregulation, privatization, and trade liberalization by the World Bank and other transnational donors, have historically restructured the rural-urban economies and production-consumption relationships within countries of the global South. The result is the growth of the informal sector constituted by the “urban sub-proletariat” or the “reserve army of underemployed and unemployed” (Hart, 1973, 173) in the global South.

The secondary and tertiary circuits of production can be considered simply as two investment opportunities for capital to address overaccumulation in the primary circuit. The secondary circuit, according to Harvey (1978), constitutes fixed capital and consumption funds. Fixed capital is long-term fixed assets (i.e., machines or built-environment assets such as road infrastructure) that contribute indirectly to the direct means of production in the primary circuit. Consumption funds are also fixed assets (household machines or built-environment assets such as houses, sidewalks, etc.) that also contribute indirectly to the direct means of consumption. Both fixed capital and consumption funds allow capital to expand the production and consumption process in the primary circuit, thereby allowing for extra investment opportunities to address overaccumulation in the primary circuit. The tertiary circuit constitutes investment in science and technology (on the production side) and investment in social expenditures (on the consumption side). For instance, to address labor surplus and associated low standards of living in urban areas, investments could be made in factories, machines, and transport networks (fixed capital in the built environment and investment in technology) to indirectly increase the means of production. Complementary investments on the consumption side could also occur, to reproduce labor power by providing affordable housing and other social-infrastructure amenities such as healthcare, and parks and recreation. In other words, switching capital investment from the primary to the secondary and tertiary circuits can address (albeit temporarily) the overaccumulation challenge of surplus labor and its associated low standard of living in urban areas.

In general, however, countries of the global South still struggle to invest in these two circuits to mitigate the consequences of overaccumulation. This struggle exists, as Harvey (1978) noted, because for capital to switch to the secondary and tertiary circuits, there must be free flow money (decoded capital) through state monetary and fiscal functions (e.g., taxation) and some form of financialization (i.e.,

(footnote continued)

even better analytical antidotes (e.g. Amin, 1974, 1976), such theoretical explorations and comparisons exceed the scope of this paper.

creation of capital market and credit systems). Financialization through capital market and credit systems creates “fictional [or fictitious, imaginary or usury] capital,” which Harvey (1978, 107) describes as “capital offered in advance of actual production and consumption.” In other words, fictional capital, also seen as capitalization, refers to interest-yielding capital (e.g., shares, stocks, bonds) and credit systems that represent claims on future revenue (e.g., shares owned or interest on secured and unsecured debts). Fictional capital is not necessarily connected to real capital accumulation; it inspires confidence that actual production will generate surplus value. Thus, for capital to switch from the primary to the secondary and tertiary circuits (i.e., invest in fixed capital, consumption funds, social expenditures, and science and technology), these global South countries need effective state monetary/fiscal regimes and capital market and credit systems.

Two overlapping challenges had until now constrained the building of effective state monetary/fiscal regimes and financialization (i.e., capital market and credit systems) in the global South. First, most firms and households operate in the informal economy, which makes them unknowable and incalculable in the capital market and credit system. For example, to establish a collateralized (e.g., mortgage) or unsecured credit system (e.g., credit cards) for businesses and households, financial institutions must be confident that they can extract surplus value from these households through mechanisms such as offering loanable capital to these households and businesses. Some have suggested that Africa’s underdeveloped mortgage market, for instance, stems partly from this confidence crisis of not knowing the mortgage-worthiness of large segments of the population (see Renaud, 2009, Amoako and Frimpong Boamah, 2017). This confidence is often expressed through the credit ratings of debtors, which requires knowing and calculating, for example, transactional and borrowing histories. The second, related challenge is that since many of these global South countries have what is considered to be “weak or failed states” (Migdal, 1988, Krasner, 1999, Handel, 2016), their state institutions struggle to render households and businesses knowable and calculable in the state’s fiscal policies (e.g., taxation). Simply put, to avert over-accumulation crises in the primary circuit, financial and state institutions must *financially include* households and firms, most of which are in the informal sector, into fiscal policies and the financialization process (e.g., creation of capital market and credit systems) to extract surplus value for investments into the secondary and tertiary circuits.

FinTech companies and their deployment of MM are helping to build an emerging financialization process to address the two overlapping challenges. As mentioned, one manifestation of financialization is financial innovations, which provide opportunities for increased profit extraction by both financial and nonfinancial corporations. While such innovations manifest in forms such as asset backed securities and credit default swaps in global North economies (see Vercelli, 2013; Jarsulic, 2013), global South countries reflect innovations in technomarket projects such as MM and varied financial instruments deployed through it, such as airtime currency (see Maurer, 2012). This technomarket innovation also provides opportunities for global South economies to bank and tax the hitherto unknowable, unbankable, and untaxable urban sub-proletariat who are mostly engaged in the informal sector. More broadly, financialization through digital finance tools such as MM in the global South permits what Mawdsley (2018, 264) sees as the “escort [of] capital to frontier markets.”

We use two case countries, Ghana and Bangladesh, to empirically illustrate the theoretical analysis outlined above. We chose these two countries because we have extensive research experience and contacts there. The examples from these two countries help to convey our broader message: whether in sub-Saharan Africa or South Asia, the underlying laws of accumulation through MM are the same: to make the invisible, unbanked, and untaxed hyper-visible, bankable, and taxable for the sake of accumulation. Thus, while we agree that Ghana and Bangladesh have distinct ethno-political and historical geographies, and although both continue to experience rural-urban migration and

resulting large labor forces within their informal economies (see Aryeetey, 2009, Songsore, 2009, Uz Zaman, Alam and Islam, 2010, ADB and BBS, 2012), they provide an interesting empirical baseline examples from which we can build future work.

4. FinTech, MM, and emerging financialization in Ghana and Bangladesh

Despite their distinct geo-ethnic and socio-demographic differences, Ghana and Bangladesh, like other African and South Asian countries, seem unified through their experiences of a global hegemonic discourse of financial inclusion. The goal of this section is not to draw comparison between Ghana and Bangladesh, but to draw examples of how and where economic practices of MM and financialization “travel” across and are “domesticated” (Pollard et al., 2009, 138) in these countries. This section provides an overview of MM activities in these two countries, and the next section will draw examples from these two countries and other countries in the global South to illustrate our earlier conceptualization of how circuits of capital intersect with lived economic practices (i.e., unbanked and informal economic activities) and digital finance (i.e., MM) in the global South.

With similar proportions of their labor forces engaged in the informal sector—89% of total employment in 2005/2006 for Ghana (Aryeetey, 2009) and 88.5% of Bangladesh’s total employment in 2010 (ADB and BBS, 2012)—both countries have large populations of unknowable, unbanked, and untaxed urban sub-proletariats. Both countries also share similar rural-urban migration experiences and consequences (e.g., increased urban unemployment and high cost of living) as a result of their subjection to the neoliberal structural adjustment programs (SAPs) of the 1980s (Uddin, 2005; Misra, 2017; Crawford and Abdulai, 2009). Similar to these earlier SAPs, the financial inclusion agenda in Ghana and Bangladeshis once again a globally sanctioned, neoliberal logic, and its full consequences, benefits or otherwise, are yet to be seen.

Ghana and Bangladesh adopted the language of financial inclusion to allow the proliferation of MM services, under the regulation of their central banks, Bank of Ghana and Bangladesh Bank, which are responsible for setting rules and regulations on its operation. The largest MM players in Bangladesh are bKash, Grameen Phone, and Rocket. Mobile money was first started in Bangladesh by Trust Bank in 2010, followed by Dutch Bangla Bank and bKash in 2011, using the high penetration rates of mobile phones (bKash, 2015). Of these, bKash quickly became the largest provider of MM services, not just in Bangladesh but in the world. Notable bKash shareholders include BRAC Bank Limited, Money in Motion, International Finance Corporation, and the Bill and Melinda Gates Foundation. In Ghana, MM services are provided primarily through telecommunication corporations, also known as mobile-money operators (MNOs). There are four MNOs in Ghana: MTN, Tigo, Vodafone, and Airtel, and MTN has the majority (54%) of agents as of December 2016 (Bank of Ghana, 2017).

A web of state and private actors support MM activities in both countries. First, the central banks of both countries ensure efficient, safe, and reliable financial sector and banking environments by regulating the activities of banks and specialized deposit-taking institutions. For MM, the central banks ensure that every unit of electronic money issued by the MNOs is backed by an equivalent amount of banknotes and coins in the central banks. Second, the infrastructure provided by the retail and commercial banks supports the flow of money between parties. That is, these retail and commercial banks hold the physical custody (i.e., banknotes and coins) of the electronic money. Third, the National Communication Authority (NCA) in Ghana and the Bangladesh Telecommunication Regulatory Commission (BTRC) regulate the activities of the MNOs by ensuring the integrity of the MM technologies and the security of user data. Finally, agents, who facilitate financial transactions through users’ individual accounts or through their generic accounts, function as bank tellers but in many

Table 1
Summary of Country Statistics on Mobile Money and Demographic Characteristics.

	Ghana		Bangladesh	
	2014	2018*	2014	2018*
¹ Registered MM accounts	7,167,542	31,431,518	219,700,000	558,100,000
¹ Active MM accounts	2,526,588	12,594,427	97,500,000	223,300,000
¹ Registered MM agents	26,889	190,265	4,895,762	7,402,707
¹ Total value of MM transactions (\$million)	2525	33,316	12,280 ⁺	33,664
¹ Total value of checks cleared in banks (\$million)	23,687	31,317	184,535 ⁺	205,857
² Total population (2016 estimate)	27.7 million		158.9 million	
² Economically active population (2016)	75.2%		63.5%	
² Employed population (2016)	71.4%		60.8%	
³ Informal economy workers (2018)	90.1%		89%	
³ Informal economy workers in urban areas (2018)	83.6%		78%	

* This is from January to September 2018.

⁺ This value is for the 2014/2015 fiscal year. The values in both countries' currencies have been converted into dollar (\$) equivalent exchange rates: \$1 = Gh¢ 4.8 & BDT 84, respectively.

¹ Statistics on MM were from the central banks of each country, the Bangladesh Bank and Bank of Ghana.

² Statistics on population, economically active population, and employed population for Bangladesh (BBS, 2017) and Ghana (GSS, 2016).

³ Statistics on informal sector workers were from the ILO (2018).

kinds of locations, from corner stores to pharmacies to shopping malls. These agents are simply the liquidity managers; that is, they facilitate cash in (accept banknotes and coins as payments from users sending money) and cash out (issue banknotes and coins to cash recipients). In other words, acting on behalf of the MNOs, these agents facilitate the flow of electronic money between senders and recipients. Commissions (mostly monthly lump-sums) are paid to the agents based on the two-way transaction costs that senders and receivers of MM services pay. Most individuals using MM services do so through agents.

The assembling of state, market, and technological instruments through MM offers opportunities to address the challenges of building effective state monetary/fiscal regimes and financialization: a large unknown, unbanked, and untaxed population and weak or failed states. Apart from employing individuals as MM agents, MM has enabled the collection of previously inaccessible data on users (both MM senders and receivers) and agents. According to the BoG (see Table 1), there were 12.5 million active MM accounts (close to half the country's population) in Ghana as of September 2018, which is five times the number in 2014 (Bank of Ghana, 2017). The number of registered agents has also grown by more than seven times the number in 2014 (ibid). In 2016, the number of MM customers in Ghana grew more than twice the number of bank customers (ibid). We observe similar rapid growth in MM use in Bangladesh: registered MM accounts in 2018 increased by more than twice the number in 2014, and there was a 51% increase in the number of registered agents in this same period. The increase in registered MM users and agents represents access to electronic data that was previously unavailable or too costly to gather in a centralized electronic database, including who is sending and receiving money (name, gender, and other unique details such as government-issued identification numbers, including passport numbers, voters ID numbers), where payment is sent from and received, and agents' identities.

Again, in addition to data on where and who is sending and receiving money, access to users' transaction histories is also available, including how much and when payments are sent and received. In Ghana, from 2014 to 2018 MM transactions grew more than banking transactions: the value of MM transactions increased by more than 1000%, but the value of checks cleared in banks grew by only 132% within this same period. As of September 2018, the total value of MM transactions was almost \$2 million more than that of checks cleared in banks. In Bangladesh, we also observe that the rate of growth in the value of MM transactions exceeds that of banking transactions: there was more than a 170% increase in the value of MM transactions from 2015 to 2018 but only a 12% increase in the value of checks cleared in

the banks within this same period. In other words, we observe in both countries that the rate of growth in the amount of decoded money-flows via MM exceeded that of traditional banking.

The growth in the value of MM transactions should be understood in the context that MM users are mostly the urban and rural poor who send money to their families in rural areas and who typically fall within the informal economies of both countries. A 2016 demographic survey of MM users in Bangladesh found that 76% of users fell below the poverty line of \$2.50 and were mostly male, urban residents (FII, 2017). In a 2015 survey, 61% of active MM users in Ghana also fell below the \$2.50 poverty line, but the gaps between males and females and between urban and rural were not as pronounced as they were in other surveyed African countries (i.e., Kenya, Uganda, Tanzania, and Rwanda) (FII, 2016). Studies show that in informal economies, where cash is king and face-to-face contact between sellers and customers is paramount (Deen-Swarray et al., 2013, 8), MM is driving the growth of those economies in the global South by, for instance, helping informal businesses to pay suppliers and receive payments from customers (Larsson and Svensson, 2018, Mwangi, 2014, Deen-Swarray et al., 2013). In other words, Dolan and Roll (2013) remind us that the technologies of transnational capital, in this case MM, are deployed to financially include poor, informal citizens and their businesses. This so-called inclusion occurs not only by making them visible and calculable (i.e., registering them as users and agents) but also by decoding free-flowing wealth through engaging the informal poor as MM agents, generating surplus value through fees from MM transactions, and opening channels of wealth flow (e.g., domestic and global remittance flows) that were previously non-existent or invisible. Today, through services such as WorldRemit, remittances to countries in Africa can be sent through MM from anywhere for as little as \$1.99 in fees.

5. Locating the FinTech ecosystem within the circuits of capital: Capital switching and emerging financialization in the global South

The discussions so far, which we synthesize subsequently with respect to empirical insights and broader conceptual points, wrestle with our earlier stated questions about who or what is being financially included in the global South, how are they included, and whether financial inclusion through MM further integrates global South economies into the hyper-financialized, capitalist world system. Harvey identified the capital market and the state as the means for the switch from the primary to the secondary and tertiary circuits:

“Individual capitalists tend to overaccumulate in the primary circuit

...; they have considerable difficulty in organizing a balanced flow of capital between the primary and secondary [and tertiary] circuits. A general condition for the flow of capital into the secondary circuit is, therefore, the existence of a functioning capital market and, perhaps, a state willing to finance and guarantee long-term, large-scale projects with respect to the creation of the built environment” (1978, 107).

In the global South, the so-called weak states alone cannot ensure capital switching from the primary to the secondary and tertiary circuits. Similarly, in countries where most individuals and businesses are invisible to both state and market instruments, the creation of fictional capital through capital market and credit systems becomes impossible at worst and ineffective at best. The cases of Ghana and Bangladesh highlight the alliance between state and market forces (e.g., transnational telecommunication companies and banks) as the means for capital switching. Embodying this alliance, mobile money helps some of these global South countries to extract surplus value to reinvest in infrastructure and social expenditures, thereby helping them to avoid, albeit temporarily, the neoliberalization crises of informality, unbanked people, unemployment, and infrastructure deficits. Similarly, MM now also offers the techno-market instrument that identifies the previously unknowable and incalculable transaction histories of most of global South countries’ populations: these are the necessary ingredients to provide confidence (i.e., creditworthiness profiles) to financial institutions that individuals and businesses can generate expected surplus value in actual production, that is, the ability to create fictional capital. We now discuss how this is becoming possible.

First, increased investments and regulatory support in telecommunication infrastructure (capital switch to the secondary circuit, on the production side) has directly employed the previously unemployed or underemployed urban-labor (and even rural-labor) potential in both countries as MM agents. A study of businesses in Kenya, Tanzania, and Uganda found that 48% of firms’ businesses that adopted MM purchased fixed assets such as machinery, land, and buildings (Islam et al., 2018). Furthermore, an indirect effect is that as MM increasingly supports growth in the informal economy, the growing informal businesses could absorb more unemployed and underemployed urban-labor potential. On the consumption side, in the secondary circuit there is also increased investment in techno-market literacy programs in both countries, under the umbrella of financial inclusion, to increase the consumption of MM technology and associated goods and services. For instance, MM operators such as bKash operate as a subsidiary of an NGO, BRAC, (with support from the Bill and Melinda Gates Foundation) in Bangladesh and have conducted free MM training sessions to increase the number of women using MM and to encourage users to switch from temporary (over-the-counter) to more permanent uses of MM, such as using accounts and wallets (Johora and May, 2015). In 2016, less than a year after MTN presented new Agent and E-Money Issuer Guidelines, Mattern (2018) highlighted the company’s aggressive customer education and agent recruitment strategies, in order to gain more than 75% of Ghana’s active MM users.

Second, a switch to the tertiary circuits (i.e., investment in science and technology and social expenditures) requires the state to extract taxes to finance these expenditures. Taxes from individuals and businesses, most of whom were previously invisible in the informal economies, is now possible through the registration of thousands of individuals and businesses as MM users and agents. Apart from tax revenues generated by the state from MM transactions and even mobile phone use in general (e.g., taxes on calls, SMS and data use), the state can now use MM to collect property and personal income taxes. Hall (2018) reminds us of the state’s role in supporting the ways in which global finance shapes space and places. While no specific instances exist in the cases of Ghana and Bangladesh, state revenue authorities in Kenya, Tanzania, Cameroun, and Mauritius are partnering with MM operators to identify individuals and businesses for tax purposes and ensure flexible, easy payments of income, sales, and property taxes through MM (GSMA, 2017; GSMA, 2014). With increased revenue

generated from taxes, all things being equal, these global South countries will be able to invest in their infrastructure and social expenditures. For instance, Kenya’s National Transportation Safety Authority has increased its revenue through MM payments, which has allowed it to reinvest the money to expand its transportation infrastructure (GSMA, 2017).

Finally, the use of MM to create fictional capital through capital markets and credit systems is not fully realized in Ghana, Bangladesh, or any global South country, for that matter. However, the current mode of MM use has laid the foundation for fictional capital in two key ways. First, there is now interest-yielding capital for those who own MM wallets in Ghana. These wallets refer to MM users’ accounts for person-to-person (PSP) transfers and payments of goods and services. MM users receive quarterly interest on the balances (or floats) in their MM accounts. A total of about \$5.17 million in interest was paid to MM wallet account holders (Bank of Ghana, 2017). In Bangladesh, although MM account holders are not paid interest, a 2014 financial inclusion survey (FII, 2014) showed that MM users are calling for interest-yielding accounts:

“If like banks, interest was paid on the amount saved in the account, then people would have had a better experience.” (Rural male exit interview respondent, age 18–25, Munshiganj, Dhaka division).

“It would be good to provide eight to 10 percent interest like banks, and then everyone can deposit money in the personal account in large amounts. They wouldn’t need to go to the bank.” (Mobile money agent, rural, Munshiganj, Dhaka division).

The demand for interest-yielding shares or capital through MM provides an avenue for the previously invisible population to now have a seat, albeit small, at the financial capital table. We are here reminded that scholars see the rise of “share-holder value ideology” (Epstein, 2015, 8) as a marker of financialization (Aglietta and Breton, 2001, Froud et al., 2006). More important, this raises concerns regarding who will eventually control this table, as high-income earning individuals turn their attention to MM-based financial capital. This concern has yet to emerge in empirical terms, as MM continues to realize its full potential in decoding fictional capital in these global South countries. Note that MM is already providing interest-yielding shares to corporations that own shares in the companies. For instance, as noted, BRAC Bank Limited, Money in Motion, International Finance Corporation, and the Bill and Melinda Gates Foundation are equity partners in bKash, one of Bangladesh’s biggest MM service providers, which *Fortune* magazine also ranks among the top 50 “Change the World” companies in 2017. Such mix of donor and private-sector partners in MM reinforces what development geographers, such as Mawdsley (2018, 264), refer to as the deepening of “financialization in the name of ‘development... [through] transforming objects into assets available to speculative capital flows” (see also Carroll and Jarvis, 2014).

However, MM’s realization of its full potential for fictional capital is about not only capital markets but also the credit system.⁴ The foundational infrastructure is now available for MM service providers to generate interest-yielding revenue by offering, for instance, non-collateralized debts. MM is uniquely positioned to make this happen in the global South because telecommunication companies have MM users’ data, such as bio details, transaction history, and MM user accounts (in the case of MM users who have MM wallets). Again, this data is also connected to their cell phone, especially for those who use their cell phones for calls, internet browsing, and MM transactions. This all-in-one data center makes it possible to assess an individual’s credit risk profile if a user is advanced a line of credit prior to the user’s future MM

⁴ Ash et al. (2018a, 1138) remind us that these FinTech digital interfaces, while they present opportunities, are also created to manage “frictions,” which helps to speed up the lending process, trivializes consumers’ borrowing decisions, and possibly entraps FinTech users in digital indebtedness (see also Ash et al., 2018b).

revenues and/or transactions.⁵ In other words, an individual or business can use MM credit, which would then be deducted from future MM transactions made or received. The mechanics for this to happen may seem too far-fetched, but telecommunication companies, which also serve as major MM service providers, are already experimenting with a cell phone call-credit system in Ghana. Users in Ghana can now borrow call credits, which is repaid (with interest) the moment the user purchases recharge call credits on their phone. Some scholars have argued that the digital footprint of FinTech users provide content information equal to or exceeding that of credit bureau scores, which presents opportunities to determine the creditworthiness of the unbanked population (Berg et al., 2018). The immense potential for developing MM-based credit systems was summarized in an article (Hanouch and Kumar, 2013) published by GCAP, a global partnership of organizations working on financial inclusion:

“New products emerging in the mobile money space are increasingly analyzing data from mobile wallet and cell phone use as the engine behind the products... The potential of data is at a very early stage but holds a lot of promise. For example, AliFinance, which was established in 2011 to provide financing to over 16 million small and microenterprise vendors in China, has built its own credit scoring model based on online activity. Clients qualify for a credit limit based entirely on their online score. No contact is needed between borrower and lender, and all communications, contracting and payment are handled online, helping reduce costs and risk.”

6. Conclusion

This paper offered a theoretical analysis to unpack the FinTech economic phenomenon emerging in the global South. Largely conceptual but interlaced with empirical examples from Ghana and Bangladesh, the paper critically examined the rise of FinTech activities, popularly known as mobile money, or MM. We employed David Harvey's adaptation and redeployment of the laws of accumulation to relate MM to the capitalistic relationship between capital and labor in the global South. We argued, among other points, that MM emerges as a techno-market fix to bank and tax the previously unknown, unbanked, and untaxed urban sub-proletariat who are mostly engaged in the informal sector. Making the informal sector legible by incorporating it into the global capitalist system makes “everything” possible; the scope is immense, from tax-revenue generation to fictional capital creation through interest-yielding capital and credit systems. In other words, capital needs to code the informal sector to extract surplus value, by making it legible and calculable. Mobile money offers a techno-market instrument, via state-capital alliance, for including the previously invisible informal economy.

Beyond the particularities of the conceptual and empirical insights offered in this paper, our arguments contribute broadly to the literature on the economic, digital, and development geographies of postcolonial economies in the global South. First, by moving beyond the formal spaces of global North economies, our arguments offer insights into the domestication of financialization and the informal spaces of global South economies. Having deployed an Anglo-centric, economic geography lens (i.e., circuits of capital) to examine the everyday lived (informal) economic experiences of global South economies, this paper makes an attempt to respond to what Pollard et al. (2009) identified as “a long-overdue dialogue between economic geographers and scholars working with postcolonial approaches.” We are able to travel across

⁵ The potential for MM to generate previously unavailable data points raises pressing questions about the role of data in digital finance and its implications, especially on protecting safety and ‘cyberspatial sovereignties’ of consumers (Maurer, 1998), and effectively managing cryptocurrencies (Dodgson, Gann, Wladawsky-Berger, Sultan, & George, 2015; Gomber, Koch, & Siering, 2017.)

North-South and Africa-Asia boundaries to make connections between apparently disparate global North economic theorizing (circuits of capital) and global South economic experiences (digital financing and informalized economy).

Second and finally, our arguments highlight how digital financialization intersects complexly with the development geographies of global South economies. The role of the state in facilitating the process of digital finance and financialization in these global South economies is now reinforced by global donors and international organizations (e.g., the United Nations) in the name of developing these economies through financial inclusion. The aim here is not to criticize efforts of financial inclusion. Rather, based on lessons learned from the use of similar well-intentioned market instruments, the aim is to engage critical conversations on how mobile money can end up entrapping global South countries in the exploitative and dispossessing moments of transnational capitalism. For instance, in their analysis of high-cost short-term credit market in the U.K., Ash et al. (2018b) found that consumers easy access to digital forms of credit makes them see credit as money and not as debt, which, among others, encourages impulsive spending and borrowing. This sort of analysis serves to remind policymakers, donors, and international agencies about the potential ‘dark side’ of using digital financialization to drive the so-called inclusive development of global South economies. At the very least, there is the need to (re)examine the particularities of digital financial inclusion through MM in global South economies, and how the relationship between FinTech entities and other actors (state, donor actors, and international agencies) could be (re)configured to tame the otherwise unbridled exploitative and dispossessing moments of transnational capitalism.

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