

THREE ESSAYS ON FINANCE AND ENTREPRENEURSHIP IN THE
DEVELOPING WORLD

by

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Three Essays on Finance and Entrepreneurship in the Developing World

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DEDICATION

This dissertation is dedicated to the outstanding Mercatus staff and faculty at George Mason University who have provided me with the guidance necessary to make this dissertation possible. It is also dedicated to the many friends and family members who helped support me through my graduate studies, and to my friends Patrick Newman, Julia Norgaard, David Lucas, Cameron Harwick, Jim Caton, and Caleb Fuller, whose wisdom on all things pertaining to life and economics proved to be invaluable.

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ABSTRACT

THREE ESSAYS ON FINANCE AND ENTREPRENEURSHIP IN THE DEVELOPING WORLD

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My dissertation is composed of three chapters on the relationship between finance and economic development. Today, most economists agree that financial development plays a critical role in the economic development process. Over the past few decades, the debate has shifted to examining *why* financial markets seem to play such a fundamental role in the development process. In the first chapter of my dissertation, I show that many of the explanations that have been put forward over the past few decades in the financial development and endogenous growth literature for why financial development spurs economic development were anticipated by scholars in the Austrian school of economics. In particular, I argue that their emphasis on the heterogeneity of capital, the importance of private “capitalist-entrepreneurs” in allocating savings to their highest productive use, and the dangers of government planning and control over the financial sector play an absolutely essential role in understanding why finance matters and what policies ought to be implemented in order to promote financial and hence economic development.

The second chapter of my dissertation examines the history of various policy approaches to achieving financial development in the developing world. Most policymakers agree that inclusive and well-developed financial systems play a critical role in alleviating poverty and promoting sustained economic development. In recent years, the question has centered on what policies are best suited to bring about this desirable end. This chapter breaks the approaches that have been used to combat this issue into three categories: state-led, nonprofit-led, and market-led. Using Sub-Saharan Africa (SSA) as an illustrative case study in all three of these approaches, I show that the promising advances in inclusive financial development that have been achieved over the past decade or so in SSA have come from countries that have embraced the market-led approach. I conclude that policymakers that wish to bring about sustainable financial development should therefore adopt this market-led approach by removing repressive financial regulations and barriers to entry in the financial sector in order to allow entrepreneurs and nontraditional financial service providers to enter the market.

In the third and final chapter of my dissertation, I use the mobile money revolution in Sub-Saharan Africa as an illustrative case study to show that the greatest examples of financial development in modern times have come from countries that have taken a bottom-up, or market-oriented, approach. This approach has succeeded because it gives entrepreneurs the ability to utilize their knowledge of their local economy to discover innovative ways to access financially excluded segments of the population in a

what no state development planning agency – no matter how good its intentions – could possibly emulate. Comparing the success and failures of mobile money across SSA, I argue that the key predictor of whether a country will reap the benefits of these transformative innovations is whether its government embraces a laissez-faire, or “enabling,” regulatory approach that encourages entrepreneurship and experimentation.

CHAPTER ONE: FINANCIAL LIBERALIZATION AND ECONOMIC DEVELOPMENT – A MARKET PROCESS VIEW

Introduction

The Austrian school is perhaps best known amongst macroeconomists for its emphasis on the economy's capital structure and its theory of the business cycle. What is often overlooked, however, is its contribution to understanding the principle causes of economic growth and development (Kirzner 1971; Boettke 1998; Garrison 2001).

Like other prominent growth theorists, Austrians placed a strong emphasis on the role that savings and capital accumulation play in generating higher levels of per capita income. However, unlike many of the growth theories that rose to prominence in the early 20th century, they stressed that the key to achieving sustainable economic growth lie not so much in increasing the *aggregate volume* of savings and investment or the total amount of capital an economy accumulates. Instead, it lies in improving the *allocation* of savings and investment. This can best be achieved by providing an institutional setting that allows the formation of market-determined prices and interest rates so that financial intermediaries can efficiently allocate capital and entrepreneurs can engage in rational economic calculation. So although savings and capital accumulation may be a *proximate* cause of growth, the *fundamental* cause is having institutional rules in place that protect private property and allow for the emergence of money prices (Manish & Powell, 2015). It is only in this market context that economic actors can make the most efficient use of

the knowledge that is dispersed throughout society (Mises L. , 1920 [2012]; 1949 [1996]; Hayek, 1948; Kirzner I. , 1971; Lavoie, 1985; Horwitz, 1996; Boettke, 1998).

Because of this dual emphasis on (a) the role of market-protecting institutions and (b) the role that money prices and market-determined interest rates play in guiding entrepreneurs and coordinating the plans of savers and investors over time, monetary and financial institutions¹ play a central role in the Austrian theory of economic development (Garrison, 2001). This emphasis on savings and investment also played a central role in many of the leading growth theories of the early postwar era from the Harrod-Domar model (Harrod, 1939; Domar, 1946) to the Rosenstein-Rodan's "big push" theory (1943) and Leontief's "input-output analysis" (1966). The unifying theme of these early postwar theories was that developing countries were stuck in an "underinvestment trap." The only way to escape this trap was for foreign governments to provide aid to fill the gap and for domestic governments to play a central role in allocating the economy's scarce savings into investments that were consistent with its overarching development plans. Control over the financial sector was therefore seen as a critical tool in the state's planning apparatus. The seeds of this idea persisted for decades in the World Bank's financing gap model, arguably the most popular growth model of the postwar era (Easterly, 1997).

What distinguished the Austrian theory from other early theories of how financial systems contribute to economic growth was its emphasis on the importance of allowing market forces to operate freely in the financial sector. From an Austrian perspective,

¹ I define monetary-financial institutions here as the rules regulating all types of financial intermediaries and forms of intermediation, including bond and stock markets. Although this definition is broad, it is consistent with the literature on finance and growth, which stresses that the *structure* of the financial sector (i.e. its relative dependence on banks versus stock markets) matters less than its overall development.

individuals in the private financial sector perform the critical intermediary role of accumulating society's savings and channeling them into capital investments. But perhaps more importantly, they perform the key *entrepreneurial* role of selecting which business ventures to finance based on how well they anticipate they will satisfy consumer demands. So although financial systems always play a role in a country's development process, they only realize their potential to contribute to development to the extent that governments do *not* excessively interfere with their operations and instead provide an institutional setting where financial market actors – or “capitalist-entrepreneurs” – can more fully direct the flow of savings and investment in society. When these financial market actors are free to select what projects to invest in, they generate a far more efficient allocation of capital than any state planning agency could possibly emulate.

Most macroeconomists are familiar with the Austrian theory of the business cycle, which explains how central bank credit policies can distort financial markets and spark the boom-bust cycle. Here, I assess their less known contribution to understanding why private financial markets play an essential role in driving sustainable economic growth. In particular, I argue that Austrians anticipated many of the key theoretical and empirical findings of the finance-growth literature that has emerged explaining why some financial systems do a better job of promoting growth than others. Over the past few decades, economists have consistently found that less regulated financial systems do a better job of promoting economic growth not only because they increase the aggregate volume of savings and investment, as was emphasized in many early growth theories, but instead because they enhance the *efficiency* of the economy's capital allocation – that is, private

bankers do a better job of selecting the most profitable ventures and financing the sort of innovations that increase the economy's productivity and serve as the engine of sustained economic growth. In this sense, the Austrian focus on the importance of private financial markets and the role of the banker as an entrepreneur provides a superior theoretical framework for explaining many of the key empirical findings in the finance-growth and endogenous growth literature on the critical role that financial systems play in more efficiently allocating capital and facilitating continual technological improvements.

This rest of this paper proceeds as follows. Section 2 reviews the Austrian approach to understanding the process of economic development and what role financial systems play in driving the development process. Section 3 briefly discusses some of the key findings in the finance-growth literature and explains how the Austrian approach to understanding the role that private financial systems play in promoting sustainable economic growth sheds an important light on many of the core findings in this and the endogenous growth literature. Section 4 concludes.

An Austrian Approach to Understanding Economic and Financial Development

An Austrian Analysis of the Factors that Cause Economic Growth

In later debates with market socialists, Hayek elaborated on Mises's point by pointing out that even if planners allowed markets for consumer goods and attempted to use these consumer prices to mimic the ideal outcome of a perfectly competitive general equilibrium model, the knowledge that planners would need about how to minimize costs and accurately determine how to price the economy's means of production cannot be assumed to be given ex ante in any objective form to any one person or group. That

knowledge is dispersed in the minds of individuals throughout society, and it can only be generated in the context of the dynamic market process (Hayek, 1948). Hayek and Mises concluded that rational economic calculation was only possible in the context of a market economy where the means of production are privately owned and where entrepreneurs putting their wealth at stake can be guided by money prices and profit and loss signals.

Taken together, Mises and Hayek's arguments in the socialist calculation debate laid out the core Austrian position that institutions that protect private property rights and allow for the formation of money prices are the *fundamental* cause of economic growth and development (Boettke, 1998). As Mises (1944 [2010]) wrote: "...social cooperation and the division of labor can be achieved only in a system of private ownership of the means of production, i.e., within a market society, or capitalism." It is only in this institutional setting that entrepreneurs – Mises's "driving force" of the market process – have both the incentives and the information to engage in rational economic calculation.

While institutions that protect private property and allow for the emergence of money prices are the *fundamental* cause of economic growth, elsewhere Mises and Hayek make clear that savings and capital accumulation are the *proximate* cause of growth (Manish & Powell, 2014). The availability of savings at any given moment in a society is determined by the time preferences of consumers, i.e. the discount they place on future versus present consumption. Changes in the time preferences of consumers are reflected by changes in the interest rates. When consumers reduce their time preference (i.e. they shift the time horizon of their demand from present goods to goods in the more distant future) they increase their current savings, thereby lowering interest rates in the

economy. Importantly from an Austrian standpoint, these lower interest rates make it possible for producers to engage in longer, more capital-intensive production processes that can ultimately yield more output and hence generate higher rates of economic growth.

The idea that longer or more “roundabout” production processes generate more output and are a key source of economic growth can be traced back to Bohm-Bawerk’s work in *Capital and Interest*. Bohm-Bawerk (1959, p. 2) argued that at any point a “wisely chosen...extension” of the structure of production that enabled producers to reallocate resources away from final consumer goods and towards the production of more and better capital goods at the earlier stages of production would result in “higher productivity” and ultimately lead to the production of more consumer goods.² When people reduce their time preferences (i.e. decide to increase their savings and decrease present consumption), they provide more loanable funds to the banking sector, thus pushing down interest rates in the economy. The lower interest rates enable producers to engage in more productive and time-intensive production processes that at the old rate of interest would have been unprofitable. Mises (1949, p. 260) summarized these points about the fundamental importance of savings and its role in making possible more roundabout production processes: “At the outset of every step forward on the road to a more plentiful existence is *saving* – the provisionment of products that makes it possible

² It should be noted that production processes are not more productive simply because they take longer. As Lachmann (1956, p. 84) points out: “Time by itself is not productive, nor is human action more productive because it takes longer...the essence of the phenomena [of “roundaboutness” leading to greater efficiency] rests in the increasing number of specific processing stages.” For more on why more roundabout production processes generate more output, see: Böhm Bawerk (1959a, pp. 102–118).

to prolong the average period of time elapsing between the beginning of the production process and its turning out of a product ready for use and consumption.”

In this sense, savings are the *sine qua non* of economic growth because they make it possible for the economy to accumulate more capital (Manish & Powell, 2014, p. 138). However, what distinguishes the Austrian theory from later neoclassical growth theories is that they stress that the *composition* of the capital stock matters far more than its total size. Unlike neoclassical growth models, Austrians recognize that capital is not some homogenous blob that can be meaningfully added up into some economic aggregate or costlessly reallocated between different investment projects. Capital is *heterogeneous* and *multi-specific*. Heterogeneity implies that capital goods differ not only in their physical properties, but that they also differ in the use they serve in the plans of entrepreneurs. A shovel and a bulldozer are clearly physically heterogeneous. But they are also heterogeneous in use because each capital good is capable of being used in many different types of entrepreneurial plans (Lachmann 1956 [2011], p. 13). They also differ in terms of their complementarity and substitutability based on the subjective plans of producers. A shovel and bulldozer, for instance, can be used as complements or substitutes, depending on what the producer’s plans are. The fact that the same capital goods can have multiple, albeit limited, uses implies that capital is multi-specific in its function.

Recognizing that capital is both heterogeneous and multi-specific goes a long way in explaining why in the Austrian theory the entrepreneur is the driving force of the market economy (Kirzner, 1973). Entrepreneurs are responsible for discovering the most

profitable ways to combine and utilize scarce capital goods in their production plans.³

The mere fact that the future is uncertain and that different entrepreneurs have different and often contradictory expectations of the future implies that some of their plans will fail. Finding ways to put society's savings into the hands of the entrepreneurs who are best able to discover the most profitable of the many competing uses of heterogeneous capital, then, is absolutely essential to increasing productivity and achieving sustainable growth.

The Special Significance of Monetary-Financial Institutions

The Austrian emphasis on the role that savings and capital accumulation play in the context of a market economy make clear that a nation's financial system lies at the heart of the process of economic development (Horwitz, 2000, p. 5).⁴ Contrary to the way it is presented in most neoclassical growth models where savings are automatically converted into investments that augment the economy's capital stock, Austrians stress that savings are not automatically channeled into the most efficient investment projects. It is the financial sector that is fundamentally responsible for channeling the public's savings into the hands of entrepreneurs who can invest them most productively. So although they have long been overlooked in neoclassical growth theories and development texts, an Austrian understanding of the forces that generate economic growth places a special emphasis on

³ Lachmann (1956, p. 16) explains: "The entrepreneur's function is to specify and make decisions on the concrete form the capital resources shall have...as long as we disregard the heterogeneity of capital, the true function of the entrepreneur must also remain hidden."

⁴ In his seminal work on Austrian macroeconomics, Roger Garrison has identified time and money as the two "universals of macroeconomic theorizing." Garrison (1984, p. 200) summarizes his argument: "Time is the medium of action; money is the medium of exchange...and it is precisely the 'intersection' of the 'market for time' with the 'market for money' that constitutes macroeconomics' unique subject matter." The *financial sector* therefore takes on a special importance in the Austrian theory because it is here that the markets for time and money intersect through the determination of interest rates in the market for loanable funds to help coordinate the economy's intertemporal structure of production (Horwitz 2000, p. 5).

monetary-financial institutions and the role that bankers and all other players in the financial sector play in allocating savings towards their highest valued use. Their success in predicting future market conditions and intermediating their customers' savings into profitable capital investments projects that yield final goods that satisfy the demands of future consumers is what in large part explains the vast differences in growth between countries. As Mises (1949, p. 497) argued: "The start which the peoples of the West have gained over the other peoples consists in the fact that they have long since created the political and institutional conditions required for a smooth and by and large uninterrupted progress of the process of larger scale saving, capital accumulation, and investment."

Individuals in the financial sector (bankers, for short) play two critical roles in the Austrian story. First, in their role as an intermediary they acts as an *aid* to entrepreneurs in the market, providing them with the loanable funds they need to bring their investment projects to fruition.⁵ By pooling together savings and investing them in an array of investments, bankers allow savers to diversify their risk. And by providing transferable financial assets that augment the liquidity of the economy, they increase the supply of savings that individuals are willing to provide, making it possible for savers to finance longer and often more productive investments without entirely sacrificing their liquidity. In this role as a financial intermediary, bankers therefore stand at a critical juncture in the Austrian theory of "sustainable" economic growth: the loanable funds market (Garrison, 2001, pp. 36-40; Horwitz, 2000). By acting as a liaison between lenders and borrowers,

⁵ When asked by Murray Rothbard if there was an institution that clearly delineated a socialist system from a capitalist system, Mises identified financial markets – namely, the stock market – as the clear-cut delineation. He said: "A stock market is crucial to the existence of capitalism and private property. For it means that there is a functioning market in the exchange of private titles to the means of production. There can be no genuine private ownership of capital without a stock market" (Quoted in Cwik 1999).

they coordinate the time preferences of savers with the plans of investors. When bankers perform this function well, the economy remains on its sustainable production possibility frontier (PPF), and the financial sector operates quietly in the background. But when the financial system does not perform this function well, the economy deviates from its growth path and the failures of the financial sector are brought starkly into focus.⁶

Second, and perhaps most importantly from an Austrian perspective, the banker serves as an *entrepreneur* himself, and one of the most critical and yet underappreciated ones in the entire market economy (Mises 1949 [1996], p. 289-292). Just as the ordinary business entrepreneur is responsible for efficiently allocating the physical capital at his disposal, the banker in his role as a “financial entrepreneur” is responsible for efficiently allocating financial capital towards its highest valued use. He uses his entrepreneurial judgment and specialized knowledge to assess other entrepreneurs in the economy and decide how to allocate his customer’s scarce savings amongst the wide array of potential investment projects that are available. The mere selection of which ventures to finance and which to abstain from is an important act of entrepreneurial judgment that requires a considerable degree of skill. Over time, the profit and loss system reveals which financial entrepreneurs are wise stewards of their customer’s savings and weeds out those who throw good money after bad. But at any given point, these financial entrepreneurs direct a large share of the economy’s savings and, in so doing, play a critical role in shaping the economy’s capital structure. Because in most neoclassical growth models savings are

⁶ I leave aside for now the issue of whether or not the central bank or some other non-market force was the cause of this failure. The role that central banks, in particular, play in fueling the business cycle is at the heart of the Austrian theory of the trade cycle (see: Mises, 1912 [1981]; Hayek, 1935; Garrison, 2001).

automatically converted into investments that augment the economy's capital stock, the critical role that financial intermediaries play as entrepreneurs is hidden. But the Austrian focus on entrepreneurs and key role of financial institutions brings them into sharp focus.

Although his membership in the Austrian school is disputed (Simpson, 1983), the scholar who was arguably most responsible for placing the financial system as a whole and the banker in particular at the center of the process of economic development was Joseph Schumpeter. For Schumpeter, financial systems are critically important because they are responsible for financing the entrepreneurs who adopt innovative technologies that fuel the dynamism of the capitalist economy. The banker is not merely a passive intermediary. He is the “ephor” of the capitalist system, a powerful actor whose role in selecting which projects to finance makes him a central figure in the development process. “The banker, therefore, is not so much primarily a middleman...He authorizes people, in the name of society...to innovate” (Schumpeter J. A., 1912, p. 74). His “essential function,” Schumpeter (1912, p. 106) argues, “...consists in enabling the entrepreneur to withdraw the producers' goods which he needs from their previous employments...and thereby to force the economic system into new channels.” In short, the Schumpeterian banker plays an indispensable role of putting financial capital in the hands of the very innovators and market entrepreneurs that drive the cycle of “creative destruction.”

Throughout his writings, Mises also highlighted the important role that financial market participants play in their role as entrepreneurs in providing a rational allocation of resources. It is the banker's job, in his role as a speculator, to “select from the multitude

of technologically feasible projects those which will satisfy the most urgent of the not yet satisfied needs of the public” (Mises, 1952 [2008], p. 72). Indeed, in his closing argument in the socialist calculation debate, Mises argued that market socialists overlooked the critical role that financial market speculators play in efficiently allocating financial capital. “It is these financial transactions of promoters and speculators that direct production into those channels in which it satisfies the most urgent wants of the consumers in the best possible way,” Mises (1949 [1996], p. 708) concluded. “If one eliminates them, one does not preserve any part of the market.”⁷

The important role that the financial system plays in helping to direct resources and shape the economy’s capital structure was also evident in Hayek’s work on business cycles and capital theory. Hayek stressed that because capital is not homogenous – that is, because capital varies in terms of its complementarity and substitutability – financial markets play a key role in efficiently allocating savings to entrepreneurs who could invest in the types of physical capital that best fit into the economy’s existing capital structure. As Hayek (1941, p. 147) noted, “a given stock of capital goods does not represent one single stream of potential output...it represents a great number of alternatively possible stems of different shapes and magnitudes.” Financial entrepreneurs play a critical role because they are in charge of using their specialized knowledge about various investment opportunities to select the entrepreneurs who can combine capital goods in ways that increase their productivity and generate the mix of final products that consumers demand.

⁷ Unfortunately, Mises (1949 [1996], p. 306) lamented, this important role is often overlooked. “The illusion that management is the totality of entrepreneurial activities...disregards entirely the role that capital and money markets...play” in directing commercial activity and shaping the economy’s capital structure.

Later generations of Austrians have built upon these themes on the important role the financial sector plays in determining what sort of investment activities take place and the central role that financial intermediaries play as entrepreneurs in the market process. In his work on entrepreneurship and the market process, Kirzner identified the importance of the “capitalist role” in selecting the entrepreneurial plans that are most likely to bear fruit (Kirzner I. , 1971). By sacrificing current consumption and financing the riskier, longer-term investment projects that tend to raise productivity, Kirzner argued, these financial sector entrepreneurs play an integral albeit underappreciated role in the development process. Rothbard (1962, p. 509) identified the “capitalist-entrepreneur” – “the men who invest in ‘capital’” through the “advance of money to owners of factors” as arguably the most important type of entrepreneur in the economy.

More recently, Klein (1999, p. 21) has argued that the “driving force behind the market economy is a particular type of entrepreneur, the *capitalist-entrepreneur*, who risks his money capital in anticipation of future, uncertain, returns.” He adds: “if the capitalist-entrepreneur is the driving force behind the industrialized, market economy, then economists should focus their attention on the financial markets” because “it is here that the most important form of entrepreneurship takes place” (*ibid.*, p. 35) as “owners of financial capital decide which firms, and which industries, receive resources to make consumer goods” (*ibid.*, p. 19). This “financial-market entrepreneurship,” Klein (*ibid.*, p. 37) concludes, is the defining feature of the market economy. Lewin (1999, pp. 214-215) likewise argues that any discussion of the capital structure of an economy cannot be separated from the economy’s “financial structure,” the set of financial institutions,

instruments and practices that “facilitate the formation and mutation of the capital structure.” He concludes (*ibid.*, p. 215) that: “In [the financial structure’s] absence, the capital structure has no meaning and no value.” Dempster (2015, p. 566) aptly describes the centrality of the financial system to entrepreneurship in the Austrian theory: “Within the Austrian framework...problems of finance are intimately connected to those of entrepreneurship; indeed, the entrepreneurial problem of what to produce and the financial problem of how to allocate resources are two sides of the same coin.”

Implications of the Austrian Theory of the Role of Finance in Growth

The Austrian theory of the relationship between finance and economic development outlined here has two major implications. The first is that Austrians were among the first to explicitly emphasize the indispensable role that financial markets and institutions play in contributing to the process of economic growth. Broadly speaking, financial markets contribute to economic development through two main channels in the Austrian story. First, in their role as intermediaries they increase the total *volume* of savings that can be funneled into investments projects. The increase in savings and investments helps contribute to more rapid capital accumulation and a larger capital stock, which is a common factor in explaining temporary bouts of growth in many growth models.

The second and most important channel through which finance contributes to economic growth is through increasing the productive *efficiency* of the allocation of capital in an economy. This increased productivity occurs in large part because of the role that bankers and other financial market actors play as financial entrepreneurs (or “capitalist-entrepreneurs”). Financial entrepreneurs economize on the cost of acquiring

information about various prospective investments. Importantly, successful financial entrepreneurs are able to use their specialized knowledge to select the entrepreneurial ventures that are most likely to pay off. This means they are best suited to put financial capital in the hands of business entrepreneurs who are then able to invest in the types of capital investments that best complement or “fit into” the economy’s existing structure of heterogeneous capital goods. And by providing savers with ways to diversify the risk of their portfolio and maintain the liquidity they desire, they make it possible for savers to provide more loanable funds than they would otherwise and invest in riskier and longer-duration (i.e. more “roundabout”) projects that have the potential to yield more output (Mises 1912 [1981], pp. 261-263). Manish and Powell (2015, p. 709) describe the key Austrian insight on the role that financial markets play in rationing savings:

The prosperity of a society does not depend only on *how much* savings and capital it has or is in the process of creating but also on *how rationally those savings are channeled into heterogeneous capital goods*. [Emphasis Added]

Greater efficiency also occurs because, as Lachmann (1956 [2011]) observed, higher rates of capital accumulation make possible a greater degree of specialization in the economy’s capital structure, or “division of capital.” This greater division of capital when combined with its improved allocation is precisely what in the Austrian story allows an economy to experience increasing returns to scale and experience sustainable economic growth (Garrison, 2001, p. 62-65). Lachmann (1956 [2011], p. 79) explains:

For Adam Smith the division of labour was the most important source of progress. The same principle can be applied to capital. As capital accumulates there takes place a ‘division of capital’, a specialization of individual capital items, which *enables us to resist the law of diminishing returns*. [Emphasis added]

The second major implication is that the policies that governments apply to the financial sector can have a significant bearing on how well those financial systems

perform these functions. In particular, the Austrian approach highlights the dangers of heavy state interference in financial markets. Much in the same way central banks can distort credit markets and spark the business cycle, government interventions in the financial sector can also negatively impact economic growth. Policies like interest rate ceilings on deposits reduce growth by reducing the supply of savings that the public makes available to banks that they can then intermediate into productive investments. Policies like reserve requirements, interest rate ceilings on loans, barriers to entry in the financial sector and forced lending to the government or certain priority sectors likewise inhibit growth because they short-circuit the knowledge-transmitting function of the price system and, in so doing, hamper the ability of financial entrepreneurs to efficiently allocate resources.⁸ The greater the degree of direct government intervention in credit markets through forced lending controls, the more likely it becomes that society's savings will be allocated by relatively less efficient political criteria; central planning therefore substitutes for the decentralized knowledge of the market. And the greater the repression of bank lending through other types of regulations, the more difficult it becomes for the private financial system to use the dispersed and localized knowledge of its participants to efficiently allocate savings in ways that contribute to sustained economic growth.

The great lesson from the socialist calculation debate and Mises and Hayek's later writings on the dangers of smaller-scale interventions into the market economy is that no central planning agency or government bureau, no matter how good its intentions or intelligent its members, can possibly emulate the allocative efficiency of the free market

⁸ As Selgin (1988, p. 150) notes, "a banking system's contribution to economic growth" is a "function of its efficiency in attracting and investing private savings," which is in large part shaped by regulations.

system in efficiently allocating an economy's scarce resources. The same lesson applies with even greater force with respect to financial markets. No government agency can possibly emulate the success of private financial markets and capitalist-entrepreneurs in allocating credit. The knowledge that is required to determine what investments ought to be undertaken and engage in rational economic calculation is dispersed in the minds of individuals throughout society. Because they tap into the knowledge of individuals throughout society and because these agents have specialized knowledge about various investment opportunities, private financial markets are best equipped to determine which projects should be financed. As Mises (1949 [1996], p. 708) argued, there is no simple substitute for the role that these financial entrepreneurs play in the capitalist economy.

Finance and Economic Growth: A Market Process View

Key Findings from the Finance and Growth Literature

The debate over what role, if any, financial systems play in promoting economic growth and development has a long history within the economics literature. The debate is particularly intriguing for historians of economic thought precisely because over the years economists have held such “startlingly different opinions regarding the importance of the financial system for economic growth” (Levine 1997, p. 1). On the one hand, prominent economists from John Maynard Keynes to Joan Robinson to Robert Lucas have argued that the financial sector merely responds *passively* to changes in the real sector.⁹ Its causal role in the development process, they argue, is greatly exaggerated.

⁹ Joan Robinson (1952, p. 86), for instance, held that development officials should pay little concern to the financial sector because finance is a handmaiden to industry and “where enterprise leads finance follows.” Robert Lucas (1988, p. 6) likewise argued that many economists “badly over-stress” the role of the financial sector. Development economists have historically conveyed their skepticism about the role that

On the other hand, economists from Adam Smith (1776) to Walter Bagehot (1873) to John Hicks (1969) have argued that financial systems play a critical role in the development process. In the 1960s and 1970s, in particular, and starting again in the 1990s a number of financial economists developed a deep theoretical and empirical literature examining whether or not financial development has a significant impact on a nation's overall level of economic development (Goldsmith, 1969; McKinnon, 1973; Shaw, 1973; King & Levine, 1992; Fry, Money, Interest, And Banking In Economic Development, 1988; Greenwood & Smith, 1994). Using case studies and cross-country regression analysis, these economists consistently found that well-developed financial systems played an active and indispensable role in fostering general economic growth and development. Levine (1997, p. 2) summarizes these results:

The preponderance of theoretical reasoning and empirical evidence suggests a positive, first-order relationship between financial development and economic growth. A growing body of work would push even most skeptics toward the belief that the development of financial markets and institutions is a critical and inextricable part of the growth process and away from the view that the financial system is an inconsequential sideshow, responding passively to economic growth. Now that there is a strong consensus amongst economists that the financial sector

has real consequences for economic development, economists have shifted from debating whether finance matters to asking *why* financial systems seem to play such a critical role in driving more rapid economic growth. Levine (1997) provides a detailed summary of the theoretical and empirical work that had been done on the finance-growth nexus in the

financial systems play either downplaying them or by ignoring them entirely. As Levine (1997, p. 1) points out, "a collection of essays by the 'pioneers of development economics,' including three Nobel Laureates, does not mention finance" (Meir and Seers 1984). He further notes that Nicholas Stern's (1989) popular review of development economics "does not discuss the financial system."

late 20th century. Throughout these works, he argues, economists stressed five different “functions” that financial systems perform that directly contribute to economic growth.

First, financial systems accumulate the public’s savings and mobilize a portion of them into loans to finance productive investment projects. This is the function that most closely parallels the standard textbook definition of banking as “accepting deposits” and “making loans.” Without institutions designed to safeguard customer savings and engage in productive financial intermediation, firms would struggle to access the financial capital they need to undergo large-scale investment projects and individuals would have little incentive to provide the savings needed to finance these projects. Second, financial systems facilitate exchange by providing a variety of financial assets and payment services that augment the level of liquidity in the economy and make it easier for individuals and firms to engage in mutually beneficial exchanges. By reducing transaction costs, financial economists stress that financial markets therefore promote a greater degree of specialization in the economy. Third, by issuing a wide variety of transferable financial instruments, financial systems facilitate the trading, hedging, and diversifying of risk. This makes it possible for savers who are more risk averse and less willing to part ways with their liquidity for the extended periods of time needed to finance many major investment projects to provide loanable funds to the banking system that can be intermediated into riskier and long-term investments that might yield higher payoffs without necessarily sacrificing liquidity. Fourth, financial systems economize on the costs of acquiring information about various investments in the economy so that individual savers do not need to invest time and energy to evaluating the economy’s

investment options and can instead specialize in other tasks. By economizing on the costs of acquiring information, financial systems facilitate the acquisition of more information, thereby generating economies of scale in gathering knowledge about investment opportunities. Fifth, financial systems structure contracts and loans in ways that enable them to better monitor managers and exert control over corporate governance.

These five functions, in turn, contribute to economic growth through two primary channels. First, they increase the aggregate *volume* of savings and investment in the economy, thereby generating higher rates of capital accumulation. This is the channel that played an integral part in many early neoclassical models of exogenous growth, which highlighted the role that increasing factor inputs of labor and capital play in the economic growth process (Solow, 1956; 1957; Swan, 1956). In these models, increases in the rates of savings and investment lead to a temporary rise in per capital output. However, because these models assume decreasing marginal productivity of factor inputs, in the absence of technological innovations that raise the productivity of capital and labor the economy tends to converge towards a steady-state equilibrium where per-capita output growth eventually ceases. The source of sustained economic growth and development in these exogenous growth models therefore depends on the rate of technological progress in the economy, which is determined entirely outside the model.

The failure of these exogenous growth models to account for the cause of technological progress, which they ultimately conclude is the engine of sustained economic growth in an economy, led to the development of a new class of growth models that sought to explain the source of technological progress (Romer, 1986; 1990). These

“endogenous” growth models argued that investments in innovation, knowledge and human capital play a significant role in increasing factor productivity; in theory, the productivity increases engendered by these investments could offset diminishing returns to capital, creating a situation of increasing returns that made sustained economic growth possible. In many of these models, financial sectors played a key role in financing these investments. These endogenous growth models thus stressed a second and much more important channel through which finance could contribute to economic development: by improving the *efficiency* of savings and capital allocation, rather than merely increasing the total volume of savings and size of the capital stock (De Gregario & Guidotti, 1995).

Much of the empirical research that has been done in the finance and endogenous growth literature in recent decades has focused on the role that financial systems play in allocating capital to its highest valued use as being the primary driver of technological progress in the economy (King & Levine, 1993; Khan, 2001; Valderrama, 2003). The keys to this improved allocation of capital are the embedded in the five functions outlined above. Because they are better able to economize information about various investment opportunities and because they are better equipped to facilitate the trading, hedging and diversifying of risk so that they can allocate loanable funds to riskier and longer-lasting investment projects that have a higher expected rate of return without forcing savers to sacrifice all of their liquidity, financial sector actors stand at the forefront of process of economic development. Without their specialized knowledge, the economy would be less able to efficiently allocate capital in ways that augment the productivity of the economy’s capital stock. And without their ability to create a variety of financial instruments that

help investors diversify their risk while maintaining the degree of liquidity they demand, many of the economies most profitable investment opportunities would fail to be captured for a lack of resources (Levine 1997). Efficient financial sector intermediation therefore lays the foundation for the increasing returns to investments in successful innovations that lie at the heart of many endogenous growth models.

In terms of what policies best promote financial sector development, one of the most well documented findings in the finance-growth literature has been on the negative effects of government interventions that restrict the ability of the private financial sector to respond to market price signals and allocate credit in the most efficient manner. These restrictive policies that hamper financial and hence economic development are commonly referred to in the literature as “financial repression.” The literature on financial repression dates back to the pioneering work of Ronald McKinnon (1973) and Edward Shaw (1973) in the 1970s. In separate works, McKinnon and Shaw outlined the various ways in which government interventions into the financial system suppressed the financial development and negatively impacted economic growth. The authors indicted a number of policies such as price and interest rate controls, exchange rate controls, high reserve and liquidity requirements, barriers to entry into the financial system (particularly barriers on allowing foreign firms to enter), government ownership of banks and government-mandated lending programs that required banks to lend at below market rates to “priority sectors.” However, McKinnon and Shaw are most famous for their discussion of how interest rate controls (namely, ceilings on both loan and deposit interest rates) suppress financial and hence economic development by reducing savers’ incentive to save and prevent financial

markets from being able to allocate credit to more productive investment opportunities on the basis of market prices (McKinnon 1973, pp. 68-88; Shaw 1973, pp. 80-106).

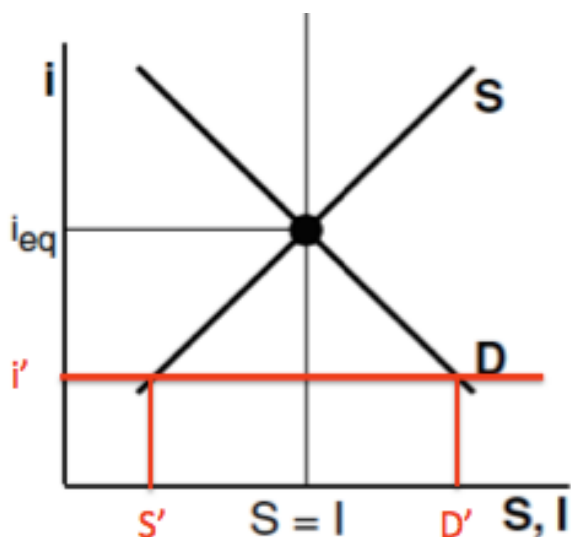


Figure 1 The Market for Loanable Funds

The essence of the McKinnon and Shaw's hypothesis can be illustrated by referring to the market for loanable funds, shown in Figure 1. In equilibrium, the interest rate, i , is determined by the intersection of the supply and demand curves for loanable funds. The supply curve represents the amount of savings, S , that the public is willing to provide at various interest rates; the demand curve represents the demand for investment, I . At the market clearing interest rate, i_{eq} , the supply of the public's savings exactly equals the demand for investment in the economy, so $S = I$. However, if the government imposes a ceiling that holds the interest rate for deposits and loans below their market clearing rates, an excess demand for loanable funds will occur; the public will supply

fewer saving to the banking system while firms and individuals will demand more investible funds than are available at the below-market rate, i' . The result of these price controls is that banks will have to ration the scarce supply of savings according to non-price criteria (Shaw, 1973, p. 92). Typically in developing countries this means that credit is rationed to politically well-connected firms and industries – most notably, the state and other large, favored firms with an extensive credit history – and away from younger, potentially more productive firms (Rajan & Zingales, 1998). These unfavored borrows are thus forced to borrow in informal markets, often at exorbitantly higher interest rates.

The solution to the problem of financial repression in the developing world that McKinnon and Shaw outline and that is most famously associated with their work is for governments to “liberalize” their financial systems by removing these repressive policies, most notably by eliminating interest rate ceilings and other government controls over lending in the economy. Higher nominal interest rates encourage higher savings rates and therefore increase the volume of savings and investment in the economy. And by granting more scope to private banks and investors to direct the flow of investible funds in the economy on the basis of market price signals, they can improve the efficiency of investments by channeling more savings towards the most productive enterprises. Shaw explicitly recognized the importance of allowing price signals to operate in financial markets, noting that “the argument for liberalization in finance is that scarcity prices for savings increase rates of saving [and] improve [capital] allocation...” (1973, p. 121).

In the years since McKinnon and Shaw’s groundbreaking work, a number of scholars have extended their work on to test the effects of financial liberalization across a

number of developing countries (Galbis, 1977; Kapur, 1976; Mathieson, 1980; Fry, Money, Interest, And Banking In Economic Development, 1988). Generally speaking, their results have confirmed McKinnon and Shaw's "financial liberalization hypothesis" – developing countries that have removed interest rate controls, restricted the government's role in allocating credit, lowered barriers to entry to enhance the competitiveness of the financial sector, and brought inflation under control have experienced significantly higher levels of financial deepening and economic growth. These findings highlight the fact that when it comes to economic development, financial systems matter; and when it comes to the financial sector, government policies matter, and the financial systems that most contribute to growth tend to be the one's where the government places strict limits on its ability to intervene (Quintyn & Verdier, 2010). As Rondo Cameron concludes in *Banking and Economic Development* (1972, pp. 24-25):

...where banking was left most free to develop in response to the demand for its services, it produced the best results....These conclusions do not arise from any doctrinaire attitude, but solely from examination of and reflection on historical experience.

Another important related finding that has been well established in the financial-growth literature is that financial systems make their greatest contribution to economic growth and development when they are most free to provide credit to the *private* sector (King & Levine, 1993). That is, countries whose financial systems are required to dedicate a large share of their investment portfolios to state-owned enterprises and government sanctioned investment projects, as was popular in many postwar growth models that argued that the state should play a central role in planning the development process (Harrod, 1939; Domar, 1946; Rosenstein-Rodan, 1943), rather than to private

sector entrepreneurs tended to experience significantly less growth and innovation than countries that placed less restrictions on private financial sector lending. Using data collected from 80 countries over a 30 year time span, King and Levine (1993a,b) find that lending to the private sector is the primary driver of this increased efficiency of investment because the private sector is much more likely to be the source of successful growth-promoting innovations. Levine (1997, p. 32) summarizes these findings:

[F]inancial systems that allocate more credit to private firms are more engaged in researching firms, exerting corporate control, providing risk management services, mobilizing savings, and facilitating transactions than financial systems that simply funnel credit to the government or state owned enterprises. As depicted in Table 1, there is a positive, statistically significant correlation between real per capita GDP and the extent to which loans are directed to the private sector.

Applying Austrian Insights to the Financial Development Literature

Many of the key findings from the financial development literature over the past few decades bear a stark resemblance to the key themes outlined earlier in this paper on the Austrian's understanding of how financial systems contribute to sustainable economic growth. For starters, the empirical and theoretical evidence that has been collected over the past few decades lends strong support to the Austrian claim that financial systems play an important, if not indispensable, role in the process of economic development. In particular, the emphasis on the role that private financial sector actors play in increasing the *efficiency* of investments and capital accumulation in the economy as opposed to merely increasing their total volume is in many ways analogous to the core argument that Austrians made decades earlier dating back to the socialist calculation debate about the superiority of private entrepreneurs relying on market prices in allocating resources over central planning (Kirzner I. , 1971). As Austrians have long stressed, the key to economic

growth lies not so much in how much total investment takes place in an economy but rather in how *efficiently* those investments allocate heterogeneous capital goods and how well they “fit in” to the capital structure of the economy. For Austrians, financial systems are critical because they play a central role in fostering a more efficient “division of capital” in the economy (Lachmann L. , 1956 [2011], p. 84). This division of capital promotes greater specialization and generates increasing returns to both capital and labor, which neoclassical models agree lays the foundation for sustained economic growth.

The findings from the financial-growth literature also support the Austrian idea that entrepreneurs in the financial sector (or financial entrepreneurs, as I have called them here) play a central role in the process of economic growth and development. As noted earlier, the financial system matters for economic growth in the Austrian story not only because it provides aid to market entrepreneurs in the form of financial capital but also because agents in the financial sector serve as *entrepreneurs* themselves who act in an uncertain environment and use their specialized knowledge to identify productive investment opportunities. In the early 1970s, Kirzner (1971) warned that the vast new literature on growth and development “conceals a yawning gap” on the role of the entrepreneur in economic development. In particular, it missed the “capitalist role” played by savers who were willing to postpone consumption to finance longer, capital-intensive investment processes and financial intermediaries who were more likely to possess the localized knowledge of “time and place” that Hayek (1945) stressed lie at the heart of the dynamic efficiency of the market economy. It was by tapping into the

decentralized knowledge of these specialized financial agents that the capitalist system was able to more efficiently allocate investment resources than centrally planned regimes.

Over time, the role of the entrepreneur and in particular the financial sector entrepreneur has begun to receive more attention in the finance-growth literature. Cameron (1963), in particular, highlighted the underappreciated role that bankers play as entrepreneurs themselves who play an essential role in the development process. “Instead of restricting themselves to a purely intermediary function,” Cameron (1972, pp. 7-8) notes, “bankers must actively seek out and exploit profitable undertakings.” It is this process whereby successful financial entrepreneurs are rewarded with profits and unsuccessful ones suffer losses that leads to the discovery of innovative products and new business models and drives the superior dynamic efficiency of market economies. Writing two decades later using empirical evidence from dozens of developing countries, King and Levine (1993a, p. 515) also argued that financial sector entrepreneurs make a direct and significant contribution to economic growth because they “play an active role in evaluating, managing, and funding the entrepreneurial activity that leads to *productivity growth*” [emphasis in original]. In particular, they foster technological innovation and productivity growth by using their specialized knowledge about investments to identify and allocate financial capital to “higher quality entrepreneurs” that have the greatest likelihood of engaging in successful innovations (*ibid.*, p. 540). They conclude that the empirical evidence suggests that Austrians like Schumpeter “may be right” about the vital role that well-functioning banks and financial sectors play in

identifying entrepreneurs who have the best odds of discovering the technological innovations that make sustained growth possible (King & Levine, 1993b).

Another Austrian insight that has been borne out by the empirical and theoretical literature in recent years has to do with the increased productivity of longer or more “roundabout” production processes and the vital role that developed financial systems play in making these large-scale investment projects that are so essential to sustained economic growth possible. Economists who study the relationship between finance and growth have acknowledged that longer, more capital-intensive investment projects tend to be more productive (Levine, 1997, p. 8). Historically, one of the greatest obstacles to financing these time-intensive projects is that savers are often unwilling to sacrifice control of their savings for the long periods of time required to complete these projects. Financial markets therefore played a critical role in making these projects feasible because in addition to pooling together their customers’ savings to finance a diversified portfolio of loans they also created a variety of financial instruments that augmented the liquidity of the financial system and made it easier for investors to diversify their risk to invest in projects with higher expected rates of return (Obstfeld, 1994). These innovations made people more willing to part way with their savings for longer periods and also made it possible for ownership to be transferred in secondary security markets (Bencivenga, Smith, & Starr, 1995).¹⁰ As Hicks (1969, p. 143-145) pointed out, these improvements in financial markets were the primary cause of Britain’s industrial revolution – not specific

¹⁰ Levine (1997, p. 10) explains: “By providing demand deposits and choosing an appropriate mixture of liquid and illiquid investments, banks provide complete insurance to savers against liquidity risk” while simultaneously “facilitating long-run investments in high return projects. Banks replicate the equilibrium allocation of capital that exists with observable shocks.” By significantly reducing liquidity risk, therefore, banks can increase the volume of investment in high-return, illiquid assets and thereby accelerate growth.

technological innovations, since most of these had been discovered years earlier. The industrial revolution was only made possible thanks to the preceding financial revolution.

Perhaps most importantly, Austrian insights regarding how government interventions into private financial markets can disrupt financial and hence economic development anticipated some of the most important and well-documented findings from the financial development literature over the past half-century on the dangers of financial repression and various other types of government interventions in the monetary-financial system. Traditionally, Austrian economics has been associated with its theory of the business cycle, which focuses on cases where excessive credit creation by central banks negatively impacts economic growth by temporarily causing the economy to move beyond its sustainable growth path as investors responding to the distorted interest rate engage in malinvestments that must ultimately be liquidated (Mises L. , 1912 [1981]; 1949 [1996]; Hayek, 1931 [1935]; Rothbard, 1962; Garrison, 2001, pp. 67-76). However, in the development context, their core insights about the role that distortions in relative prices – particularly interest rates, the relative price of time – can play in suppressing economic *growth* can be applied to any intervention that prevents prices from accurately relaying information to producers about consumer time preferences and guiding loanable funds towards their highest valued use (Horwitz, 2000, pp. 72-75; Garrison, 2001, pp. 36-40).

One prominent example of a repressive government intervention highlighted in the finance-growth literature is nominal interest rate controls. Although the adverse effects of these policies might not manifest themselves in the boom-bust pattern identified by the Austrian theory of the business cycle, they are highly likely to distort the

economy's capital structure and hence restrain economic growth (Garrison, 2001, p. 229). In order to highlight the negative consequences caused by interest rate controls and other policies of financial repression, it is helpful to contrast these cases of stifled economic growth with the Austrian explanation of sustainable growth as laid out in diagrammatic form by Garrison (2001, pp. 57-83). Garrison describes two cases of sustainable growth. The first results from technological advances brought about by entrepreneurial discoveries and innovations that allow for a more productive combination of factor inputs or increases in resource availability that might occur as the result of a positive oil shock or any other kind of supply shock (Garrison, 2001, pp. 57-61).

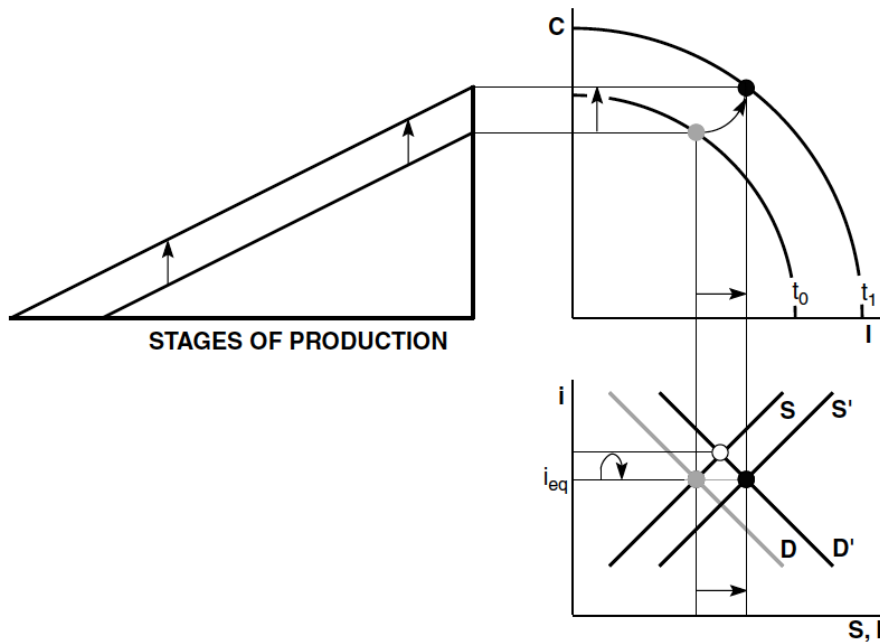


Figure 2 Technology-induced Growth (Source: Garrison, 2001, p. 59)

Figure 2 depicts this technology-induced growth using Garrison's diagrammatic framework. In this simplified instance where the innovation occurs proportionately across all markets, the production possibility frontier (PPF) of the economy shown in the top right panel shifts outward; the hypotenuse of the economy's capital structure in the top left panel shifts outward as the capital stock grows proportionately in value (because the technological advance is assumed for simplicity to occur evenly across all stages); both the supply of and demand for loanable funds curves shift to the right as firms take advantage of these new advances and individuals dedicate a portion of their higher real income to increasing their savings. The case shown here where the economy's PPF shifts outward as a result of real output growth caused by the increases in real productivity due to these new innovations or discoveries is in many ways consistent with the sort of growth process explained by Schumpeter (1942) in his discussion of the entrepreneur as a prime driver of economic growth through the process of "creative destruction"¹¹

The second case of sustainable growth outlined by Garrison corresponds to "savings-led" growth process, where the economy's capital structure and total output increase over time as the result of changes in the intertemporal time preferences of consumers, namely their decision to abstain from current consumption and instead save more of their income in forms that private banks and other types of financial intermediaries can lend out into potentially productive investment opportunities.

¹¹ Boettke & Coyne (2003, pp. 73-74) distinguish the Kirznerian entrepreneur, whose alertness and ability to discover and exploit previously unexploited profit opportunities and more productive ways to combine existing resources pushes the economy from an economically and technologically inefficient point *inside* its PPF to an economically and technologically efficient point *along* its PPF, from the Schumpeterian entrepreneur, whose innovations and technological breakthroughs shift the economy's entire PPF outward. Although only the later is depicted in the top right panel of Figure 2, we can envisage both taking place.

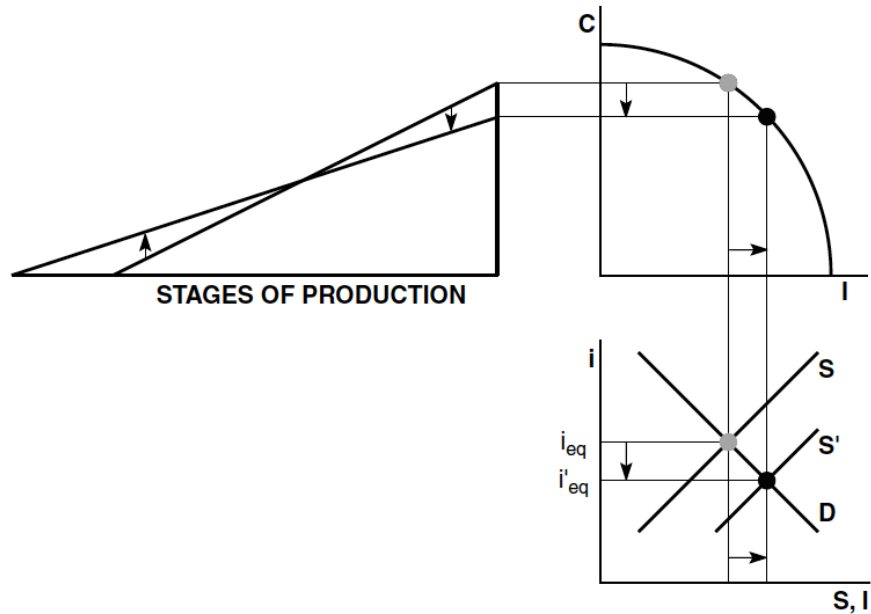


Figure 3 Savings-induced Growth (Source: Garrison, 2001, p. 62)

Figure 3 depicts this savings-led economic growth. Due to the reduction in consumer time preferences, the supply of loanable funds, S , shifts to the right, causing the interest rate to decrease in the loanable funds market shown in the bottom right panel; the economy initially also moves clockwise along its original PPF to the darkened dot where consumer spending has declined and investment spending has risen in response in the top right panel. This reduction in the interest rate also sets off a restructuring of the capital structure of the economy as more investment projects are undertaken in the earlier, often more capital-intensive stages of production relative to the later stages, causing the slope of the hypotenuse of the structure of production triangle to become flatter. Although not pictured here, this shift towards higher investment spending in more “roundabout” or

capital-intensive projects that tend to ultimately yield more output eventually causes the economy's PPF to shift outward and the hypotenuse of the Hayekian triangle to shift outward just as in the earlier case of technology-induced growth.

Although the point is often not explicitly acknowledged, the financial sector entrepreneur discussed in this paper and implicit in much of the recent endogenous growth literature on the contribution of finance to economic growth plays a central role in both of these cases of sustainable growth. In the case of technology-induced growth, one of the main tenants of the finance-growth literature is that technological innovations are typically *not* exogenous; they are most likely to occur in societies where financial sector participants are freer to use their specialized knowledge on prospective investors to allocate savings in ways that enhance the efficiency of the capital stock (Cameron, 1972; Fry, 1988; King & Levine, 1993a,b). By placing scarce financial capital in the hands of market entrepreneurs who are most likely to profitably exploit the division of capital in the economy and find more efficient capital combinations, financial entrepreneurs play an essential role in facilitating the process of technology-led economic growth. And in the case of savings-induced growth, since the economy's savings are not automatically channeled towards its most productive uses it is essential that financial sector actors perform both their intermediary and entrepreneurial role in selecting to finance the investment projects that have the greatest probability of contributing to real economic growth. In both cases, in order for savings, capital accumulation, and innovation to lead to sustained growth it is essential that nations enjoy a stable institutional environment

where governments restrict their intervention into the financial sector enough to allow these financial sector entrepreneurs to efficiently allocate capital and labor resources.

These cases of sustainable economic growth can be contrasted with stifled economic growth that occurs when governments engage in repressive financial policies that impede the market's ability to rely on the specialized knowledge of its agents and market price signals to efficiently allocate credit towards private sector entrepreneurs. As noted earlier, although there are many examples of these policies of financial repression, the most well-documented and historically prevalent case has been the imposition by governments across the developing world of nominal interest rate ceilings on both loan and deposit rates, as highlighted by McKinnon (1973) and Shaw (1973).

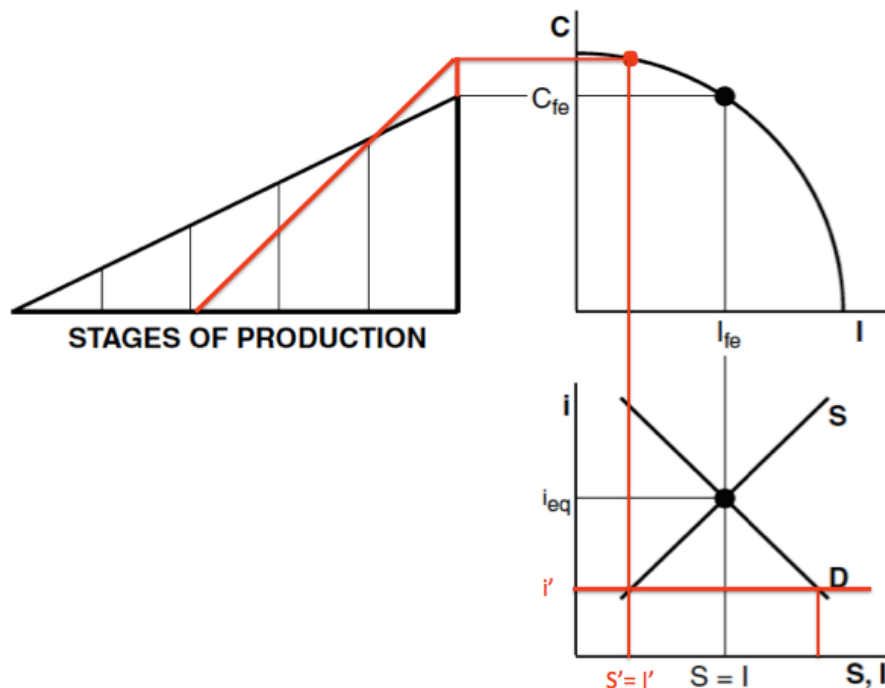


Figure 4 Financial Repression and Stifled Growth

Figure 4 depicts the result of these repressive interest rate controls using Garrison's diagrammatic framework. The ceiling is depicted in the loanable funds market in the bottom right panel as a horizontal line at whatever interest rate the regulators select as the imposed ceiling. At this below-market rate of interest, individuals will supply fewer loanable funds to the banking system, and investors will demand a greater amount of loanable funds. Much like the case in the Austrian theory of the business cycle, the ceiling therefore creates a divergence between the equilibrium (natural) rate and the repressed (market) rate that drives a wedge between the plans of savers and investors: although creditors would be willing to provide more loanable funds at the higher natural rate of interest, they are willing to provide much less at the repressed rate; and although investors would like to borrow much larger amounts of loanable funds at the repressed rate, they are limited to the supply of credit that savers are actually willing to supply at the repressed rate. But unlike the traditional Austrian theory, this divergence need not spark the boom-bust cycle. Since investment is limited by the supply of actual savings available (assuming a closed economy), the short side of the loanable funds market dominates, and measured savings and investment are constrained to S' and I' .

This lower level of investment could have two possible effects on current and future growth, depending on how savers in the economy respond. If savers simply increase their consumption by the amount they otherwise would've saved had the interest rate been allowed to rise to its natural rate, the economy moves counterclockwise up its sustainable PPF, as indicated by the red dot in the upper right panel corresponding to the lower level of investment and higher consumption. This alters the capital structure of the

economy, as shown in the top left panel. Although the shape of the Hayekian triangle might be different than what is shown in Figure 4,¹² the major takeaway is that the structure will diverge from what it would have been in the absence of the intervention, and the reduced financial intermediation and capital maintenance and accumulation that results will dampen future economic growth. On the other hand, if individuals respond to the interest rate ceiling by electing to hoard rather than spend or save a portion of their income (that is, by holding their wealth in outside money balances rather than in inside money balances that can be intermediated by banks), the economy could potentially move inside its sustainable PPF and experience a shrinkage in the overall size of the capital structure and reduced economic growth in the *current* period.¹³

Ultimately, repressive policies such as interest rate controls put a double squeeze on financial and hence economic development. First, they suppress the supply of savings in the economy and hence the total volume of investment and capital accumulation that can be undertaken, which according to exogenous and endogenous growth models and the Austrian theory of sustainable growth reduces the short run growth rate and lowers the overall level of wealth of the economy. Second, and arguably most importantly, the credit rationing that occurs at below-market rates reduces the *efficiency* of investment in the economy by siphoning loanable funds away from their highest-valued use and from the very financial sector entrepreneurs who are best equipped to efficiently allocate these funds. Interest rate ceilings prevent intermediaries from acting as financial entrepreneurs

¹² This might be the case if, for example, the suppressed interest rates induce firms to engage in longer-lasting, more capital-intensive projects that would tend to cause it to kink out along the horizontal axis in the earlier stages. This case is discussed in greater detail below.

¹³ Of course, this is absent any effort by the central bank to counteract the decreased velocity of money by increasing its supply in order to sustain the total level of nominal spending in the economy.

and investing in the younger startups that tend to be the source of more productive innovations and instead tend to benefit government investments and less risky business ventures (Rajan & Zingales, 1998). From an Austrian perspective, interest rate controls handcuff the very “capitalist-entrepreneurs” that serve as the drivers of the efficiency of the capitalist system because they suppress market price signals. Although the stated intention behind these controls might be to make credit more affordable for firms and to encourage industrialization, they tend to disproportionately harm the small- and medium-scale enterprises that they’re purportedly designed to help.¹⁴

Artificially low interest rates also hamper economic growth by enticing firms to overinvest in longer-lasting and more capital-intensive projects at the expense of labor-intensive projects that in the absence of these administered rates might be more profitable (McKinnon 1973, p. 9). As Shaw (1973, p. 11) points out, one of the common problems in developing countries that impose interest rate restrictions is that “investment flows to capital-intensive production even though capital is scarce and labor is plentiful.” Although Austrians emphasize the important role that capital accumulation plays in promoting economic growth, when interest rates are held artificially low they divert resources into capital-intensive industries. As a result, the capital structure is distorted, and the economy remains stuck on a lower growth path than it would experience if entrepreneurs were permitted to allocate funds in accordance with market price signals.

¹⁴ As Shaw (1973, p. 86) notes, “banks and others keep a privileged place in their portfolio for established borrows” and “they have little incentive to explore new and less certain lending opportunities” that tend to be the greatest source of innovation and sustained economic progress. McKinnon (1973, p. 75-77) likewise notes the damage that is done to younger and smaller-scale industries by these price controls. He concludes: “there appears to be no economical substitute for expanding the role of organized finance in small-scale lending to indigenous entrepreneurs ” (*ibid.*, p. 77).

Although this section has focused on interest rate controls, the ultimate effect of the litany of other financial sector interventions that McKinnon and Shaw point to is quite similar: the financial sector remains repressed and the economy fails to achieve its potential growth. Although many authors in the financial-growth literature have empirically verified the negative effects of these repressive policies, the Austrian approach outlined in this paper provides a useful theoretical lens for understanding the role that the financial system and in particular financial sector entrepreneurs play in promoting sustainable growth.

Conclusion

This paper has two major takeaways. The first is that the Austrian approach is uniquely well suited to explain the variety of ways that well-developed financial systems directly contribute to economic growth. Financial systems matter in part because they increase the total volume of savings and investment in the economy and make possible investment in longer, more “roundabout” production methods that tend to be more productive, thereby contributing to greater capital accumulation. But the primary channel through which finance contributes to growth is by enhancing the *efficiency* of investment. They do so by drawing on the dispersed knowledge of individuals who have specialized knowledge about various investment opportunities throughout the financial sector to allocate resources in a manner that is far more efficient than any government agency could achieve. Austrian scholars especially emphasized the key coordinating role that financial sector actors play in an economy. For Austrians, bankers and other financial market participants are not passive agents to be downplayed or neglected. They play a

critical role in the market process, not only as financial intermediaries in coordinating the plans of savers and investors but also as *entrepreneurs* who use their skills and specialized knowledge of various investment decisions to place financial capital in the hands of entrepreneurs whose plans have the greatest chance of satisfying consumer demand.

The Austrian emphasis on the heterogeneity of capital also factors importantly into this analysis. By financing entrepreneurs whose plans prove to best fit the existing capital structure of the economy, private financial markets can augment the marginal efficiency of capital, thereby leading to higher rates of economic growth. In many ways, the key findings of early Austrian scholars anticipated many of the most important findings in the financial development literature and the endogenous growth literature on the channels through which financial systems contribute to sustained economic growth by augmenting the efficiency of investment and capital accumulation.

The second major takeaway is that government policies play a critical role in determining how well the financial sector will be able to contribute to economic growth. Most notably, government interventions that disrupt the functioning of the price system in financial markets such as interest rate controls will have a negative impact not only on the development of the financial sector but also on economic growth. McKinnon and Shaw's influential work on the dangers of "financial repression" and benefits of "financial liberalization" and the subsequent empirical evidence that has been collected on these topics provide compelling evidence of the Austrian insight that financial development is most likely to occur in countries where governments do the least to

interfere with market prices and the natural workings of the financial sector. But in order to be successful and engage in rational economic calculation, it is critical that financial entrepreneurs be allowed to operate in a true market setting with as little government intervention as possible where they can access the information from relative price signals that they need in order to most efficiently allocate resources.

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CHAPTER TWO: ACHIEVING INCLUSIVE FINANCIAL DEVELOPMENT: THE SUCCESS OF THE ENTREPRENEURIAL APPROACH IN SUB-SAHARAN AFRICA

Introduction

What is the best way for developing countries to achieve inclusive financial sector development? Economists today largely agree that deeper and well-developed financial systems play a critical role in reducing poverty and promoting sustainable economic development (Levine, 1997). Over the past decade or so, the discussion has increasingly focused on *financial inclusion*, or what policies are best suited to expand access to formal financial services to local entrepreneurs and broader segments of the population in the developing world (Demirguc-Kunt, 2014; World Bank, 2014; Chibba, 2009).

In 2008, the World Bank released *Finance for All*. The report provided the first comprehensive attempt to collect indicators of financial access around the developing world and identify the barriers that prevent millions of individuals and small firms from having access to formal financial products. Although the report does acknowledge that governments across the developing world have largely failed in their prior efforts to achieve greater financial inclusion to date, it nevertheless places the state at the center of its financial inclusion agenda. In 2010, the World Bank launched the Universal Financial Access (UFA) initiative, where 55 governments across the developing world agreed take a leading role and set national strategies to achieve universal financial access by 2020. World Bank President Jim Yong Kim opened the 2013 World Bank/IMF Annual

Meetings by issuing a bold prediction: “Universal access to financial services is within reach...If [member countries] fulfill their commitments, and if [other governments] also set bold targets...then we can reach universal access by 2020.”¹⁵

Many developing nations have, in fact, experienced sharp declines in their rates of financial exclusion over the past decade. Between 2010 and 2013 alone, the World Bank (2013, p. v) reported that the number of individuals in the developing world who lacked access to formal financial services fell by more than 20 percent from 2.5 billion to less than 2 billion. Yet contrary to what many development officials might predict, these results have not been achieved thanks to government-led financial inclusion initiatives or more enlightened planning by state officials or regulators. The driving force behind these unprecedented advances has instead come from private sector entrepreneurs who have developed innovative new products that cater directly to the poor and unbanked in response to a series of deregulations that certain developing countries enacted that created a more fertile and welcoming environment for these entrepreneurial innovations.

The region that has experienced the greatest advances in financial inclusion in recent years is Sub-Saharan Africa (SSA). In 2008, less than one in five adults in SSA had an account at a formal financial institution (World Bank, 2008, p. ix). By 2014, more than 34 percent of adults had gained access to formal financial services, with millions more being added each year (World Bank, 2014). The biggest driver of these results has been the recent surge in mobile banking accounts that have come about as part of the

¹⁵ In 2009, the *Alliance for Financial Inclusion* (AFI) was launched to bring together regulators, development officials, and central bankers from around the world to help design policies to better promote financial inclusion. The AFI’s efforts culminated in the issuing of the Maya Declaration in 2011, where regulators and central bankers from 42 developing countries vowed to make universal financial inclusion a top policy priority and set concrete financial inclusion targets for their respective countries.

“mobile money revolution” (World Bank, 2015). Mobile money is a digital payment platform that enables anyone with a cell phone to cheaply send and receive payments around the country and deposit or withdraw cash from thousands of MNO or bank-sponsored “agent” branches located in retail shops and small kiosks across the rural countryside. Taken together, the innovation of mobile money and its associated agent or “correspondent” banking model have contributed to the most rapid surge in financial inclusion that the developing world has ever experienced. According to the GSMA (2015), there are more than 411 million mobile money accounts connecting the formerly unbanked to formal financial services across the developing world. More than half of these mobile money accounts – roughly 220 million – are located in SSA.

The enormous success of the mobile money revolution (MMR) in SSA warrants special attention because it runs directly counter to what many development officials have advised over the years about the critical role that governments should play in resolving the market’s alleged failure to achieve inclusive financial development (World Bank, 2013, pp. 3-4). The MMR shows that the greatest strides towards achieving inclusive financial development have come from nations that have moved away from the state-led approach to financial development and embraced a more market-led approach to financial development. By removing the state’s role as the central player and restricting its role to that of removing repressive regulations and providing an enabling regulatory environment that encourages market entrepreneurs to experiment with innovative ways of serving the unbanked, this approach has succeeded by placing private entrepreneurs at the center of the development process. In this sense, the MMR provides a compelling case

study in one of the major insights that scholars have learned over the years regarding the important role that institutions that protect private property and promote market competition play in giving entrepreneurs the incentive to engage in productive activities that help bring about inclusive economic development, more generally (Baumol, 1990; Boettke & Coyne, 2003; Bauer, 2004; Minniti, 2008; Elert & Henrekson, 2016).

This paper proceeds as follows. In section 2, I survey the history of various state-led financial development initiatives in the developing world in the postwar era. I pay special attention to SSA in its post-independence era since it has served as an illustrative case study of the state-led approaches to achieving inclusive financial development. Section 3 discusses various market-led approaches to financial development over the years with a special emphasis on the mobile money revolution in SSA. Section 4 concludes with some implications for researchers and policymakers.

The State-led Approach to Financial Development

Postwar Approaches to Financial and Economic Development

In the years immediately following World War II, the dominant view in the burgeoning field of development economics was that in order for a nation to escape poverty its government needed to play a central role in allocating the society's resources and crafting its national development priorities. This state-led approach to economic development was echoed across many of the leading growth theories of the early postwar era from the Harrod-Domar model (Harrod, 1939; Domar, 1946) to the Rosenstein-Rodan's "big push" theory (Rosenstein-Rodan, 1943) and Leontief's "input-output analysis" (Leontief, 1966).

One of the unifying themes of the Harrod-Domar model, the big push theory, and other early postwar theories was the idea that absent ample foreign aid and extensive government control over the economy developing nations would be mired in an “under-investment trap” (Myrdal, 1957).¹⁶ Workers in the developing world suffer from low wages, which in turn implies that these nations are unable to internally generate the savings and investment they need in order to accumulate more and better capital that could then augment worker productivity and raise wages. The resulting low rates of economic growth perpetuate the vicious cycle of poverty. The only way to escape this trap, according to these early theories, was for foreign governments to provide enough financial aid to fill the investment gap and for domestic governments to play a central role in allocating the economy’s savings into capital investments that were consistent with its overarching development plan (Dorfman, 1991; Rostow, 1990; Meier, *From Classical Economics to Development Economics*, 1994).

Although the crude version of the Harrod-Domar model and other early growth theories largely fell out of fashion decades ago, the idea that domestic governments should play an integral role in marshaling society’s savings in accordance with their national economic plans persisted for decades in the works of development agencies like the IMF and the World Bank (Jolly, Emmerij, Ghai, & Lapeyre, 2004). Their influence was especially apparent in the World Bank’s “financing gap” model, arguably the most

¹⁶ Rosenstein and Rodan (1943, p. 204) explained this problem by comparing the process of economic development to the process of getting an aircraft into flight: “There is a minimum level of resources that must be devoted to... a development programme if it is to have any chance of success. Launching a country into self-sustaining growth is a little like getting an airplane off the ground. There is a critical ground speed which must be passed before the craft can become airborne.” Once there are sufficient investment resources available in the economy, it is the government’s job to efficiently allocate those funds towards the capital investments that are most capable of spurring sustainable growth. See: Meier (1994).

popular growth model of the postwar era (Easterly, 1997). Because heavy state control over the allocation of savings and investment in society was seen as a necessary condition for development, heavy state control over the financial sector was widely regarded as a critical tool in the state-led planning apparatus (Manish & Powell, 2015, pp. 709-710). In this view, leaving the financial sector to market forces would invariably leave the economy vulnerable to short-term fluctuations in credit and an insufficient allocation of credit to priority sectors. Because private financial markets are plagued by “market failures,” there are “many reasons for an active role of the state in finance” (World Bank, 2013, pp. 3-4). By enlisting the government as the lead player in the financial sector, developing nations could ameliorate these failures by reducing financial volatility, as Keynes (1936 [1973]) argued, and a providing more efficient allocation of savings and capital investment, as proponents of national economic planning argued (Lange, 1967).

Although Keynesian and state development planning arguments provided critical rationales for the high degrees of government intervention in the financial sector, one of the most common rationales for these interventions that was cited by state officials and policymakers across the developing world was the idea that private (particularly foreign-owned) banks lacked any incentive to invest in or extend financial services to local business or the poor and unbanked segments of the domestic population (Brownbridge & Harvey, 1998; Beck, Demirguc-Kunt, & Levine, 2007; World Bank, 2008). From a business perspective, critics contended, it was simply not economical for private banks to build branches and extend service to poor areas and remote rural regions. Any trivial revenues they might gain from accumulating small-scale deposits and issuing what would

invariably be risky loans in these areas would be swamped by the prohibitively high costs of building and operating physical branches in remote rural regions, maintaining ample liquidity to be able to absorb domestic shocks, facilitating thousands of small-scale transactions, and gathering whatever scarce information they could about prospective borrowers in the absence of extensive credit registries. Absent extensive state ownership and/or compulsion to serve these customers, it was argued, the private financial sector would be either unwilling and unable to meet the needs of the vast majority of the local population who could benefit the most from formal payment and banking services.

Post-Independence Africa as a Case Study in the State-led Approach

Perhaps no region experimented more thoroughly with the state-led approach to both financial sector and economic development than SSA in its post-independence era. After breaking away from their colonial rulers, many newly independent African nations embarked on extensive financial sector interventions in the 1960s and 1970s. Across the continent, governments established their own commercial banks and development finance corporations (DFCs) and either outlawed or raised significantly the barriers to entry for foreign-owned banks, imposed strict credit controls to pressure banks to lend to state-owned corporations and limit their lending to foreign firms, implemented nominal interest rate controls to encourage local investment and subsidize favored borrowers, and established exchange controls to force residents to invest their savings in domestic assets (Brownbridge & Harvey, 1998, pp. 4-5). In socialist countries like Ethiopia, Mozambique, and Tanzania, the financial sector was completely nationalized and

government-owned banks held a complete monopoly on the provision of financial services (*ibid.*, p. 3).

The stated rationale behind these widespread interventions into the financial sector was two-fold. First, governments argued that they needed to have greater control over the financial sector so that they could allocate credit towards certain “priority sectors” whose expansion was seen as being essential to meeting their national development objectives (Fowowe, 2013, p. 18). Consistent with the teachings of development economics in the early postwar era, many government officials “viewed the domestic financial system simply as an instrument for state planning” (White, 1993, p. 2). This provided the intellectual basis for the nationalization of many private banks and the proliferation of DFCs across SSA in the 1960s and 1970s. Second, and perhaps most importantly, many government officials complained that private banks demonstrated little interest in investing in domestic firms and expanding the reach of its services into poor, rural areas (Brownbridge & Harvey, 1998, pp. 206-209). The lending policies of foreign banks drew the particular ire of many newly established SSA governments who accused them of discriminating against local citizens. Many governments imposed allocative controls and rural branching requirements on foreign banks to ensure that they extended credit and other financial services to previously underserved segments of the population like rural farmers. Brownbridge and Harvey (1998, p. 4) summarize this objective:

The primary objective of the reforms was therefore to fill the financing gaps which were perceived to exist because of prejudice on the part of foreign banks, the absence of appropriate financial institutions, and market failures.

The results of these extensive government efforts to engineer inclusive financial and economic development in a top-down fashion proved to be a major disappointment.

Heavy government intervention and control over the financial sector did nothing to achieve the stated objective of expanding credit to small farmers and microenterprises or fostering greater financial inclusion. Instead, it led to reduced savings and a significant shallowing of the private financial sector, an inefficient allocation of credit towards politically favored firms and industries, and rampant bank failures and large-scale financial crises that necessitated expensive taxpayer bailouts (Fowowe, 2013, pp. 18-19). Brownbridge and Harvey (1998, p. 201) summarize SSA's experience with the state-led approach to financial sector development in the post-independence era:

Governments therefore intervened extensively in their financial sectors, redirecting the flow of credit, reducing interest rates, and creating financial institutions to provide longer-term finance [to the government and underserved segments of the population]. These financial sector reforms were at best ineffective...At worst, they caused immense and costly damage: credit went to unproductive uses, loans were not repaid, banks became insolvent on a massive scale, and could not even provide the previous level of low financial services. "Overall," Brownbridge and Harvey conclude (*ibid.*, p. 201), these large-scale

state interventions "produced something much worse than what was inherited from the colonial period." One of the key negative unintended effects of these interventions was that because they weakened the financial sector and prevented banks from allocating credit on the basis of market-determined interest rates credit actually became even *less* accessible for domestic firms and borrowers in many SSA countries. Invariably, the nations that experienced the most extensive government interventions suffered the worst damage to their banking systems (Brownbridge & Harvey, 1998, p. 201; Allen, Otchere, & Senbet, 2011; Beck, Senbet, & Simbanegavi, 2015). The cascade of insolvencies created by the post-independence era financial interventions proved to be a microcosm of

the more general problems associated with state-led development efforts throughout SSA.

Ayittey (2008, p. 150) summarized the negative effects of these state-led reforms:

In short, the state-led development approach that spurned market processes impeded Africa's economic progress in the postcolonial period. Heavy-handed state interventionism...set the stage for a vicious cycle of state interventionism. By the late 1980s, the vast majority of SSA economies were mired in severe fiscal

and economic distress. Faced with enormous fiscal imbalances after engaging in large-scale bailouts of government-owned banks and significant capital flight, many no longer had the option of relying on foreign aid to cover their losses. After years of supporting a variety of government interventions into the financial sector, even the World Bank in its influential "Berg Report" recognized that the ongoing financial crises that many countries were experiencing combined with the abject failure of these state-led initiatives to spur any semblance of financial or economic development warranted a new approach to that relied less on government control and more on market forces (World Bank, 1981).

Market-led Approaches to Financial Development

The failure of state-led financial development in SSA and other parts of the developing world in the postwar era has led many economists to rethink the way they approach the question of how best to achieve inclusive financial development. Since the 1990s, the "Old Approach" of assuming that markets would fail to promote inclusive development and granting the government enormous control over the financial development process has steadily given way to a more market-oriented approach to achieving inclusive financial development (White, 1993, p. 2). This "New Approach" places a much greater emphasis on the private sector's ability to meet the needs of all citizens in the developing world under the right institutional environment. The key to this

“market-led” approach lies in making sure that governments restrict their involvement in the financial sector and instead focus on removing repressive regulations that suppress competition and make it prohibitively costly for private firms to extend financial services to the poor. This section outlines the origins of this market-led approach and how it has evolved over time to emphasize how private entrepreneurs can help achieve the goal of financial inclusion.

History of the Market-led Approach to Financial Development

The great surge in interest in market-oriented approaches to financial development can be traced back to the influential writings of Ronald McKinnon and Edward Shaw in the late 1960s and early 1970s. In separate works, McKinnon (1973) and Shaw (1973) combined theoretical analysis with ample empirical evidence from the developing world to argue that the greatest obstacle to financial sector development in the developing world most often stems from misguided though perhaps well-intentioned government interventions.¹⁷

Although most scholarly attention has focused on their arguments about the adverse effect of nominal interest rate ceilings have on savings and investment in LDCs, McKinnon and Shaw outlined a variety of other “repressive” policies that have the effect of distorting market price signals and stunting the development of the financial sector (see, for instance, McKinnon 1973, pp. 68-88; Shaw 1973, pp. 80-106). These policies

¹⁷ McKinnon (1973, p. 2) explains that: “the inadequate economic performance of many LDCs” can be attributed not to any lack of real resources or insufficient state control over the industrialization process but rather “to repressive, though understandable, economic policies that they themselves have pursued.” Shaw (1973, p. 3) likewise argues that even if the intentions behind these interventions are benign when the financial sector is “repressed and distorted, it can intercept and destroy impulses to economic development.”

include the establishment of government-owned banks and DFCs, forced credit allocation policies imposed on private banks, high barriers to entry to the banking sector (especially for foreign banks), high reserve requirements, and exchange controls. As noted in the previous section, no region of the developing world experimented as heavily with these interventionist policies as SSA. With few exceptions, African governments enacted sweeping reforms aimed at curbing the autonomy of the private financial sector and handing greater control over to state-owned banks and development agencies.

The most damaging consequence of these policies of “financial repression,” McKinnon and Shaw argued, is that they lead to the “shallowing” of the financial system (typically defined as a low ratio of financial assets, particularly *privately*-issued financial assets, to GDP). Nominal interest rate ceilings on bank deposits have the effect of dampening the incentive of individuals to save, thereby reducing the amount of loanable funds that are available in the economy. Interest rate ceilings on bank loans as well as forced credit allocation policies imposed by domestic governments that require banks to dedicate a certain share of loanable funds towards priority sectors and public investments likewise preclude banks from allocating these scarce financial resources to their highest valued use. By preventing market forces from guiding the economy’s allocation of resources and placing such a large share of financial intermediation in the hands of public officials, these policies starve local businesses and entrepreneurs of the financial capital they desperately needed to attain physical capital and increase their productivity. This, in turn, hampered the financial system’s ability to contribute to sustained economic growth. As Shaw (1973, p. 3-4) concluded, these state-led “development strategies” and

“distortions of financial prices” primarily served to “reduce the real rate of growth and the real size of the financial system... gravely retarding the development process.”

The solution to the problems created by these repressive regulations, McKinnon and Shaw argued, was fairly straightforward: governments in the developing world should embark on a far-reaching program of “financial liberalization.” These liberalizing reforms most notably included bringing inflation under control, deregulating interest rates, getting rid of government credit allocation and forced lending controls, ending exchange controls and other restrictions on foreign trade, and reducing the barriers to entry that contributed to the lack of competition in the financial sector (McKinnon 1973, p. 89-116; Shaw 1973, p. 113-147). The most essential element of these reforms, however, was to circumscribe the government’s role in the financial sector and augment the role that the private financial sector played in allocating resources to the most promising investments.

McKinnon and Shaw’s conclusions regarding the dangers of heavy state control in the financial sector and importance of allowing market forces to operate were corroborated by a number of other contemporaneous authors. In his edited volume on *Banking in the Early Stages of Industrialization* (1968), for instance, Rondo Cameron collected historical evidence on the contribution of the financial sector to economic development in a number of western nations in their early stages of industrialization. He notes that even though the “majority opinion” amongst development economists in the postwar era in particular was decidedly against free competition in banking that based on the historical evidence “there is no historical justification whatever” for extensive

government control over the financial sector (*ibid.*, p. 313). “On the contrary,” Cameron concluded, “insofar as the criterion for judging bank performance is the contribution of banks to growth, the best results have been achieved where competition was freest and most unfettered.” In his second edited volume *Banking and Economic Development* (1972) incorporating more historical case studies from the developing world, Cameron affirmed his earlier finding that “where banking was left most free to develop in response to the demand for its services, it produced the best results” (*ibid.*, p. 25). He concluded:

Restrictions on freedom of entry almost always reduce the quantity and quality of financial services available to the economy, and thus hinder or distort economic growth. Competition, on the other hand, acts as a spur to the mobilization of idle financial resources and to their efficient utilization in commerce and industry. Over the past few decades, these findings on the connection between liberalized

financial systems and more rapid financial and economic development have been corroborated by a number of other authors. Some of the more prominent examples include the historical work done by economists who have documented the record of relatively lightly regulated, or “free banking,” systems that existed during the 18th and 19th century.¹⁸ Using evidence from a number of historical free banking episodes, these authors generally conclude that these less regulated systems enjoyed superior economic performance relative to their more highly regulated counterparts. Not only did they enjoy greater competition and innovation, but they also managed to do a better job of avoiding financial crises (White, 1984; Schuler, 1988; Selgin, 1988; Dowd, 1992; Briones & Rockoff, 2005). Starting in the 1990s, many economists began conducting empirical

¹⁸ Dowd (1992, p. 2) argues that these historical free banking systems can generally be classified as having “at least a certain amount of bank freedom, multiple note issuers, and the absence of any government-sponsored ‘lender of last resort.’” There were more than 60 such episodes of plural private note issue in the 19th century alone (Schuler 1992). Some prominent examples include Scotland, Canada, and Sweden.

studies using more recent data from the developing world to determine whether and how financial systems contributed to economic growth. The vast majority of these studies concluded not only that financial systems matter for development, but that the degree to which they contribute to an economy's growth is positively linked to how much credit is issued by private sector banks to firms in the private sector, as measured by the ratio of private credit to GDP (King & Levine, 1993; Levine, 1997; Fry, 1995).

Stage One: Limited Financial Liberalization in SSA

The growing recognition of the failure of state-led development and the benefits of McKinnon and Shaw's arguments for financial liberalization, in particular, over the ensuing decades by development advisors at the World Bank and the IMF provided much of the inspiration behind the market-oriented financial reforms that were included as part of the structural adjustment programs (SAPs) in SSA. Beginning in the late-1980s, many governments across SSA began to adopt policies designed to curb the government's influence over the economy and augment the role of market forces. Although the focus of these early reforms was not initially on the financial sector, beginning in the early-1990s many nations began deregulating certain aspects of their financial sectors. These reforms included a reduction in government-directed lending initiatives to make more credit available to the private sector, higher nominal interest rates to increase bank deposits and make more savings available for bank lending, the licensing of more banks to promote market competition, and the restructuring of insolvent government banks and development finance corporations (Brownbridge & Harvey, 1998, p. 6).

Despite encountering some early obstacles due to the lingering effects of malinvestments in government projects during the state-led era, most economists who have empirically examined the effect of these market-oriented reforms have concluded that they have contributed to financial deepening and increased competition in the banking sector, as well as to Africa's more recent run of financial stability and fairly strong economic growth relative to the early post-independence era (Fowowe, 2008; 2013; Murinde, 2012; Ahmed, 2010; Hassan, Sanchez, & Yu, 2011; Lee & Chang, 2009). Between the early-1990s and the 2010, the median ratio of bank deposits to GDP in SSA more than doubled from less than 15 percent to roughly 32 percent; the median value of liquid liabilities to GDP likewise doubled from less than 10 percent to 22 percent, and median private credit to GDP rose from less than 10 percent to roughly 18 percent (Beck & Cull, 2013, p. 7). Inflation and exchange rate volatility also improved markedly in most countries, although the degree of success they achieved usually depended on how sincerely these reforms were adopted (Beck et al., 2011; Allen, Otchere, & Senbet, 2011).

Despite the progress that many SSA nations have made since embarking on these liberalizing reforms, Africa's financial system still lags far behind other developing nations (Demirguc-Kunt & Klapper, 2012; 2014; IMF, 2013; KPMG, 2014). Although financial deepening has improved markedly since the liberalization movement began, the region's ratio of bank deposits, liquid liabilities, and private credit to GDP are still, on average, roughly 30-50 percent below other developing nations (Beck & Cull, 2013, pp.

6-7)¹⁹. These shortcomings are particularly evident with respect to the issue that provided one of the biggest rationales for the large-scale post-colonial interventions: *financial inclusion* (IMF, 2013, p. 13). According to World Bank (2008), one in five adults in SSA still lacked access to a formal bank account in 2008. As of 2010 there were only 15 bank accounts for every 100 adults in the median African country, compared to 42 outside Africa; moreover, there were 3.1 branches per 100,000 adults in Africa as opposed to 10 outside Africa (Beck & Cull, 2013, p. 8). This financial exclusion is also evidenced by the low rate of private firms that report having access to formal financial services. In the median SSA nation, only one in five firms report that they have a line of credit from a formal financial institution, compared to 43 percent outside Africa.

In response to the continuing inability of African banks to provide services to the vast majority of the poor and unbanked population, a number of nonprofit microfinance initiatives rose to prominence in SSA in the 1990s and 2000s. By relying on new business models such as group (or “solidarity”) lending programs that would enable groups of borrowers to jointly guarantee a loan repayment without having to put up costly (and oftentimes prohibitively high amounts of) collateral, many scholars and development officials felt these programs were the long awaited solution to the problem of expanding financial access and fill in these gaps in the financial market in rural, low-income areas (Yunus, 2003). Between the founding of the Grameen Bank in 1976 and the height of the microfinance movement in 2007, more than 150 million clients worldwide had used the

¹⁹ Beck and Cull (2013, p. 6) report that the median non-African LDC has liquid liabilities of 47 percent of GDP, compared to only 32 percent on average in Africa. The median deposit to GDP ratio is only 25 percent in Africa compared to 38 percent in LDCs outside Africa. The median private credit to GDP ratio is only 18 percent in Africa compared to an average of 34 percent in other LDCs.

services of microcredit institutions; although it had much lower MFI penetration rates than Asia, microfinance penetration in SSA peaked out at 16.5 million customers in 2008 (Hamam & Schwank, 2011). Indeed, much of the literature on development finance over the past few decades in SSA and other parts of the developing world that suffer from low rates of financial inclusion has focused on these microfinance initiatives (Gupta, 2008).

Microfinance institutions (MFIs) have undoubtedly achieved some good for the poor in many parts of SSA. However, considering the lofty promises made by many microfinance proponents early on about their potential to transform rural economies and expand financial services to millions of unbanked citizens, these programs largely failed to achieve their goal of eliminating or at least significantly reducing financial exclusion (World Bank, 2008, p. 13). As critics have noted, these underwhelming results were due to a variety of factors, most notably their continued inability to become financial self-sufficient and the high interest rates that microfinance firms had to charge in order to remain remotely profitable (Morduch, 1999; Chamlee-Wright, 2005; Boudreaux & Cowen, 2008). The general consensus amongst economists today is that although MFIs might play a useful role in improving financial access on some margins, they are not a “magic bullet” for solving the problem of financial exclusion (Hamam & Schwank, 2011).

Achieving Financial Inclusion: The Entrepreneurial Approach

Given the failure of various state-led and nonprofit-led initiatives to increase financial inclusion across SSA over the preceding decades, more scholars became receptive to the idea that the private sector had an important role to play in reducing

financial exclusion. Yet despite the relative success the limited financial liberalization that many SSA countries enacted had on strengthening the private sector and deepening financial systems, these reforms did very little to increase the public's access to private banking services.

Private banks have historically struggled to overcome two primary barriers to being able to profitably expand their services to unbanked regions. The first stems from the litany of *economic* factors that have made servicing the poor in SSA an unprofitable proposition (Demirguc-Kunt & Klapper, 2012, pp. 7-8; IMF, 2013, pp. 13-14; World Bank, 2008, pp. 5-6). It is extremely costly for banks to incur the upfront and ongoing costs of building bank branches and providing even the most basic banking services in remote areas. The small size of many of these economies and relatively trivial amount of savings that its residents can provide banks often poses insurmountable obstacles for bankers (Beck, Maimbo, Faye, & Triki, 2011, p. 17). Even if a bank could avoid the large upfront costs of establishing a bank branch, it is highly unlikely that the small amount of savings that domestic citizens may provide would enable it to cover the high day-to-day operational costs of processing payments. These problems are compounded by the fact that low-income areas tend to be highly risky investment environments that are extremely susceptible to regional economic shocks. This is especially true in agricultural-intensive areas, where one bad harvest could wipe out a debtor's entire source of income. Moreover, many poor citizens work in the informal economy and have no form of formal documentation that banks can rely on to develop credit-scoring registries. This combination of high costs and high risk with the relatively minimal amount of revenue

these clients could generate has historically meant that large segments of the African population are simply “not commercially viable customers” (Beck & Cull, 2013, p. 3)

The second and perhaps most important barrier to financial inclusion stems from government regulations that substantially raise the costs of servicing the poor. Perhaps the most well-documented are the strict “know your customer” (KYC) and anti-money laundering (AML) laws that governments impose on their banks requiring customers to provide ample documentations in order to open an account (De Koker, 2006; Noor, 2013; Financial Action Task Force (FATF), 2012). One of the perverse consequences of these regulations has been to make it impossible for banks to open small-scale bank accounts for poorer customers in rural areas who are less likely to possess an official ID or have any sort of documented credit history (Beck, Maimbo, Faye, & Triki, 2011, pp. 60-61). Another policy-induced obstacle to financial inclusion is that many governments impose heavy barriers to entry in the banking sector that strictly limit competition and make it difficult for firms that are not politically well connected to operate. This problem is particularly acute in SSA, where governments have historically been very reluctant to grant charters to foreign-owned banks (Allen, Otchere, & Senbet, 2011). Perhaps most importantly, most governments around the developing world have been unwilling to allow competition in the banking and payment sector from non-traditional providers that might have a comparative advantage in reaching low-income customers (The Economist, 2012). Because these regulations serve to restrict competition in the banking sector and make it prohibitively costly for banks and entrepreneurs to find innovative ways to

cheaply access poorer customers, they constitute less recognized forms of financial repression with respect to expanding financial inclusion (Demirguc-Kunt, 2014, p. 353).

For decades, the combination of these economic and regulatory barriers has prevented private banks and entrepreneurs from being able to make any significant progress towards reducing financial exclusion in SSA and across much of the developing world. Fortunately, identifying these historical obstacles points towards a possible path forward. To the extent financial exclusion is the result of policy-induced factors such as regulations that restrict competition in the banking and payment sector that raise the costs of serving poor customers, substantial progress can be made by simply loosening or eliminating these restrictions and allowing more firms including nontraditional banking and payment service providers to enter the industry. The key to bringing about a market-led expansion of financial inclusion in this approach rests not on viewing financial exclusion as inescapable “market failure” that requires heavy regulation or top-down state planning or control. Instead, it rests on governments shifting their focus towards simply establishing an enabling regulatory environment that invites competition and gives private entrepreneurs the ability and incentive to use their specialized knowledge to create radical – even “disruptive” – innovations that make it possible to them to tap into the pent up demand for affordable financial services (Schumpeter J. A., *The Theory of Economic Development*, 1911 [1982]).

Although largely neglected by development economists for decades (Leibenstein, 1968; Kirzner I. , 1971), this focus on entrepreneurship as the driving force of the

development process and the key role that institutions²⁰ play in creating an environment that fostering the sort of entrepreneurial activity that has the potential to generate sustainable economic development has received much greater scholarly attention in recent years (Minniti, 2007; 2008; Powell, 2008; Naude, 2011; Henrekson & Sanandaji, 2011; Boettke, Kasper, & Streit, 2013). As Mises (1949 [1996], p. 314) argued, entrepreneurship is an inherent and universal aspect of human nature; as such, the supply of entrepreneurs does not substantially differ across countries or over time. What ultimately determines the contribution that entrepreneurs make towards economic growth, Baumol (1990) famously argued, is whether the rules of the game that are in place in a given society channel entrepreneurial activity towards productive, unproductive, or destructive activities (*ibid.*, p. 893). By establishing an appropriate institutional setting, governments can heavily influence the allocation of entrepreneurship towards desirable and undesirable activities, thereby affecting the contribution that entrepreneurship can make towards economic growth and development.²¹ So although entrepreneurship might serve as a proximate cause for economic growth and development, institutions are the fundamental cause because they ultimately determine whether entrepreneurial efforts are allocated towards productive, growth-enhancing activities (Boettke & Coyne, 2003).

²⁰ Following North (1990) and Boettke et al. (2013), I define institutions as the man-made rules that regulate and constrain people's behavior in a society, reduce uncertainty, and facilitate the coordination of knowledge in society. These can consist of formal laws or informal norms and customs.

²¹ Along the same lines, North (1990) provided a framework for explaining how changes in the formal and informal rules of the game in a society play a critical role in reducing uncertainty and placing constraints on what individuals can do, which in turn helps direct entrepreneurial behavior.

As this research indicates, what developing nations are fundamentally suffering from is not a shortage of entrepreneurial talent and opportunity but rather the absence of an institutional environment that is conducive to productive entrepreneurship (Murphy, Shleifer, & Vishny, 1991; Hay & Shliefer, 1998; Djankov & Murrell, 2002). Numerous scholars have attempted to outline what attributes make a country's institutions more or less hospitable to entrepreneurial activity. High quality institutions tend to be governed by rules that are *simple* and therefore relatively easy for economic agents, particularly entrepreneurs, to understand and operate within (Epstein, 2009). They should also be *predictable* so that individuals can plan for the future with a reasonable degree of certainty (Buchanan, 1962; Kuran, 1988; North, 1994). Most importantly for the sake of promoting entrepreneurship, rules should be *adaptive* so as to encourage the adoption of new technologies and more efficient production methods (Boettke & Coyne, 2003, p. 77; Downes, 2009; Elert & Henrekson, 2017). The absence of these high-quality or “enabling” institutions is a major obstacle to market-led economic development in SSA, which has long suffered from high rates of corruption and low rates of economic freedom (Aiyithey, 2005; Easterly, 2009; Gwartney, Lawson, & Norton, 2008). As Aiyithey (2008, p. 168) argues, “the greatest obstacle to Africa’s development is the absence of an enabling environment.” Fortunately, since these obstacles are “human-made – created by African governments themselves,” Aiyithey notes, they can also be removed by human action.

This insight is particularly relevant with respect to the issue of financial sector development, where SSA governments have historically taken a highly interventionist

approach. By ceding so much power and authority over financial sector development to the government in the post-independence era, many SSA governments restrained the ability of private entrepreneurs to solve these problems and instead invited an enormous amount of rent seeking and corruption in the financial sector. This problem was identified as a critical obstacle early on by scholars writing on the benefits of financial liberalization (Shaw 1973, p. 5). As Rondo Cameron (1968, p. 320) concluded in his edited volume on what policies best promote financial development across the developing world:

In general, the state would do better to devote its own limited resources to creating the conditions in which private entrepreneurs and private capital can flourish. This suggestion is intended specifically to include private entrepreneurs in banking.

Although the importance of establishing an enabling environment for private entrepreneurship has long been discussed in academic and policy circles, for many years these ideas have failed to have very little impact on the financial sector policies of SSA governments. Fortunately, these trends have started to reverse in recent years. Over the past decade or so, SSA has had the greatest success in reducing financial exclusion in the entire developing world as a part of the “mobile money revolution.” What distinguishes SSA from other developing regions is that it has achieved these results because it has most fully embraced this entrepreneur-led approach to achieving inclusive financial development. Across the region, regulators have shifted their focus from directly trying to solve the problem of financial exclusion to merely trying to establish an “enabling” regulatory environment that is conducive to entrepreneurial innovations.

The origins of the mobile money revolution can be traced back to the sweeping telecom deregulation that has occurred throughout SSA over the past two decades. In

1997, more than 75 percent of the countries in SSA lacked any mobile phone network, and the few countries that did imposed state monopolies (Aker & Mbiti, 2010, p. 227). Starting in the late 1990s, however, many SSA nations realizing that they could increase their revenues by getting rid of their inefficient state monopolies and instead taxing private firms began substantially deregulating their telecom industries, privatizing their state-owned telecom monopolies and opening the sector up to foreign competition (Aker & Mbiti, 2010). As a result, mobile penetration soared from only 3 percent in 2002 (or roughly 2 million customers) to nearly 50 percent (roughly 400 million customers) by 2010 (GSMA, 2015), making SSA the fastest growing mobile market in the world (Mahajan, 2010).

The rapid spread of mobile technology across SSA following these deregulations set the stage for a number of previously unimaginable business models that had the potential to reach previously inaccessible markets. One of the most widely discussed was the potential for mobile banking and payment services that could help access unbanked segments of the population (Batchelor, 2009). Because the high fixed costs and low variable costs nature of the telecom industry made it financially feasible for firms to offer low-price products to poor customers both in the urban centers and the rural countryside, MNOs were uniquely well positioned to fill the latent demand for cheap and accessible banking services (Suri & Jack, 2012). Unfortunately, any effort to establish these mobile banking services would invariably encounter immense regulatory scrutiny. Across SSA, most governments strictly limited entry into the banking sector, explicitly prohibited non-prudentially regulated firms from offering any sort of formal banking products. To the

extent they might allow new entrants into the sector from non-bank providers, regulators often demanded that these firms be subjected to the same regulations and onerous know-your-customer and anti-money laundering (KYC-AML) laws that applied to ordinary commercial banks (The Economist, 2012). These regulations effectively limited the market to existing banks and payment services like Western Union, who had to charge exorbitant fees to cover their high operating expenses (Morawczynski & Pickens, 2009).

The sudden rise of mobile technology and subsequent invention of mobile money transfer services by MNOs, however, introduced an entirely new business model that had not been anticipated by regulators. Rather than sending money through a formally regulated bank or traditional payment providers, innovations in mobile payments would enable customers to make digital person-to-person transfers without having to step into a bank or any sort of physical location and open an account. Even though these new services would presumably have to comply with existing regulations on banking and payment services, some MNOs felt that they would be able to exploit the legal gray area in the existing regulatory framework and circumvent repressive banking regulations.

The first MNO to take advantage of this legal ambiguity and eventually break through this regulatory barrier was Safaricom in Kenya with their revolutionary mobile payment service “M-PESA.” In 2006, Safaricom began experimenting with mobile money services by partnering with MFIs in rural communities as a way to help micro-finance customers more cheaply access and repay their loans (Hughes & Lonie, 2007). Initially, M-PESA avoided attracting the attention of regulators because of the small size of these pilot projects and ambiguous regulatory status of these digital P2P payments.

Following the enormous success of these pilot projects, however, Safaricom shifted its goal to providing mobile money services to the entire Kenyan market. But launching mobile money to a mass market would inevitably invite the scrutiny of Kenyan regulators.

Recognizing the threat that these regulations could pose, Safaricom decided to take a proactive approach. The company worked diligently with regulators to explain how the mobile money worked, why it differed from traditional banking services, and why it was sufficiently safe and socially beneficial enough to warrant exemption from the laws that applied to typical banking and payment services. They also worked to align their goals with the Central Bank of Kenya (CBK) and the Kenyan government, which had made expanding financial access a priority in their millennium development goals.

Working with the CBK to alter the existing regulatory framework rather than hoping to continue evading regulatory attention proved to be a wise choice. In February 2007, the CBK issued a “letter of no objection” formally exempting Safaricom from the more onerous KYC-AML regulations that applied to banks and allowing it to operate in a minimally regulated environment (Muthiora, 2015, pp. 6-9). The CBK also allowed Safaricom to launch its innovative agent banking model, enabling the MNO to contract with thousands of retailers and small-scale entrepreneurs across the nation who would serve as “mini-bank branches” and be permitted to set up accounts and provide basic cash-in/cash-out services without being subjected to the same rigid KYC-AML laws and other regulations that applied to ordinary banks (Donovan, 2012, pp. 65-66).

Safaricom released M-PESA to the general public in March 2007. Within its first year, they had registered more than 2 million accounts; by 2009, a quarter of Kenya's population, roughly 9 million adults, had M-PESA accounts, and mobile money had become Kenya's most popular payment media behind cash (Mas & Radcliffe, 2011, p. 364). M-PESA's success quickly drew the ire of lobbyist from the Kenyan Bankers Association. Fearing that the popular new service would infringe on their market, these lobbyists sparked concerns amongst the public that mobile money was highly unsafe and demanded that the CBK either rescind their letter or no objection or subject Safaricom to the same onerous regulations that they applied to prudentially regulated banks (Njiraini & Anyanzwa, 2008). A 2008 audit conducted by the CBK, however, revealed that the M-PESA system and Safaricom's network of agent bankers was actually *more* secure than the products offered by prudentially regulated banks (Muthiora, 2015, p. 13).

Although the results of the audit backfired on the banking lobby, its positive findings on the agent banking model set the stage for further rounds of deregulation that would directly benefit formal banks. In response to the banking industry's demands to "level the regulatory playing field," in 2010 the CBK removed its laws preventing banks from contracting agents (Muthiora, 2015, p. 13). This regulatory change made it possible for banks to enlist thousands of small-scale entrepreneurs across Kenya to provide basic banking services in poorer regions without incurring the costs of building physical branch or being subjected to excessively burdensome reserve, capital or customer identification requirements. In 2011, the CBK passed the Landmark National Payment System Bill providing the most flexible framework for agent banking in the world (Ondiege, 2015, p.

34). By 2014, Safaricom had enlisted more than 116,000 agents across the entire country, and commercial banks had added another 20,000 agent bank locations (GSMA, 2014).

Although it was originally conceived as an alternative to formal banking products, the greatest way that mobile money has contributed to financial inclusion is by increasing access to the formal banking system. Over the past few years, Kenyan banks realizing that the mobile money platform provided them with a much cheaper way to access poor rural customers began partnering with Safaricom and other mobile money providers to offer full-scale digital banking services such as mobile savings, credit and insurance. Applications like the Commercial Bank of Kenya's (CBK) M-Shwari and Equity Bank's M-KESHO have directly connected millions to formal bank accounts, enabling them to set up interest-bearing mobile savings accounts and access relatively affordable lines of credit. Since 2011, more than 10 million Kenyans have gained financial access through the CBK's M-Shwari program alone (Cook & McKay, 2015). Millions more have gained financial access through Equity Bank, a private commercial bank whose business model relies on mobile money to offer financial services to segments of the population that have historically been neglected by traditional banks (Allen, Carletti, Cull, Qian, Senbet, & Valenzuela, 2013; 2016). Without mobile money technology and the ability to cheaply establish agent branches across the countryside, banks like Equity Bank and the CBK would be unable to profitably serve low-income rural customers. But because the innovation of mobile money and the newly-allowed agent banking model enable them to open low-cost rural branches and charge fees on a per-transaction basis, these customers are no longer uneconomical for them to serve (Andrianaivo & Kpodar, 2011, p. 7).

This pattern of deregulation setting the stage for innovation and entirely new business models has a transformative effect on the Kenyan financial system. Today, more than a half dozen MNOs compete with Safaricom in offering mobile money services, and every commercial bank in Kenya offers formal financial services that are accessible through mobile money platform and employs agent bankers. The result has been an unprecedented rise in financial inclusion. Between 2006 and 2013, the percentage of Kenyans with access to formal financial institutions (prudential or non-prudential) nearly tripled from less than 25 percent to more than 67 percent (GSMA, 2014). As CBK Governor Njunganda Ndugn'u admits, these advances would not have been possible had the CBK not removed many of the regulatory-induced barriers that have historically prevented firms from being able to access poor customers to "ensure that innovations are not stifled by heavy regulatory regimes" (Di Castri, 2013). Safaricom founder and CEO Michael Joseph aptly summarized these lessons when asked what governments around SSA need to do to emulate Kenya and bring about financial innovations: "I wouldn't say the government needs to do anything. I would say [they] just need to have a 'light touch' regulatory environment in order to encourage entrepreneurship and innovation."

Kenya's enormous success with mobile money is noteworthy for many reasons. From a policy standpoint, Kenya's success provided a blueprint for nations that are seeking to reduce financial exclusion. Over the past few years, dozens of SSA countries have adopted the "Kenyan model" of deregulating entry into the banking and payment sector to "harness the potential of new technologies" and new business models like agent banking (Demirguc-Kunt, 2014, p. 354). The result has been the greatest surge in

financial inclusion that the developing world has ever witnessed. Between 2008 and 2014 alone, the share of adults who had access to formal finances services rose from less than 20 percent to roughly 34 percent (World Bank, 2014). The World Bank attributes much of this growth to the meteoric rise of mobile money services across the continent (World Bank, 2015). Since 2008, more than 220 million mobile money accounts have been opened in SSA alone, with thousands more being added each day (GSMA, 2015). The most important finding from a policy standpoint is that mobile money has achieved its greatest results in countries that have taken the largest steps towards deregulating their financial sectors by reducing identification requirements and barriers to entry in the financial sector so that competing firms can issue mobile money products and allowing for agent banking. As di Castri (2015) notes, the number of mobile money accounts is more than 220 percent higher in countries that have adopted these enabling policies than in nations that have maintained rigid regulations on mobile money and agent banking.

Kenya's success is also noteworthy because it provides an illuminating case study not only in how institutions shape entrepreneurial activity, as Baumol (1990) and others have noted (Boettke & Coyne, 2003), but also in how entrepreneurial activity can in turn influence institutions (Elert & Henrekson, 2017). In the earliest stages of the mobile money revolution, MNOs like Safaricom were able to use innovative mobile payment technology to circumvent the existing regulations that barred non-prudentially regulated providers from entering into the banking and payment sector and competing. Since mobile payments were an entirely new technology, Safaricom was able to take advantage of the institutional and regulatory void to launch pilot products to unbanked rural

customers. Over time, as they sought to expand its services to the entire economy, Safaricom was able to leverage the success and popularity of M-PESA to pressure the CBK and other regulatory agencies to remove or substantially water down their regulations on KYC-AML requirements, licensing agents, and allowing competition in the payment sector from nontraditional payment providers. The success of these policies and insistence by banking lobbying groups to provide a “level playing field” inspired the CBK to engage in further rounds of deregulations that applied to the entire financial sector, resulting in an even greater surge in formal financial access. In this sense, the mobile money revolution in Kenya shows how entrepreneurial behavior can significantly impact and reshape institutions. Using the terminology laid out by Elert and Henrekson (2016), the innovation of mobile money allowed Safaricom to *evade* existing regulations on banking and payment services. But over time, Safaricom was able to use its market power and the immense popularity of its mobile money product to lobby the CBK to *alter* their rules governing financial services, and other MNOs and banks were able to lobby for these regulatory exemptions to be extended to all competitors. The result of this entrepreneur-led institutional change has proven to be enormously successful in terms of reducing financial exclusion in all the countries that have embraced this approach.

Conclusion

This paper has two related findings that have implications for policymakers in the developing world. The first is that the state-led approach to achieving inclusive financial development, much like state-led approaches to achieving economic development more generally, has been an abject failure across the developing world. SSA provides a stark

example of this lesson because so many nations in the early post-independence era fully embraced this state-led approach. The results, as Brownbidge and Harvey (1998) point out, were a complete disaster. This top-down method not only resulted in negative economic growth in many countries throughout much of the post-colonial period but it also led to acute financial crises in the 1980s and 1990s. It also made absolutely no progress towards expanding financial inclusion to local firms and individuals, which was one of the major stated rationales for this state-led approach. The level of failure is directly related to the extent of state intervention in the financial sector.

The second implication has to do with the success of the market-led approach to achieving inclusive financial development as evidenced by the enormous progress that SSA nations that have embraced a more market-oriented approach have made towards achieving inclusive financial development. Although some of this success can be traced back to the more moderate financial liberalizations policies that were enacted in the late-1980s and early-1990s, the greatest progress towards expanding financial *inclusion* has been made over the past decade as a part of the mobile money revolution. Importantly, the countries that have achieved the best results have been the ones that have taken the greatest strides towards deregulating key aspects of their financial system (Di Castri, 2013; 2015). These deregulations most notably include permitting nonbank competitors to enter to banking and payment industry and partner with formal banks, removing restrictions on agent banking so that entrepreneurs across the country can in effect become small-scale banking outlets, and significantly loosening KYC-AML requirements to make it easier for low-income customers to open mobile banking accounts.

The main takeaway from the mobile money revolution is that the best way for countries to achieve these results is to focus on establishing an enabling regulatory environment that frees market entrepreneurs to craft innovative solutions to what have long been considered intractable problems such as expanding financial inclusion. As the mobile money revolution in SSA illustrates, it is impossible to know *ex ante* what type of innovative solutions entrepreneurs can devise to solve these problems. But given the proper regulatory scope and profit-earning incentives, these private-sector entrepreneurs are much better equipped to find innovative solutions than any bureaucrat or state planning agency, no matter how benevolent their intentions might be. Consistent with the main findings in the financial liberalization literature, many nations across SSA have been able to achieve unprecedented growth in financial access simply by removing repressive regulations and giving entrepreneurs an incentive to find these solutions. If anything, the lessons from these limited deregulations is that in order to achieve the greatest possible results these liberalization policies can and should be taken further. Despite the progress many nations have made in recent years in deregulating certain aspects of their financial systems that have hampered financial inclusion, many countries in SSA and across the developing world still maintain repressive regulations in a variety of other areas such as requiring banks to own a certain amount of government bonds, mandating excessively high reserve and capital requirements that limit the degree of financial intermediation banks can engage in, and imposing strict exchange controls that prevent bank customers from holding their deposits in foreign currencies as well as prohibiting banks from issuing their own circulating notes and liabilities (Selgin &

Lastrapes, 2012). Explaining the benefits of these further deregulations will be the task of future scholars. But thanks to the success of the market-led reforms that helped bring about the mobile money revolution, they now have a compelling case study to build on.

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CHAPTER THREE: FINANCE FOR ALL – THE STORY OF M-PESA AND THE SUCCESS OF THE MARKET-LED APPROACH TO FINANCIAL DEVELOPMENT

Introduction

Why have transformative financial technologies thrived in some parts of the developing world and languished in others? Economists have long maintained that financial development plays a critical role in helping individuals and nations escape poverty.²² In recent years, the debate has shifted towards what role governments should play to help foster *inclusive* financial development by expanding the ratio of a country's population that has access to formal financial services (World Bank, 2008).

Elsewhere I've argued that there are strong reasons why policymakers who wish to promote inclusive financial development should rely on bottom-up, market-led means and not top-down, state-led methods (Burns, 2016). Arguably the best example of how market entrepreneurs can find innovative ways to expand financial services when they aren't fettered by an overbearing regulatory regime is the mobile money revolution currently underway in Sub-Saharan Africa (SSA). Mobile money enables anyone with a cell phone to send a receive payments at a fraction of the cost of traditional payment

²² Although this literature traces back to Schumpeter (1911 [1982]) and earlier economists, it is most commonly associated with the pioneering work by McKinnon (1973) and Shaw (1973) on the growth-inhibiting effects of policies of "financial repression" and the growth-enhancing effects of "financial liberalization." Later scholars provided empirical evidence to support the claim that finance matters and that financial liberalization helps contributes to more rapid economic growth (King & Levine, 1993a, b; Levine, 2005; Fry, 1995). More recently, a deep literature has emerged on the role that legal institutions play in promoting financial development (La Porta et al., 1997, 1998, Beck et al., 2003). These scholars have examine how a nation's legal origins and traditions impact its prospects for financial development.

services. It also enables them to deposit or withdraw cash from thousands of “agent” branches located in retail shops and small kiosks across the region. Although they are not full-scale banks, agents act like mini bank branches and perform a number of bank-lite functions at a small fraction of the costs. More recently, banks have been able to partner with MNOs to offer a fully array of mobile banking services. According to the GSMA (2015), 220 of the 411 million mobile money accounts in the world are located in SSA.

Although mobile money has grown exponentially in SSA in recent years, its success was not immediate or easy to predict. For the first few years, the technology only took off in one country: Kenya. Even as mobile money spread to other parts of SSA in recent years, its success has by no means been uniform. This raises one of the greatest unresolved puzzles in the mobile money literature: *why mobile money has thrived in some nations and not in others?* Early on, scholars offered a number of socio-economic explanations for why mobile money was confined to nations like Kenya. First, they argued that there had to be a dominant telecom provider. Second, there had to be a relatively dense urban population hub and strong market for domestic remittances. Finally, there had to be a baseline degree of economic and financial development so that mobile money agents could access liquidity at nearby bank branches relatively easily.

Over the past five years, however, these competing hypotheses have failed to explain why the mobile money revolution has spread so rapidly into markets all across SSA. What is most interesting is that mobile money has been able to thrive in countries that meet *none* of these three criteria. In this paper, I explain why none of these popular explanations have proven to be either necessary or sufficient for predicting the success of

mobile money. I argue that the most important factor that unifies all the cases where mobile money has succeeded is that regulators – either by choice, negligence, or fear of public outcry – have chosen to take a more laissez faire approach to regulating these new products. In fact, the greatest predictor both in SSA and internationally of whether mobile money will take root is whether or not a nation’s government succeeds in creating an “enabling” regulatory environment that removes a variety of “repressive” regulations that inhibit financial inclusion and encourages competition and “permissionless innovation.”

The Financial Liberalization Hypothesis Applied to Africa

For decades, researchers have documented the dangers that arise when governments in the developing world subject their financial sectors to excessive regulations. This work traces back to the pioneering work of Ronald McKinnon (1973) and Edward Shaw (1973). In separate works, these authors argued that governments that heavily intervene in the banking system by controlling interest rates and restricting entry into the banking sector tend to stifle competition and suppress financial and, hence, economic development.²³ Taken together, these regulations constituted forms of “financial repression.” The authors concluded that the best way to promote financial development was to pursue to program of “financial liberalization,” removing these repressive policies to allow the market to set prices and lowering barriers to entry to invite competition in the financial sector.

²³ The “McKinnon and Shaw hypothesis,” as it is often referred to, is most famous for highlighting the adverse consequences of nominal interest rate ceilings, which when combined with relatively high rates of inflation caused both bank loans and deposits to yield negative real rate of return. The authors argued that these regulations effectively destroy any incentive for savers to hold their wealth in the form of private bank deposits. They also prevent banks from efficiently allocating savings to their highest valued use. The resulting “financial shallowing” reduces the amount of real savings that banks can intermediate into growth-enhancing projects and hence adversely affects economic growth and development.

Over the past few decades, an enormous empirical literature has emerged testing this financial liberalization hypothesis. Researchers have consistently found that nations with less restrictive regulatory regimes enjoy higher rates of financial deepening and have more liquid capital markets; they also experience more dynamic competition in the financial sector and do a better job of inviting entrepreneurial innovations in finance (King and Levine, 1993; Levine 1997; Fry, 1995; Demirgüç-Kunt and Levine, 2001). The result of this financial development is greater stability and more rapid growth.²⁴

Most scholars who have tested the McKinnon-Shaw hypothesis have focused on the negative effect of interest rate controls. Until recently, however, far less attention has been paid to the effects that various regulations such as restricting entry into banking have on excluding poorer segments of society from accessing financial services. One of the fastest growing subfields in the financial development literature over the past decade, however, has been on the importance of *financial inclusion* (defined as the ratio of the population that has access to the formal banking services).²⁵ According to the World Bank (2014), roughly 2.5 billion people across the developing world have no access to formal financial services. The problem is particularly acute in Sub-Saharan Africa (SSA), where less than a quarter of the population has access to bank accounts.

²⁴ Researchers have also empirically tested the various ways that finance contributes to economic growth and development. Cross-country regressions indicate that deeper financial systems are associated with lower poverty rates and lower rates of income inequality (Beck, Demirgüç-Kunt, & Levine, 2007).

²⁵ As the World Bank (2008) notes, the neglect of the importance of developing inclusive financial systems until recently was due in large part to the paucity of reliable data on financial access in developing nations. Today, as Demirgüç-Kunt (2008, p. 21-22) notes, financial inclusion has become a “focal part of the overall development agenda” because “modern development theory sees the lack of access to finance as a critical mechanism for generating persistent income inequality, as well as slower growth.”

In 2008, the World Bank commissioned a report entitled *Finance for All* (2008) to collect data on rates of financial inclusion across the developing world and to outline the main factors that contribute to financial exclusion. Although the report outlines a number of ways governments can intervene to overcome the alleged “market failure” to extend financial services to the poor, its authors acknowledge that excessive regulations can play a pivotal role in making it prohibitively costly for banks to access the poor. One of the ways they can do this that was highlighted by McKinnon, Shaw and many others is by erecting high barriers to entry into financial services. Perhaps the notable example of how regulations can prevent banks from accessing the poor are the strict “know your customer” (KYC) and anti-money laundering (AML) laws that international agencies require governments to impose on their banks. One well-documented effect of these policies has been to make it unprofitable for banks to open small-scale bank accounts for poorer customers in rural areas who are less likely to possess an official ID or have any sort of documented credit history. Because these rules make it too costly for banks to access millions of poorer customers, they constitute less well-known forms of “financial repression” (De Koker, 2006; Noor, 2013; Demirguc-Kunt, 2014).

Fortunately, a number of technological innovations in payment services have emerged over the past decade that have the potential to circumvent many of these socio-economic and regulatory barriers. The most obvious of these are the new innovations in mobile payments and banking. These new technologies have made it possible for not only traditional banks but also nontraditional providers like mobile network operators (MNOs) to take advantage of vast networks and profitably provide financial services to the poor.

Based on the findings in the literature on financial liberalization, we should expect financial innovations to take root in the countries that did the best job of reducing government interference in the financial sector by removing the repressive policies that have served to hamper financial inclusion over the years. In this context, liberalization would include policies like removing barriers to entry to allow new foreign and domestic firms – including *nonbank* companies – to inject a much needed dose of competition into the financial services sector as well as scaling back strict KYC-AML and customer due diligence requirements that make it prohibitively costly for low-income citizens to open a bank account. In short, if the financial liberalization hypothesis is valid we should expect the countries that have enjoyed the greatest success with mobile money to be the ones that have most effectively removed these repressive regulations and done the best job of creating a regulatory environment that welcomes competition and innovation.

The Horse Race: Explaining Why Mobile Money has Thrived in Some SSA Countries and Languished in Others

Setting the Stage: The Origins of Mobile Money in SSA

At first glance, SSA would seem like an unlikely setting for a market-led success story. For decades, the region has ranked at the bottom of virtually every index of economic and political freedom (see: Gwartney, Lawson, & Norton, 2008).²⁶ In 2008, 300 million Africans were classified as poor (living on less than US\$1 per day), with 120 million classified as “ultra-poor” (less than US\$0.50 per day) (Aker & Mbiti, 2010).

Given these abysmal figures, it is not surprising that SSA suffered from the lowest rates

²⁶ In 2007, the region ranked dead last in seven of the ten measures of economic freedom employed in the Heritage Foundation and Wall Street Journal’s *Index of Economic Freedom*. It performed particularly poorly in three critical areas: property right protection, corruption, and business freedom.

of financial inclusion in the world, with only 15 percent of adults having access to a bank account (Ondiege, 2010, 2015; Beck and Cull, 2013; KPMG, 2014). In fact, SSA's rate of bank penetration per 1,000 citizens is less than one-third as high as other developing nations.

Today, however, SSA is experiencing the most rapid rise in financial inclusion in the entire developing world thanks to technological innovations like mobile money. These products have helped overcome the socio-economic and regulatory obstacles that have prevented millions from accessing financial services for decades by converting the simple cell phone – which had become almost universally accessible in SSA after many nations deregulated their telecom markets in the late 1990s²⁷ – into a gateway to formal financial services. These two pillars – SSA's remarkably low rates of financial inclusion and its near universal rates of cellular penetration²⁸ – created fertile soil for mobile money.

It was in this context that the British telecom company Vodacom Group decided to release its “M-PESA” (“Pesa” is Swahili for money) through its subsidiary in Kenya, Safaricom. After the success of its pilot projects, Safaricom released M-PESA to the general public in March 2007 (Hughes & Lonie, 2007). Though Safaricom had initially

²⁷ For more on the politics and economics of the rise of cell phones in Africa, see Aker & Mbiti (2010).

²⁸ Over the past decade, Africa has been the fastest growing mobile market in the world (Mahajan, 2010). Mobile penetration on the continent climbed from only 3 percent in 2002, or roughly 2 million customers, to more than 80 percent, or roughly one billion customers, in 2015 (GSMA, 2015). This rapid growth was driven almost entirely by the telecom deregulations that took place around the turn of the century. In 1997, more than 75 percent of Sub-Saharan African countries had no mobile phone network, and all the existing networks were managed by a state monopoly (Aker & Mbiti, 2010, p. 227). Following the failure of these state monopolies, many SSA countries deregulated their telecom markets, opening their telecom sectors up to foreign investment and foreign entrants and allowing for domestic competition. The results of this telecom liberalization were remarkably successful, as prices fell sharply and the quality and range of services rose exponentially (GSMA, 2006). By 2009, every country enjoyed a mobile phone network, with roughly 75 percent being either fully or partially deregulated (Aker & Mbiti, 2010, p. 227).

marketed M-PESA as a way for customers to cheaply pay their bills, purchase airtime and “send money home” anywhere in the country, customers soon realized that it offered considerably lower transactions costs not only on person-to-person remittances but on virtually *all* types of exchanges including commercial transactions. Before long, M-PESA had become the dominant payment medium in Kenya. Businesses began advertising their acceptance of M-PESA; many set up automatic bill payments and bulk distribution payments through the system (Gikenye, 2011). By 2009, M-PESA had 9 million accounts, roughly a quarter of Kenya’s population. The number of retail shops and agent branches offering basic liquidity services also skyrocketed from Safaricom’s 750 shops in April 2007 to more than 17,000 outlets in 2009 (Mas & Radcliffe, 2011, p. 364).

Today, Kenya is the world leader in mobile money with more than 30 million accounts and 100,000 agents (Muthiora, 2015). M-PESA’s success has captured the imagination of policymakers and development organizations around SSA. Hoping to emulate Kenya, various government and nonprofit development organizations attempted to partner with micro-finance institutions and leading telecom companies like Vodafone to launch virtually identical mobile money products in a number of other SSA countries. Millions of dollars flowed from international aid organizations like the UK’s Department for International Development, USAID and the Bill and Melinda Gates Foundation to finance mobile money launches throughout SSA. Much to their surprise, however, for years the service failed elsewhere. The initial failure of mobile money to take off outside Kenya posed arguably the greatest puzzle of the incipient mobile money revolution: *why did mobile money thrive in Kenya yet fail to achieve success in so many other countries?*

In response to the initial failure of mobile money to take off outside of Kenya, researchers put forward three main determinants of what would make a successful mobile money market and, hence, why mobile money appeared to be unique to Kenya (see, for example, Jack & Suri, 2011; Mbiti & Weil, 2011; GSMA, 2009; Mas & Radcliffe, 2011; Mbogo, 2010; IFC, 2010). First, in order to make mobile money a profitable enough venture to justify the high upfront costs of establishing a mobile money platform, many researchers argued that a country had to have a dominant telecom provider. Safaricom enjoyed an 80 percent market share in Kenya at the time M-PESA was launched, which was large enough to justify the large upfront cost of creating a closed payment platform.

Second, researchers argued that mobile money would only thrive in nations with large urban population centers and a vibrant domestic remittance market to populated rural areas. In Kenya, much of the early demand for mobile money came from workers in the urban hub of Nairobi remitting money to their families in rural areas. As a result, many researchers maintained that mobile money would never take hold in countries that had relatively low population density ratios and low remittance rates because MNOs would be unable to attract the critical mass of urban workers necessary to make mobile money profitable. Kenya's moderately high population density ratio (80 citizens per km²) put it in the top quartile of SSA countries, making it an ideal location for mobile money.

Finally, researchers argued that mobile money and the agent banking model that it relied on could only thrive in markets where there was already at least some baseline level of financial and economic development. Although Kenya was by no means a poster child for good governance relative to Western nations, it did enjoy higher quality legal

and financial institutions owing to the fact that it upheld more of its British common law legacy than many of its neighbors. As such, it had a *relatively* well-developed financial system with a dozen or so well-capitalized banks in Nairobi. For this reason, scholars argued that countries that lacked this baseline level of financial development and bank penetration “sweet spot” – where bank branches weren’t so pervasive as to diminish the demand for alternative products and so sparse as to make it difficult for agents to manage their liquidity – would not be hospitable to mobile money (Mas & Radcliffe, 2011).

Over the past five years, however, these competing hypotheses for what makes a successful mobile money market have come under serious scrutiny as the mobile money revolution has begun to spread outside of Kenya and into markets all across SSA. What is most interesting is that mobile money has been able to thrive in countries that do not meet all of these criteria. In some cases, it has even succeeded in nations that meet *none* of these criteria. The failure of these criteria to explain the rise of mobile money implies that there must be a better explanation for what best predicts its success.

Although there were admittedly a variety of factors that might’ve contributed to the success of M-PESA in Kenya, I argue that the single greatest factor was that the CBK succeeded in creating an “enabling” regulatory environment by allowing nonbanks to enter the financial services market and liberalizing (and, in many cases, eliminating) many of the regulations that had served to repress financial inclusion. These extensive deregulations made Kenya and nations that later followed the “Kenyan model” fertile territory for mobile money. Traces of this argument can be found elsewhere (Porteous D., 2006; Stone, Johnson, & Hayes, 2010; Kimenyi & Ndung’u, 2009; Beck, Senbet, &

Simbanegavi, 2015; Heyer & Mas, 2011). My case differs in claiming that an enabling environment is not only one of many *necessary* prerequisites for a successful mobile money market but that given the success it has enjoyed across widely disparate countries who employ these “enabling” policies that it is by far the single most important predictor.

What constitutes an “enabling” regulatory environment? Other authors have documented some of the key conditions that must be met for a regulatory environment to be classified as “enabling” (see, for instance, Porteous, 2006; di Castri, 2013). Drawing from the earlier discussion of financial repression and liberalization, I define an enabling or liberalized environment as existing when two key conditions are met. First, regulators invite competition by removing barriers to entry into the financial services industry and creating an “open and level playing” field that permits both banks *and* non-bank MNOs to provide mobile money services. This free entry into the mobile money market is critical in regions like SSA because, unlike banks, MNOs have succeeded in profitably reaching the vast majority of the population. As many researchers have noted, the fact that MNOs have succeeded in profitably offering services even to poor, rural citizens gives them a comparative advantage in delivering digital financial services to the poor.

The second key pillar of an enabling regulatory environment is that regulators permit mobile money issuers to operate under a significantly lighter regulatory burden by removing or relaxing regulations such as KYC-AML laws, customer due diligence requirements as well as capital and reserve requirements and other financial regulations that often make it too costly for banks to extend services to the unbanked. A critical element of this approach is that regulators allow all mobile money providers to contract

with banking correspondents, or “agents,” to provide basic banking services subject to a far lighter regulatory burden. These lighter KYC-AML requirements are designed to be proportionate to the level of systemic risk a customer might pose, which essentially removes a large share of the burden that firm’s face for opening small-scale accounts for low-income customers (Di Castri, 2013, p. 18). Lastly, regulators also do not mandate any specific business or interoperability model but instead rely on a “market-led” approach that allows entrepreneurs to discover the best means of offering mobile money products subject to the most minimal level of regulatory oversight possible (GSMA, 2015, p. 21). Ultimately, any regulatory regime that prohibits MNOs and other nontraditional and non-prudentially regulated financial service providers who might have a comparative advantage in reaching poorer customers from entering the market for basic financial services or subjects them to the same prohibitively costly regulations that are enforced on traditional banks stifles the their ability to expand financial access to the unbanked. It thus constitutes a powerful but often overlooked form of “financial repression.”

The Kenyan Model: The Enabling Approach Applied to M-PESA

It is virtually impossible to answer any questions regarding the mobile money revolution without analyzing the origins of this revolution in Kenya. The early stages of M-PESA’s launch in Kenya marked a watershed moment in the history of mobile money because it provided a blueprint for future policymakers on how to design a regulatory environment that would make users feel secure and prevent systemic risk while at the same time inviting entrepreneurial innovations that could promote inclusive financial

development. After first being approached by Safaricom in the mid-2000s, the Central Bank of Kenya (CBK) faced a stark choice: they could either “maintain the status quo and refuse its application on the grounds that the legal framework does not permit the participation of non-banks”, or they could experiment with a potentially game changing technology by permitting the M-PESA to proceed even in the absence of a fully fleshed out regulatory framework and “navigate the necessary risk” as they came (Muthiora, 2015, p. 9).

Fortunately, the CBK saw the potential of mobile money to help it achieve its financial inclusion goals and elected to take the “test and learn” approach (Muthiora, 2015, p. 6). After conducting an internal review of Safaricom’s proposal in early 2007, the CBK’s legal team determined that because Safaricom itself was not intermediating the deposited funds or creating systemic risk that M-PESA was primarily a payment service and not a banking business (AFI, 2010). As a result, they determined that M-PESA should not be subjected to the extensive regulations that govern ordinary banks.

In February 2007, the CBK gave Safaricom the green light to release M-PESA, issuing a “letter of no objection” that allowed them to provide mobile money services without being subjected to existing banking regulations, or having to wait for a full-scale regulatory framework to be established governing mobile payments. Perhaps most importantly, they allowed Safaricom to launch their revolutionary correspondent banking model that enabled them to contract with thousands of individuals and retailers across the country who would be permitted to set up accounts and provide basic cash-in/cash-out services without being regulated like banks (at the time it was illegal for ordinary banks

to contract agents) (Donovan, 2012, pp. 65-66). Critically, since Safaricom decided to impose limits on the amount of mobile money that could be held in an account or transacted over a given time period, the CBK allowed them to use much less stringent identification standards that were “proportionate” to the size of the accounts and hence the risk posed (Di Castri, 2013, p. 22). These “proportionate, risk-based” KYC-AML standards removed arguably the most costly hurdle to reaching the financially excluded, since poor citizens in rural areas often lack formal ID and rural banks don’t have a cost-effective means of verifying their identity for such low-value accounts.²⁹ As Chandy, Dervis, and Rucker (2012, p. 13) note, this approach of “allowing regulation to follow innovation” through the “limited regulation of M-PESA’s network of agents was critical.” These letters of no objection were later extended to other MNOs so virtually *any* of them could freely enter into the mobile payment market (Muthiora, 2015).

A second watershed moment occurred roughly a year after M-PESA was released when the CBK’s decision to allow M-PESA to proceed in a relatively unregulated setting came under fire from lobbyist from the Kenyan Bankers Association who, fearing that the popular new service would infringe on their business, demanded that they rescind their approval (Njiraini & Anyanzwa, 2008).³⁰ Banking lobbyists argued that since M-PESA was relatively unregulated it would create a ripe opportunity for hackers and money

²⁹ Most governments, including Kenya’s, do impose transaction limits on the amount that can be held and sent in a given period. However, these limits tend not to be binding for low-income residents (\$1,200/day), and they enable MNOs to avoid the more stringent KYC-AML requirements. In most “enabling” countries today, individuals are permitted to open mobile money accounts using the same requirements as for opening a mobile account. Often times, this can be done by showing a single form of ID (Di Castri, 2015).

³⁰ In a popular article released at the peak of the industry backlash against M-PESA, Njiraini and Anyanzwa (2008) argued that “its just a matter of time before a mega financial disaster befalls the country.”

launderers (Wahome, 2009). They also argued from a societal standpoint that letting a company like Safaricom create digital claims to money could reduce the use of formal savings accounts and lead to financial instability and disintermediation (Stahl, 2015).

In many ways, the outright fear tactics from various well-entrenched interest groups that Safaricom faced were very similar to the attacks that apps like Uber and Air BnB faced in their early stages from existing taxi companies and hotel chains. Safaricom CEO Bob Collymore explicitly compared M-PESA to “disruptive” technologies like Uber and AirBnB. In response to the concerns the banking lobby had stirred, the Kenyan Minister of Finance demanded the CBK’s Payment Service Group conduct a formal audit of the M-PESA system in 2008 and release the results to the public. Much to the banking lobby’s dismay, their efforts backfired; the audit revealed that M-PESA was not only safe but much *more* secure and reliable than the payment products that were being offered by traditional, prudentially regulated banks and other payment providers (Muthiora, 2015, p. 13). After the results were released, consumer confidence in M-PESA skyrocketed and the number of accounts registered grew at an even faster rate.

The audit was an important milestone for two reasons. First, it proved Kenyan regulators were firmly committed to their hands-off regulatory approach,³¹ even in the face of targeted lobbying efforts from the nation’s most powerful interest groups. Second, the positive results of the audit set the stage for further rounds of deregulation. In 2009, the CBK released its “Guidelines on Agent Banking” formally codifying the successful

³¹ As Safaricom CEO Bob Collymore noted in an interview with 60 Minutes, “the most effective barrier for the success of mobile money around the world is the banking lobby” (Stahl, 2015). However, thanks to its enormous popularity, the Kenyan government’s hands were bound with respect to banning mobile money or regulating it more heavily to appease the banking lobby. “By the time M-PESA was up and running and we had a critical mass, the banking lobby in Kenya couldn’t do anything about us” (Saigal, 2015).

agent banking practices that had spontaneously developed in the proceeding years. In 2010, in response to the banking industry's complaints that Safaricom was receiving "special treatment" because mobile money was so lightly regulated, the CBK decided to allow all commercial banks to contract with banking agents, effectively eliminating one of the greatest barriers to entry in the financial sector that small-scale entrepreneurs faced. In 2011, the CBK authorized the "Landmark National Payment System Bill" providing the most flexible framework for agent banking in the entire world (Ondiege, 2015, p. 34).

Taken together, these deregulations laid the groundwork for what an "enabling" regulatory environment could look like. By in effect removing barriers to entry and allowing nontraditional providers into the market, MNOs were freed to exploit their comparative advantage in reaching the rural clients and discover previously unimaginable ways to reach the financially excluded. The competition between these new and old financial service providers helped drive prices down and improve the quality of money transfer services (di Castri, 2013, p. 14). Perhaps most interestingly, by removing barriers to entry and deregulating both new and existing financial service providers on a variety of dimensions, the CBK perhaps unknowingly embraced many core tenants of the financial liberalizations hypothesis. As Donovan (2012, p. 65) aptly noted: "Kenya's initial success with mobile money was arguably based on a virtual *absence* of regulations."³²

³² In its review of enabling deregulations in Kenya, Muthoria (2015, p. 6) argued: "the role of the CBK in creating a hospitable regulatory environment cannot be overstated. By providing incentives for service providers to invest and avoiding overly prescriptive or burdensome requirements, Kenya has managed to encourage innovation and growth while preserving the stability and soundness of the financial sector."

Today, Kenya is the world leader in mobile money with nearly 30 million total mobile money accounts provided by six competing providers, the most popular of which remains M-PESA (Muthiora, 2015). Remarkably, the M-PESA system in Kenya alone handles more transactions than Western Union does globally (Kendall, 2011, p. 3).³³ Mobile money is no longer limited to person-to-person transfers; it now plays an essential role in virtually every sector of the Kenyan economy. Ninety-five percent of small business reported that they readily accept mobile money in exchange for goods and service and to pay their workers (Gikenye, 2011). Mobile money has also paved the way for hundreds of new startup companies that all run entirely off the mobile money platform to offer services ranging from micro health and life insurance to farming products and digitized tuition payments (Kendall, 2011). The success of M-PESA and the flurry of new tech startups that have been built off this mobile money platform has led many researchers to refer to Kenya as the “Silicon Savannah” (The Economist, 2012).

Although banks were at first hostile to mobile money, once the technology took off they began to realize that mobile money could instead be used as a *complement* to their services. Once banks realized they’d lost the regulatory battle, they began to see that the mobile platform gave them a new way to access poor clients in remote regions without having to incur the high costs of operating rural branches.³⁴ Starting around 2011, banks began partnering with M-PESA to offer full-scale mobile banking products

³³ M-PESA transactions exceeded \$24 billion in 2013, more than half of Kenya’s GDP (Economist, 2014).

³⁴ Safaricom has been quick to point out that since 98 percent of low-value transactions are conducted in cash, M-PESA is much more a substitute for cash than bank deposits (Saigal, 2015) CEO Bob Collymore has noted banks’ changing stance towards M-PESA: “The banking sector in Kenya now sees how we can work together. We aren’t their competitor: products such as M-PESA improve the velocity of cash and M-PESA competes with cash not banks. Rather than competing with banks, we are working with them.”

such as mobile savings, credit and insurance. Applications like M-Shwari have directly connected millions to formal bank accounts, enabling them to set up interest-bearing mobile savings accounts and access relatively affordable lines of credit. Over the past few years, 10 million Kenyans have gained financial access through the Commercial Bank of Kenya's M-Shwari program alone (Cook & McKay, 2015). Today, every commercial bank in Kenya offers formal financial services via mobile money. Since customers can receive a full array of banking services without ever stepping foot in a physical bank branch, many have begun calling this phenomena "branchless banking" (Mas, 2009).

The result of mobile money and the associated rise of mobile and agent banking has been a rapid increase in Kenya's rates of *financial inclusion*. Between 2007 and 2010 alone, the number of bank accounts increased from 2.5 million to 8 million (Ondiege P. , 2010). Another beneficial effect on the Kenyan economy has been increased *financial deepening*, the ratio of private bank liabilities to GDP. This ratio rose from 33 percent to 44 percent in the five years after mobile money (Ndirangu & Nyamongo, 2013, p. 3).³⁵

The ultimate effect of mobile money in Kenya, therefore, has been not only to transform its economic and financial landscape but also rapidly accelerate its progress towards meeting its goals for inclusive financial development.³⁶ The CBK's "hands off" approach helped make Kenya ground zero for the mobile money revolution. It has also

³⁵Much of this deepening can be traced not only to bank-issued mobile savings products linked to mobile platforms but also to the practice of agent banking, since most agents hold reserves and access liquidity through their special accounts at formal banks. As the GSMA (2015, p. 8) concluded in its report on the rapid financial development Kenya is experiencing, "the introduction of agent banking and increased collaboration between mobile operators and banks have significantly deepened banking."

³⁶ In a recent survey, Suri and Jack (2016) estimate that M-PESA alone has lifted roughly 200,000 Kenyans out of poverty by making it easier for the poor to access mobile savings to smooth their consumption over time and pursue higher paying urban jobs since they can remit money home cheaply and reliably.

made Kenya the poster child for the entrepreneurial, market-led approach to financial development.³⁷ CBK Governor Njunganda Ndung'u aptly summarized this "less is more" approach: "a regulator must realise that better regulation is more beneficial than more regulation. We must ensure that innovations are not stifled by heavy regulatory regimes" (GSMA 2015, p. 19). When asked what governments need to do to emulate Kenya's success, Safaricom founder Michael Joseph aptly summarized these lessons: "I wouldn't say government needs to do anything. I'd say the government just needs to have a 'light touch' regulatory environment in order to encourage entrepreneurship and innovation."

Following the Kenyan Model: Other Mobile Money Success Stories in SSA

Kenya provides a powerful case study on the importance of establishing enabling policies. However, in isolation it cannot fully explain why mobile money has taken off in many other SSA countries in recent years. To illustrate that having an enabling regulatory environment is the primary driver of the success of mobile money in the nations where it has taken off and that its success is not due to other factors such as different rates of prior economic freedom or financial development or the existence of certain types of legal systems or colonial legacies, as others have argued, I've restricted my analysis in this section to SSA countries that (a) all rank in the same quartile of the index of economic freedom over the past decade and (b) all share a common British colonial legacy and who have to varying degree maintained the influence of British common law. By restricting my focus to this subset of countries, we are better able to make an "apples to apples"

³⁷ Theiner (2014) refers to this "hands-off" approach to new technology where regulators seek first to "do no harm" to give entrepreneurs sufficient scope to create transformative products without fear of being stifled by "precautionary" regulations and bureaucratic red tape as a policy of "permissionless innovation."

comparison between countries to determine how critical of a role regulatory policies play in either promoting or stifling mobile money and other related financial innovations.

Tanzania has been arguably the greatest success story in the mobile money revolution in recent years. By the three factors outlined above, Tanzania was an unlikely setting for mobile money to thrive in. Unlike Kenya, Tanzania has no dominant MNO. The telecom market in Tanzania is highly competitive; it consists of roughly a dozen firms, none of which holds more than a 30 percent market share. Because of its history with communal socialism and the “villagization” movement that resettled much of the population outside the city and into small villages during the post-independence period, Tanzania also relies less heavily on domestic remittances and has a much higher rural population and hence lower urban density rate than Kenya, with only 52 citizens per 1000 km² compared to Kenya’s 92. Tanzania has made considerable progress over the past few decades in its economic and financial freedom rating, now ranking on par with Kenya. However, due to its recent history of socialism which involved an extensive government takeover of the banking sector and its low urban concentration rate, Tanzania’s financial system was far less developed than Kenya’s at the time mobile money was launched, with less than half as many bank branches per 1,000 citizens (GSMA, 2009). As such, the country lacked the bank penetration “sweet spot” that many researchers insisted was so critical to the success of M-PESA’s agent network in Kenya (Donovan, 2012, p. 66).

After its slow start between 2008-2011, mobile money has taken off in Tanzania at an even faster pace than Kenya. Although the three socio-economic factors outlined above might’ve contributed to some degree to the *slower* uptake of mobile money in

Tanzania, the impetus for its drastic turnaround can be traced to specific policy reversals taken in the years after mobile money was introduced whereby regulators, seeing the success of Kenya's "test and learn" approach, began deregulating mobile financial services and relaxing the rules they had earlier imposed on MNOs and their agents.

Following the CBK's lead, early on the Bank of Tanzania (BOT) issued "letters of no objection" that permitted Vodacom to offer mobile money without being subjected to the same onerous KYC-AML rules that made it impossible for them to reach poorer rural citizens (Di Castri & Gidvani, 2014). However, mobile money didn't fully take off in Tanzania until a few years later after the BOT began to emulate Kenya and embark on more extensive deregulations. In 2011, the BOT began allowing new entrants into the mobile money market, bringing the number of mobile money providers up to four in 2013 with 14 banks who offered compatible mobile banking services. The BOT also codified its relaxed agent banking guidelines, greatly reducing the KYC-AML burden on banking agents and moving responsibility for ensuring agents were complying with existing laws from MNOs to their sponsor banks. This liberalization led to a sharp rise of mobile money from only 211,000 accounts and 2,700 agents in 2009 – two years after it first launched – to 32 million accounts and more than 153,000 agents by 2013 across seven different MNO providers and dozens of affiliated banks (Ondiege 2015, p. 20). Today, Tanzania leads the region with more than 41 million mobile money accounts, or roughly 80 percent of its total population (CGAP, 2014). As in Kenya, the meteoric rise in mobile money has prompted dozens of partnerships between banks and MNOs that have increased financial inclusion. According to the BOT, the number of citizens with

access to formal financial services in Tanzania quadrupled from 3.2 million in 2009 to 13.3 million in 2015 thanks in large part to mobile banking (CGAP, 2014).

Over the past few years, scholars have investigated what factors led to Tanzania's recent success (IFC, 2010; GSMA, 2015; Ondiege P. O., 2015; GSMA, 2009). Although they all highlight different factors that helped contribute to this rise ranging from adopting the business model to fit the Tanzanian market and increasing public awareness, a common theme across these reports is the BOT succeeded in emulating the CBK's successful deregulations to create an enabling regulatory environment. According to the GSMA (2014, p. 54), the fact that Tanzania's mobile money market has flourished can be largely attributed to its "conducive regulatory environment" and the fact that the BOT made the "progressive decision at the outset...to let regulation follow innovation and support financial inclusion." Di Castri and Gidivani (2014, p. 4) likewise noted that the recent explosion of mobile money in Tanzania has been "driven by the market and enabled by a regulatory environment that promotes digital financial inclusion."

Another prominent success story in the mobile money revolution in recent years has been Uganda. The Bank of Uganda (BOU) and the Ugandan Communications Committee (UCC) emulated the successful "enabling" policies in neighboring Kenya and Tanzania. Between 2011 and 2013, they released a series of guidelines that allowed multiple e-money issuers to enter into the market and contract with agents across the country under significantly simplified KYC-AML laws (Ondiege, 2015).³⁸ As a result of

³⁸ As Ondiege (2015, p. 20) notes, just like in Tanzania the only major requirement for MNOs with regards to agent banking is that they must establish formal partnerships with commercial banks. These banks are

these enabling policies, the number of mobile money subscribers in Uganda rose from 2.9 million in 2011 to 8.9 million by the end of 2012, nearly double the 4.9 million bank accounts in the country as of December 2012 (*ibid.*, 2015, p. 20). In 2015, Uganda reached 18.5 million mobile money subscribers, roughly half its total population. The five largest MNOs in Uganda have partnered with commercial banks and now offer mobile banking accounts through the mobile money platforms. The result of these policy-induced changes has been an unprecedented rise in financial inclusion. According to a 2013 FinScope survey, the share of Uganda's population that has access to formal financial institutions nearly doubled from 28 percent in 2009 to 54 percent in 2013; their access to non-bank formal financial services rose from 20 to 52 percent (Finscope, 2013).

Arguably the most profound impact of mobile money and the most persuasive counterexamples to the notion that the three aforementioned criteria must be met for mobile money to thrive comes from the economically distressed countries of Zimbabwe and Somalia. According to the 2016 Economic Freedom of the World Index, Zimbabwe ranks near the bottom of SSA countries in terms of economic and financial freedom. It also has a low population density ratio (only 35 inhabitants per 1000 km²) and no telecom provider with a dominant market share. Moreover, Zimbabweans have only recently begun embracing mobile money thanks to the cash shortages they experienced in the years after its dollarization in the late 2000s following the hyperinflation of its domestic

responsible for ensuring that their agents strictly comply with KYC-AML and other stipulated regulations. Although this is a form of regulation, it is still a step in the direction of financial liberalization, as banks and MNOs were already collaborating before the passing of these rules because MNOs realized banks had a comparative advantage in helping them comply with the minimal KYC-AML laws they were subjected to.

currency (Vasilogambros, 2016; Gambanga, 2016). Fortunately, Zimbabwe emulated the successful policies adopted in Kenya, Tanzania, and Uganda and allowed multiple MNOs to offer mobile money services through banking correspondents while being subjected to much lighter regulatory scrutiny with regard to KYC-AML laws and other regulations. Since the launch of Econet's EcoCash in 2013, more than 7.3 million Zimbabweans have registered for mobile money accounts – more than half of its total population (Levin, 2013). Over the past few years, mobile money has become the most trusted and reliable way to hold and transfer money in Zimbabwe, largely displacing cash (Gambanga, 2016).

A similar story is unfolding in the conflict-torn nation of Somalia. Although Somalia has one of the lowest population density ratios in Africa (only 16 citizens per 1000 km²) and some of the lowest economic and financial development indicators in the world, the country enjoys vibrant competition in its cell phone market with seven MNOs, the largest (Hormuud) having only a 40 percent market share (African Telecom News, 2016). Three MNOs now offer mobile money services, and according to the World Bank as of 2014 roughly two-thirds of adults regularly use mobile money (World Bank, 2014). Although Kenya is regarded as the poster child for mobile money, Onyulo (2016) argues:

Somalia is often overlooked...even though [M-PESA] is having a more profound impact...The country's banking system – devastated by years of conflict and economic disruption – has been supplemented, if not replaced by, mobile money.

Zimbabwe and Somalia are uniquely illustrative case studies for two reasons. First, neither meets any of the three criteria that earlier authors emphasized. They each have no dominant telecom provider, low urban-rural population ratios, and an exceedingly under-developed banking sector. Second, they provide arguably the starkest

examples of the transformational benefits that mobile money is having on the lives of the poor. Both have some of the lowest quality *political* institutions and highest thievery rates in SSA. And since both countries have experienced high rates of inflation and financial instability in their recent history, they suffer from low quality *monetary* institutions. In fact, most citizens rely on foreign currencies. In this environment, mobile money has had arguably its greatest impact. It has also begun to demonstrate its ability to promote competition between national currencies so citizens can hold their wealth in more stable currencies.³⁹

Table 1 summarizes the country-level information from these SSA countries. As the table clearly shows, these countries differ widely on a variety of dimensions – population density, economic and financial freedom, telecom market share, etc. Yet the common denominator across all these countries is that they’ve adopted a more “hands-off” or enabling approach to regulating financial innovations like mobile money.

Table 1: Enabling Mobile Money Environments in SSA

Country	Enabling	Dominant Telecom	Optimal population density	Moderate Economic Freedom	Colonial Ancestry	MM Accounts (mill/pop%)
Kenya	Yes	Yes	Yes	Yes	British	30.0 (80%)
Uganda	Yes	No	Yes	Yes	British	18.5 (60%)
Tanzania	Yes	No	No	Yes	British	41.4 (80%)
Zimbabwe	Yes	No	No	No	British	7.35 (66%)
Somalia	Yes	No	No	No	British*	7.25 (66%)

³⁹ A more detailed discussion of the benefits that citizens might accrue from competition between national currencies is beyond the purview of this paper. However, this issue has been addressed by other scholars, most notably F.A. Hayek in his pamphlets *Denationalization of Money* and *Competition in Currency*.

The most recent data from around the world lends strong support to the claim that creating an enabling regulatory environment is the single strongest predictor of a thriving mobile money market. Even though the population in nations *without* enabling policies is more than twice as large, the number of active mobile money accounts is more than *220 percent higher* in countries that have adopted enabling policies (Di Castri, 2015).

The region with the highest ratio of enabling regulatory environments is SSA. Not coincidentally, SSA remains the mobile money revolution's greatest success story. In recent years, mobile money has also taken off in a number of new SSA markets including the Democratic Republic of Congo, Zambia, Rwanda, Burundi, Malawi, Namibia, and Madagascar. These countries vary dramatically on a variety of economic and socio-political dimensions. But the one factor they all share in common with respect to mobile money is that they have succeeded in removing repressive regulations and emulating the more *laissez-faire* regulatory approach first adopted in Kenya in 2007. This explains why more than half of the mobile money accounts in the world – roughly 220 million – are in SSA. In fact, all of the 13 countries where at least 10 percent of adults are using mobile money globally are in located in SSA; 19 markets have more mobile money accounts than bank accounts (GSMA, 2015). The World Bank recently reported that the overall share of adults in SSA with any type of financial account jumped from 24 percent in 2011 to 34 percent in 2014, and they attribute most of this growth to the rise of mobile money.

Ultimately, the success of these market-led approaches to financial development in SSA – perhaps the least likely region of the world to host a market-oriented success

story – provides a compelling case study of the validity of the financial liberalization hypothesis with respect to financial inclusion and innovations like mobile money.

The Failure of Mobile Money in Non-enabling Environments

The importance of establishing an enabling regulatory environment and the validity of the “financial liberalization” hypothesis with respect to mobile money is perhaps most powerfully evidenced by the colossal failure of mobile money to take hold in countries that choose not to sufficiently liberalize their regulatory environment. Again, to ensure that we are comparing apples to apples, in discussing the failure of non-enabling policies I restrict my focus to a subset of countries that were formerly British colonies and hence all maintain some elements of common law and who rank no lower than any of the aforementioned countries where mobile money has thrived – namely, Nigeria, Ghana, and South Africa. What makes these countries such illustrative case studies is that in most cases they actually meet *more* of the criteria that researchers outlined for what would make for a successful mobile money market than the success stories. Nevertheless, repressive regulations have caused mobile money to languish in these countries.

Perhaps the greatest modern day case study in how overregulation can hamper financial inclusion is Nigeria. Nigeria is one of Africa’s largest economies and the most populous country in SSA. According to the three factors outlined above, it should’ve been one of the brightest stars in the mobile money revolution. Nigeria has one of the highest population density rates in all of SSA, with a half dozen urban centers with a population greater than 1 million and a large number of rural communities who rely on

urban remittances. It also has some of the deepest cell phone penetration rates in all of Africa. By 2012, Nigeria had more than 100 million mobile subscriber, more than 90 percent of its adult population. Nigeria also had a dominant telecom provider in MTN, which holds a two-thirds market share (roughly the same as Safaricom). Finally, Nigeria had the ideal combination of moderate economic and financial freedom and low rates of financial inclusion; in 2016, it's index of economic freedom ranking was 116 – putting it in the same ballpark as Kenya (115) and Tanzania (110) its financial inclusion rates were below 20 percent, meaning there was a pent up demand for affordable financial services.

Unfortunately, the Nigerian government has long insisted on imposing significant regulations on mobile money and agent banking. From the outset, it excluded MNOs and other nonbank providers from issuing mobile money and other digital payment services; instead, they required all digital payment services had to be operated by government-approved banks (Ondiege 2015, p. 25). Although the stated justification for these policies was to “protect consumers,” the reality was that the Nigerian government caved to “opposition from strong banking lobbies” who were intent on limiting the development of mobile money (Saigal, 2015). Banking lobbyists convinced Nigerian regulators to require MNOs to offer their payment services through a formal partnership with a formal bank; they also prevented MNOs from directly contracting banking agents in any capacity. The Nigerian government also chose to impose steep transaction taxes on all mobile payments.

The failures of these repressive policies and this “bank-led” model are plainly evident in Nigeria⁴⁰, where mobile money has had virtually no discernible effect on financial inclusion or e-commerce (Penicaud & Katakam, 2013; Llewellyn-Jones, 2016). In 2014, five years after mobile money was first launched Nigeria had less than 800,000 mobile money customers – less than one percent of its population (EFInA, 2014).

The initial results were just as bad in South Africa. Despite the fact that South Africa has a moderately high urban population density rate, enjoys a vibrant telecom market with virtually universal cell phone access, and has millions of unbanked citizens, in the six years after launching M-PESA the service has only registered 76,000 accounts (Mbele, 2016). Ghana experienced similarly disappointing results in the first few years of its mobile money services. Only a few thousand accounts were opened in its first five years, and millions of potential customers remained beyond the reach of mobile financial providers (GSMA, 2015).⁴¹ In both cases, this slow uptake was due largely to the same repressive policies that were employed in Nigeria and other non-enabling countries. As a result, their financial inclusion rates have stagnated relative to their enabling neighbors.

⁴⁰ Bobby Collymore, CEO of Safaricom, made it clear that the greatest reason that mobile money had failed in Nigeria was because of its “hostile” regulatory environment. “The Nigerian ambassador in Nairobi is often on my case about how we can get something like M-PESA to take off there. I say to him, ambassador, please don’t waste my time, because your regulator doesn’t want this to happen. If your regulator doesn’t want this to happen then it won’t!” (Saigal, 2014). In his review of the Nigeria market, Ondiege (2015, p. 25) concluded: “in countries where regulators do not allow [MNOs] to set up effective distribution networks or to register, identify, and activate clients such as in Nigeria, financial inclusion is constrained.” Akinyemi (2014) likewise concluded that: “mobile money’s potential [in Nigeria] has been hamstrung by the exclusion of mobile operators and... a powerful, and often hostile, banking lobby.”

⁴¹ In the past year, however, the Bank of Ghana has taken steps towards creating an enabling environment. It issued new regulatory guidelines along the model successfully employed in Kenya and elsewhere. These policies include proportionate, risk-based regulation, reduced barriers to entry in the mobile money market, and a relaxation on the KYC-AML laws imposed on agents and other non-bank service providers. Even though these enabling policies are still in their early stages and data is still being collected, these policy changes have evidently resulted in a surge in the mobile money market in Ghana. In the past year alone, more than 20 percent of Ghana’s adult population has opened a mobile money account (*ibid*).⁴¹

Table 2 summarizes these results from a subset of SSA countries who failed to create an enabling environment for mobile money.⁴² The lesson from SSA’s experience clearly shows that regulation can play a critical role in stifling financial innovations.

Table 2: Non-enabling Mobile Money Environments in SSA

Country	Enabling	Dominant Telecom	Optimal population density	Moderate Economic Freedom	Colonial Ancestry	MM Accounts (million)
Nigeria	No	Yes	Yes	Yes	British	< 0.8
Ghana	No	Yes	Yes	Yes	British	< 0.2
Botswana	No	Yes	Yes	No	British	NA
S. Africa	No	Yes	Yes	Yes	British	< 0.3

Unfortunately, a number of central banks around the developing world haven’t learned the lesson. They “continue to maintain any form of banking must be undertaken by licensed deposit taking institutions, which excludes MNOs” Ondiege (2015, p. 25). In an editorial written in 2012 when Kenya was the only real success story in the mobile money revolution to date, *The Economist* noted, “many of the poor countries that would most benefit from mobile money seemed intent on keeping its suppliers out – mainly by insisting they should be regulated like banks” (Economist, 2012). Although these trends have begun to reverse and many more nations are beginning to adopt the “Kenyan model,” the fact that mobile money has failed in every nation where regulators have refused to liberalize their laws it is a powerful argument for the role that political

⁴² The results are even worse in nations like Ethiopia that maintained their state-run telecom monopolies. These nations have the lowest mobile penetration rates in SSA and mobile money is practically nonexistent.

institutions play. The GSMA concluded their report on what policies best supported mobile money aptly:

While all external factors influence the design and implementation of a mobile money service, *only regulation seems to pose challenges too great for a service to overcome* (di Castri, 2013, p. 3) [*emphasis added*].

Conclusion

World Bank President Jim Yong Kim opened the World Bank/IMF Annual Meetings in 2013 with a bold claim: “Universal access to financial services is within reach,” he said, pointing out that since the start of the World Bank’s initiative to promote financial inclusion that more than 50 countries had committed to financial inclusion targets. “If they fulfill their commitments, and if [other governments] also set bold targets...then we can reach universal access by 2020.” This notion that government planning plays an essential role in achieving inclusive financial development captures the essence of what I elsewhere have referred to as the “state-led” approach to financial development. In many ways, this idea derives from the ideas that justified state planning that were highly influential in development economics in the early postwar period; the support for government planning, in general, and financial sector planning, in particular, was especially popular in SSA in the post-independence era. With the support of international organizations like the IMF and the World Bank, many nations have tried to increase financial inclusion by relying on heavy doses of direct or indirect state planning.

The results of these efforts to achieve inclusive financial development through a variety of state-led approaches have been an abysmal failure. Nowhere have the failed results of these policies been on more vivid display than in SSA, where for decades measures of financial inclusion and deepening stagnated and declined in the wake of

various government-led efforts to engineer financial sector development. Although many historical leaders in SSA as well as present day policy advisors like Kim likely have the best of intentions, the means they so often choose to achieve their desired ends – relying to varying degrees on top-down government planning – have at best been ineffective and at worst completely counterproductive. In light of these failures, even the World Bank has acknowledged that that “the scope for direct government intervention in improving access is more limited than often believed” (World Bank, 2008, p. 16).

The mobile money revolution in SSA provides arguably the most compelling modern day illustration of the failure of the state-led approach and the success of more market-oriented approaches to financial development. Across SSA, the countries that have experienced the best results have been the ones where government has created an “enabling” environment for entrepreneurs and then in effect, stayed out of the way. In many ways, the examples cited here can be viewed as confirming the validity of the “financial liberalization hypothesis” with respect to promoting financial inclusion.

The key takeaway of my analysis can be summarized simply: although there are a variety of socio-economic conditions that might influence how well mobile money does in a particular country, by far the most important factor in predicting the success or failure of mobile money is whether the government creates an “enabling” regulatory environment. The implications for policymakers are very straightforward. The best way to promote inclusive financial development is to adopt enabling or “laissez faire” policies. There are two key aspects of this approach. First, policymakers should remove barriers to entry in order to allow new entrants into the market for financial services,

including MNOs and other non-traditional firms who might have a comparative advantage in reaching the poor. Second, policymakers should scale back – and, in some cases, eliminate entirely – “repressive” regulations such as KYC-AML laws, minimum deposit requirements, and other policies that raise the costs of servicing low-income citizens. Allowing new entrepreneurs into the market who are more likely to have both the specialized knowledge and proper incentives to provide higher quality services is the best means of achieving the desired end of inclusive financial development (Powell, 2008).

Fortunately, more and more developing countries are beginning to embrace these lessons. Between 2008 and 2015, the number of countries around the world that have embraced an enabling regulatory environment has risen from only a handful to 51 of the 93 countries (GSMA, 2015). According to the GSMA (2015), there are now 271 mobile money services available in 93 countries servicing more than 411 million customers, up by more than 100 million from the preceding year. Globally, the mobile money industry processed more than 12 billion transactions in 2015, more than double the number of payments that PayPal processed globally. What is most exciting to many observers is that even though mobile money has already enjoyed enormous success, it has only reached about one-tenth of the unbanked in the developing world, so it still has enormous growth potential. Moving forward, the best thing that economists and policy advisors can do is build on these lessons learned in Kenyan and other SSA nations and advise governments to adopt a “hands off” approach to regulating innovative products like mobile money.

Thanks to these remarkable success stories in SSA, policymakers luckily won't have to start from scratch.

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