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Abstract

This paper uses pooled data from Turkey's largest microfinance organization to test if loans increase borrower income in the sample. Using savings deposits as a proxy for borrower income, the results show a statistically significant, positive correlation between loans and savings behavior, *ceteris paribus*. This suggests that microfinance is an effective tool for poverty reduction in Turkey. Since there is no prior quantitative study on microfinance in the country, this study is of interest to Turkish policymakers.

This paper first outlines existing literature on financial intermediation and growth. It then describes the development of Turkey's banking industry and its nascent microfinance sector. In light of the country's ambition to become a high-income country and to gain EU membership, there is an incentive to allow Turkey's microfinance sector to thrive. The paper concludes with policy recommendations on ways to integrate microfinance into the formal banking sector.

Financial Intermediation, Growth, and Microfinance in Turkey: A Quantitative Study¹

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MASTERS THESIS

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¹ The analysis and conclusions set forth are those of the author and do not indicate concurrence by managers or board members of the Turkish Grameen Microfinance Program (TGMP).

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Introduction

For decades, the Republic of Turkey has endeavored to attain a level of economic development at par with industrialized countries. Turkey has largely achieved its industrialization goals; it is the world's seventeenth largest economy and an "emerging market" in terms of financial sector sophistication. While the country continues to refine its economic policies and gain global competitive standing, Turkey must also broaden its economic base by addressing the productive potential of its poorest citizens. Doing so would help reduce unemployment and enhance its ability to meet EU membership requirements. Turkey's challenge is to develop sustainable practices that allow its lowest-income segments to benefit from the growth and prosperity of the middle and upper economic tiers.

Globally, microfinance has offered a path for nations to develop their lowest-income sectors without relying on donor aid. Turkey's microfinance sector, which consists of only two organizations, represents large growth potential. If indeed this industry can help reduce poverty, then there is a basis for public authorities to help microfinance institutions thrive.

While there are numerous qualitative studies on the impact of microfinance globally, quantitative studies that definitively address the impact on income are few. Since data was previously unavailable, this paper presents results from the first quantitative study on the microfinance sector in Turkey.

The purpose of this study is to offer an initial quantitative assessment of the impact of microfinance on borrower income in Turkey. This analysis uses data from Turkey's largest microfinance organization, known as the Turkish Grameen Microfinance Program (TGMP). This data provides an initial step towards understanding the relationship between loans and borrower income – proxied by total savings deposits and balance on savings– holding a host of other

factors constant. This analysis is useful to predict outcomes for future borrowers with similar characteristics to those in the study, and also helps to explain what factors are correlated with borrower success. A controlled experiment would be a necessary next step for researchers and policymakers alike.

The results of this quantitative analysis suggest that microfinance in Turkey has been an effective tool for poverty reduction. Total loan amount received and total deposits made by a borrower have a statistically significant, positive correlation, holding a number of other factors constant. This suggests that borrowers who receive more in loans on average tend to have higher savings deposits, suggesting that their income is rising. Reverse causality is possible but unlikely, given that all borrowers face the same initial loan ceiling and are not assessed based on default risk; hence, relatively wealthier borrowers do not initially receive higher loans. Moreover, a time variable describing a borrower's duration at TGMP is also positive and statistically significant with respect to total deposits, indicating that borrowers tend to have rising incomes while they are with the organization. This analysis suggests that microfinance has had a positive impact on borrower income from a quantitative perspective, although further studies are necessary to verify that such an effect indeed exists.

This paper will proceed as follows:

The next section of this Introduction will briefly outline microfinance.

Chapter One presents a theoretical argument based on the economic literature for why financial intermediation causes growth. According to this literature, financial intermediaries cause economic growth by pooling individual savings and making investments in productive assets, which raise income. Chapter One also describes how financial autarky harms social welfare in an economy, which provides a justification for public policy intervention to encourage

bank formation in sectors where none exist. The microfinance target population is one such example of a hitherto “unbanked” sector around the world.

Chapter Two describes Turkey’s context in the areas of economic and financial development. After presenting a current portrait of Turkey as an emerging market with ambitions to join the European Union, the chapter will offer a historical overview of Turkey’s development and banking sector policies. Finally, Chapter Two will describe the current status of microfinance activities in Turkey.

Chapter Three presents the empirical analysis of data from Turkey’s largest microfinance organization, the Turkish Grameen Microfinance Program (TGMP). The analysis seeks to uncover what association the microcredit program has with total deposits per borrower. The study indicates that there is a positive association between total loan amount and total deposits. As a check on robustness, a second test uses savings balance per borrower as an outcome variable. These results also indicate a positive relationship between total loan amount and balance on savings per borrower, *ceteris paribus*.

Chapter Four summarizes the findings of the study and makes suggestions for additional research.

Chapter Five offers policy recommendations with respect to the entry of microfinance institutions into Turkey’s formal banking sector. If Turkish microfinance institutions could pool larger quantities of savings from the public, they could be more financially sustainable. In addition, such a policy would permit government regulation of a sector that has command over a swelling portfolio of private funds.

Microfinance: A brief summary

According to the World Bank, around 2.5 billion people have no formal bank account, representing most of the world's poor. In developing countries, 59% of adults are “unbanked,” compared to 11% in developed countries (Demirguc-Kunt and Klapper 2012). Without access to formal financial markets, particularly in developing countries, non-bank agents must meet the demand for finance. Low-income individuals worldwide often borrow from family and friends; however, these sources are inadequate for large loans (Aryeetey and Udry October 1995). In addition, informal moneylenders tend to charge extraordinarily high interest rates, ranging from 50-200% on an annualized basis (Collins, et al. 2009). Because the world's poor have erratic income streams and little collateralizable wealth, obtaining loans from commercial banks is often out of the question. Consequently, many have argued that the poor are stuck in a “poverty trap” (Sachs 2005, Collins, et al. 2009).

Microfinance is a family of financial services designed for the world's poor. Microfinance institutions (MFIs) primarily provide loans, known as microcredit, but also may provide deposit accounts, insurance, equipment leasing, money transfers, education loans, and a host of other financial products for low-income people. As a form of poverty alleviation based on market principles, microfinance has been presented as an alternative to donor aid, debt relief, and charity-based initiatives. Since the world's poor are overwhelmingly “unbanked” – lacking access to traditional finance via the formal banking sector – microfinance offers a tool for investing in a microenterprise, increasing one's income, and managing irregular income streams.

While various quasi-microcredit institutions were available to the poor since the Middle Ages, modern microcredit began more recently. In 1976, Muhammad Yunus, the global pioneer of microfinance, launched what would become Grameen Bank in his home country of

Bangladesh. Some of Grameen Bank's founding principles are to extend banking facilities to the poor, to create opportunities for self-employment, and to offer women some tools for financial independence (Grameen Bank 2013). Yunus, who won the 2006 Nobel Peace Prize, states that every individual is a born entrepreneur (Yunus, Lecture for Yunus Center 2012).

Following the example of Grameen Bank, microfinance became a global trend. ACCION International, the Self-Employed Women's Association Bank in India, Bank Rakyat Indonesia, and FONDEP of Morocco are just a few examples of the thousands of microfinance programs in operation today. Most MFIs started as non-profits yet charge interest rates to cover operational expenses. During the 1990s, many MFIs became legal commercial banks, such as BancoSol of Peru. In addition, the commercial banking sector started downscaling to accommodate low-income borrowers, particularly among state-owned banks. Private retail banks have also experimented with microfinance, although there is great potential for the commercial microfinance sector to grow (Drake and Rhyne 2002). Today, the concept of inclusive financial systems is promoted by World Bank, government development agencies, the G20, and global financial standard-setting bodies such as the Basel Committee on Banking Supervision (CGAP 2012).

Microfinance meets demand of low-income clients in several ways. Unlike traditional banks, MFIs offer credit to the poor who lack physical collateral, often by employing a joint-liability repayment system. For example, Grameen Bank's model bundles individual loans into five-member borrower clusters. Borrowers within a cluster guarantee the repayment of each other's loans. Defying conventional wisdom, well managed MFIs have excellent repayment rates – Grameen Bank boasts a 96.6% loan recovery rate (Grameen Bank 2013). In addition, most microfinance institutions send loan officers directly to the neighborhoods and homes of their

clients, unlike a traditional bank. Most MFIs do not obligate borrowers to sign a legal agreement, since this can be a daunting obstacle for semi-literate populations. Many MFIs also monitor the socio-economic progress of borrowers and their families. Some programs also offer business training courses to borrowers.

Today, the microcredit industry has over \$70 billion in assets and around 200 million clients around the world (CGAP 2012). Most MFIs are found in South Asia, particularly India, as well as in Latin America and sub-Saharan Africa (Gonzales 2009). Microfinance is relatively underdeveloped in the Middle East, Eastern Europe, and Central Asia. In Turkey, only two microfinance organizations exist. Despite millions of Turkish citizens who live under the poverty line, especially women, these two MFIs together have only around 65,000 borrowers. This nascent sector embodies significant growth potential, which could help reduce poverty for several million Turks and help the country achieve high-income status.

To understand the mechanisms involved with respect to microfinance and growth, it is necessary to first understand the economic role of financial intermediation more broadly. According to the literature on financial intermediation and economic growth, banks help economies grow by pooling individual savings and making investments in productive assets. Productive assets, in turn, cause economic growth and raise per capita income. The next chapter will explain this theoretical relationship in more detail, and compare with existing empirical studies.

Chapter 1: Theory of Financial Intermediation and Growth

Measuring economic growth

A central question of economics – and of development economics in particular – is the identification of factors that cause growth. Notably, “growth” and “economic development” are not identical. A neoclassical definition of economic growth is the “expansion of real output per capita and per worker over time,” typically measured in terms of a country’s real GDP or GNP per capita (Roberts and Setterfield 2007, 14). While growth is a measure of aggregate output, the definition of economic development is an elusive, debatable concept. Development economics, a separate discipline from classical economic theory spearheaded by Adam Smith in 1776, is not yet a century old.

Structuralist perspectives on development focus on the interrelationships between social and economic actors (Taylor 2004, i). This perspective draws from neo-Marxism and from dependency theorists such as Wallerstein (1979), who heavily criticize market-based approaches. Likewise, the sustainable development literature has often criticized neoclassical economics for its focus on “utility” as a measure of individual wellbeing. Because traditional economic indicators of social welfare are based on aggregate per capita material goods, this approach neglects health indicators, education, social rights, and distributional outcomes. Several critics offer a “capability approach” to measuring quality of life, pioneered by Amartya Sen (1985, 2005) and Martha Nussbaum (2003). From this perspective, individuals achieve a higher standard of living insofar as they can achieve personal aspirations (Spillemaeckers, Van Ootegem and Westerhof 2011).

Taking these perspectives into account, real income is not the sole determinant of wellbeing for individuals living in society's most destitute segments. Nevertheless, per capita real income remains a widely used measure for individual wellbeing because it is objective and widely available in national data sets.¹ As such, this paper uses a neoclassical definition of economic growth: economic growth is thought to be achieved when individuals see a rise in real income; rising real income, in turn, reflects increased individual welfare.

A distinction must also be made between macroeconomic growth, measured by GDP, and poverty reduction. While rising real incomes in the economy as a whole may indicate a parallel rise in productive activity, rising real incomes in a particular segment of the economy – such as low-income groups – does not necessarily imply a rising GDP for the country as a whole. Nevertheless, as this study focuses on productive activity through the creation of microbusinesses in Turkey's low-income segment, rising income levels within this segment is taken as an indicator of a rise in productive activity.² Whether or not this contributes to Turkey's GDP is grounds for another study.

Savings accumulation and growth

Considering that rising real (per capita) income is a key indicator of economic growth and poverty reduction, development economics endeavors to identify factors that cause real incomes to rise. Factors that can be manipulated by policymakers are of particular interest.

¹ Household-level consumption and income are, in practice, the most widely used measures for measuring living standards across countries. See for example: *World Resources 2005 -- The Wealth of the Poor: Managing Ecosystems to Fight Poverty*, World Resources Institute, Chapter: "Quantifying Poverty"; Martin Ravallion (1992), *Poverty comparisons: a guide to concepts and methods*, Living Standards Measurement Study (LSMS) Working Paper No. 88., Washington, DC: The World Bank.

² A confounding factor is the possibility that the government makes income transfers to low-income households over the period of the study. In this case, rising incomes is not a reflection of productive activity, but rather rent distribution. In this particular study, however, all borrowers fall below Turkey's poverty line; therefore, income transfers that may occur broadly to this population would apply to every household, precluding the need to control for this variable. Nevertheless, since transfer amounts may vary depending on specific household characteristics, further study is necessary to understand this potential omitted variable.

Endogenous growth theory refers to a subset of development economics in which the growth rate can be determined by one or more variables contained within a model. The underlying aim is to identify policy levers that can be operated from within the economy. Presumably, if policymakers can control factors that lead to growth, underdeveloped or impoverished societies may be able to design programs to improve their populations' welfare.

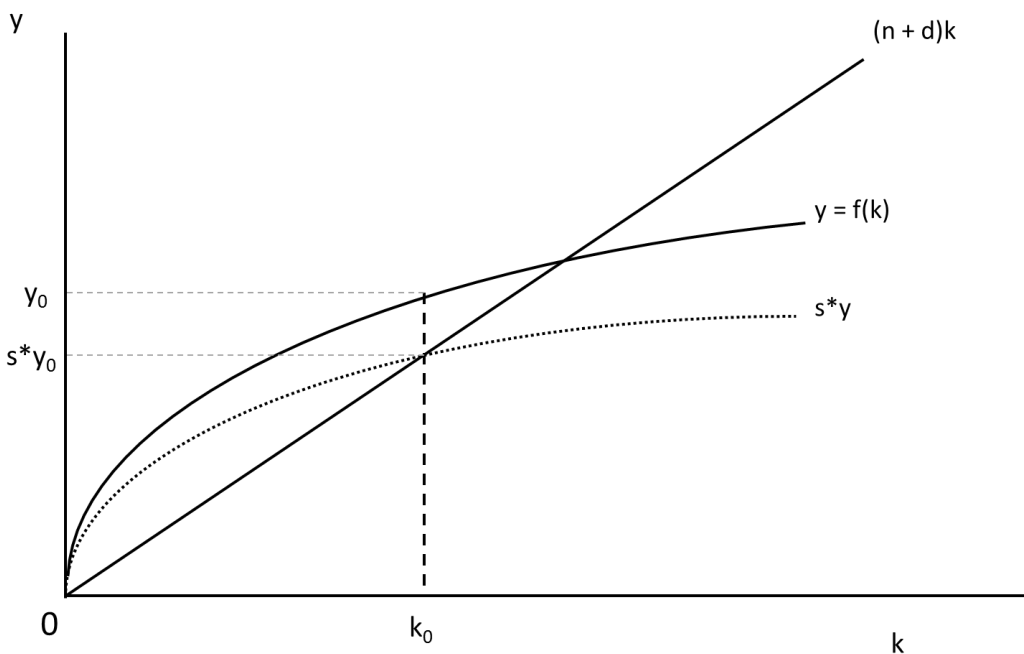
The central preoccupation of endogenous growth theory is the role of savings accumulation. The heart of this theory is as follows: by accumulating savings, economies can redirect current consumption (or real income) to productive investment; such productive investment will increase future per-worker real output. Savings represents a self-financing mechanism that can make investment possible. If savings accumulation is in fact a policy lever for economic growth, then countries should encourage domestic savings in order to finance investment in efficiency-enhancing activities, such as machines (physical capital) or education (human capital).

Early growth theories identified the importance of a country's savings ratio, or the percent of total output that is reinvested in capital. The 1948 Harrod-Domar model assumed that only capital stock, and not labor, influences output (Harrod 1948, Domar 1947). Economic growth occurred through capital accumulation, represented by a rising share of physical assets such as roads, infrastructure, and machines. As such, achieving economic growth required countries to increase their savings ratios so that they could invest in efficiency-enhancing capital. Lewis³ (1954), Rostow (1960), and Fei and Ranis (1964) likewise underscored the need for a rising savings ratio in underdeveloped economies.

³ Lewis' Dual-Sector Model was an endogenous growth model that claimed economies could achieve self-sustaining industrialization through domestic investment. Development required employing a country's "idle" agrarian sector. Consequently, development required economies to transition from agriculture to a "modern,"

The foundational neoclassical growth model, which formed the basis for modern endogenous growth theories in the 1980s, was introduced by Solow (1956) and Swan (1956). In the Solow-Swan dynamic model, the long-term growth rate of an economy is determined by the population growth rate n . At the equilibrium steady state, output per worker is constant, so that while the economy grows, living standards do not improve. To maintain a steady level of per capita output, an economy must maintain a minimum level of savings in order to replace expended capital and accommodate population growth. An increase in the savings rate increases the steady-state level of income per capita. The economy “develops” while making this jump from one steady state to the next, such that all citizens experience a higher per capita level of income, after which point the economy again stabilizes at the growth rate n . The savings rate therefore plays a vital role in increasing an economy’s social welfare. To the extent that a country can manipulate its savings rate, the model allows for endogenously determined growth.

industrial economy. Upon observing that many economies become industrialized but nonetheless encounter rising poverty and income gaps, scholars began to question this theory of growth.

Figure 1: Solow growth model

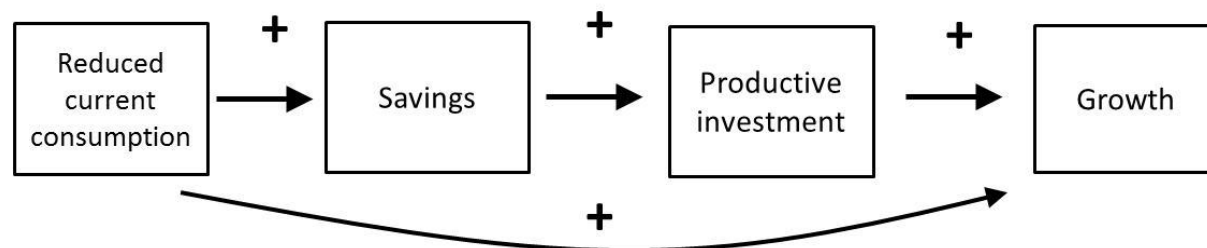
According to the Solow-Swan model, each economy has a natural ceiling on its savings rate. Namely, an economy cannot save more than its annual real income, or total output. The greater question, then, is what determines the height of the country's production function. Like the Harrod-Domar model, the Solow-Swan model concluded that the exogenously-determined level of technological progress – known as the “Solow residual” – determines a country's production function. Technology, or “total factor productivity,” differentiates developed countries from underdeveloped countries, not short-term saving. Technological progress could include education, the strength of a country's legal system, the capabilities of its financial institutions, and other efficiency-enhancing factors (G. K. Shaw 1992).

Solow himself admits that technological progress is at least to some extent endogenous; investment in new (more efficient) capital inevitably advances total factor productivity and shifts

a country's production function upward (Solow 1994). Decades of study endeavored to identify causes of technological progress, culminating in works by Romer (1986) and Lucas (1988), which focus on factors such as human capital. Nonetheless, even these modern endogenous growth theories are based on the neoclassical model developed by Solow, in which an economy's savings ratio has a causal effect on growth.⁴

In particular, savings accumulation has two important effects: since savings are invested in new capital, growth can occur by either raising the savings rate (the volume mechanism) and/or by increasing the efficiency of existing capital, leading to technological advancement and increasing a country's production function (the efficiency mechanism). From this perspective, the Solow-based argument suggests that savings accumulation can cause growth in the short term through greater capital per worker, and in the long term through investment in efficiency-enhancing capital.

Figure 2: Savings and growth



⁴ As mentioned by Bencivenga and Smith (1990, 196), the endogenous growth literature by Romer (1986), Prescott and Boyd (1987), Rebelo (1987), and Lucas (1988) agree that savings behavior will generally influence equilibrium growth rates. "In particular," state Bencivenga and Smith, "to the extent that intermediaries tend to promote capital investment, they will also tend to raise rates of growth" (1990, 196).

Savings and financial intermediation

Paralleling the work on endogenous growth, a key debate is to what extent financial intermediaries influence real output. A financial intermediary is a market actor which borrows from a large number of small lenders, known as depositors, and pools these funds to make larger loans to borrowers (Dutkowsky 2012). Banks make a profit from the spread between the interest rates charged on assets – which tend to be less liquid, longer-term, and higher risk – and the interest rate paid on liabilities – which tend to be more liquid, shorter-term, and have reliable withdrawal patterns. Therefore, the primary role of banks is to finance the demand for investment in the market by pooling individual savings.

Conceivably, financial markets might serve as a policy lever to improve social welfare. In particular, financial development is relevant to segments that are starved of access to savings in order to make investments, such as the target population of microfinance institutions.

The challenge of researchers has been to determine whether financial market development has an independent effect on economic growth. While several studies cite empirical evidence for the positive correlation between real per capita GDP and financial development across countries (Gertler and Rose 1991, Levine and King 1993, Levine 1996), the direction of causality between financial development and growth remains a subject of debate. The pioneer work in financial development was by Schumpeter (1911), who argued that by pooling savings and offering loans to new businesses, financial intermediaries fuel innovation, and therefore bring about growth in real incomes. Pioneers in empirical studies were conducted by Goldsmith (1969), McKinnon (1973), and Shaw (1973). While Goldsmith argues that the financial sector promotes growth by increasing the efficiency of investments (the efficiency mechanism), McKinnon and Shaw argue that financial institutions encourage savings and hence increase an

economy's savings rate, thus increasing the overall investments (the volume mechanism). All three of these studies showed that high growth economies tended to have well-developed financial markets; however, these studies did not provide evidence on the causal direction of this relationship. Robinson (1952) argued that this causality is reversed: economies that are growing attract financial intermediaries that wish to provide capital to already successful businesses. That is, financial development might follow economic growth.

The Solow-based argument – that growth can be endogenously influenced through the mechanism of savings accumulation – fueled new insight into the role of the financial sector on growth. Echoing the Solow model, more recent studies offer evidence that financial intermediation promotes growth via savings accumulation and efficient use of savings through investment in innovative capital, spurring technological progress.

Bencivenga and Smith (1991) were the first to develop an endogenous growth model based on the presence of financial intermediaries. In their model, financial intermediaries promote growth via the volume mechanism: in the presence of banks, individuals facing future liquidity needs shift their composition of savings toward productive capital. Bencivenga and Smith argue that in the absence of financial intermediaries, investment must be self-financed by individual agents, and is therefore severely delayed (196). Financial intermediaries catalyze new investments by offering liquidity to risk-averse savers, who choose to hold bank deposits rather than liquid, but unproductive, assets. By pooling these savings, banks can then direct them toward productive investments, causing the economy to grow.⁵ The model by Jappelli and Pagano (1993) likewise supports the volume hypothesis. In both of these studies, financial

⁵ The Bencivenga and Smith (1991) model also predicts that banks increase an economy's investment in productive assets by reducing the need for entrepreneurs to self-insure against unpredictable liquidity needs by liquidating their investments. "In short," they write, "an intermediation industry permits an economy to reduce the fraction of its savings held in the form of unproductive liquid assets, and to prevent misallocations of invested capital due to liquidity needs." 196.

intermediation causes growth by pooling savings and therefore causing a higher volume of savings in an economy.

In addition to promoting the accumulation of savings, financial development presumably promotes growth via the efficiency mechanism – by increasing the speed by which existing savings are redirected towards productive assets. King and Levin (1993) argue that the greater a country's financial depth (measured by the ratio of liquid liabilities to GDP), the more swiftly idle liquidity can be redirected to private sector actors in need of finance. Their empirical results indicate that, accounting for differing country characteristics, higher levels of financial depth are positively associated with faster rates of economic growth. After integrating a lag period in determining the causal direction of financial depth on growth, they also found that this relationship is significant, suggesting that financial development precedes economic growth on average across countries.⁶ Moreover, they directly refute Robinson's 1952 reverse-causality assertion, instead claiming that "finance does not only follow growth; finance seems importantly to lead economic growth" (730).

In a 1995 study, de Gregorio and Guidotti found this same positive relationship between long-run growth and financial development across countries, with the exception of Latin America. They argue that in this particular region, despite a larger measure of financial depth, poor regulatory controls and hasty financial liberalization in the 1980s actually harmed growth. With respect to the mechanism for financial intermediation's effect on growth, de Gregorio and Guidotti concluded that the main channel is efficiency, rather than volume, of investment (1995).

⁶ King and Levin state, "We find that the predetermined component of financial development is a good predictor of long-run growth over the next 10 to 30 years. Furthermore, higher levels of financial development are strongly associated with future rates of capital accumulations and [...] improvements in efficiency. These results suggest an important link between financial development and long-run growth as suggested by Schumpeter 80 years ago" (719).

De Gregorio and Guidotti's depiction of financial intermediation's effect on growth can be briefly summarized. As previously stated, financial intermediation is thought to increase growth either via the volume of savings (and hence investment) or via the efficiency-enhancing quality of that investment. These two components have separate effects on growth. The production function shows both mechanisms:

$$y_t = f(k_t),$$

where y_t and k_t denote output and the stock of capital at time t , respectively. The aggregate production is assumed to rely only on the capital stock. By differentiating this function with respect to y_t , de Gregorio and Guidotti describe the components of aggregate growth based on two components: the savings rate (equivalently, the rate of change of the capital stock), or dk_t/y_t , and the marginal productivity of capital, $[f'(k_t)]$:

$$\frac{dy_t}{y_t} = \hat{y}_t = \frac{dk_t}{y_t} f'(k_t) = s_t \phi_t,$$

where s_t denotes the savings rate and ϕ_t denotes the marginal productivity of capital at time t . By this equation, the rate of growth equals the product of the savings rate, a measure of the volume mechanism, and the marginal productivity of capital, or the efficiency of investment.

The marginal productivity of capital is assumed to be either constant or increasing as k_t grows.⁷

Financial development influences economic growth either by increasing the savings rate s_t or by

⁷ Gregorio and Guidotti (1995) note that traditional endogenous growth literature emphasizes a decreasing marginal productivity of capital, leading to a steady-state equilibrium in which per capita output growth falls to zero as capital (k_t) grows over time. They claim that new theories suggest that the marginal productivity of capital does not decrease as the capital stock grows. 435.

increasing the efficiency of investment Φ_t . As an additional observation, this equation is analogous to variables in the Solow-Swan growth model: the volume mechanism s_t is equivalent to the rising savings rate s of the Solow-Swan model, while the efficiency mechanism is analogous to a rising production function $f(k)$ in the Solow-Swan model.

The McKinnon-Shaw perspective holds that by encouraging the financial sector to grow – that is, by removing financial repression or by creating policies to encourage banking in financially autarkic sectors – countries can increase their savings rate s_t . This view supports the volume mechanism hypothesis. The Goldsmith perspective, by contrast, emphasizes the effect of banking on the efficient allocation of existing savings to their most productive use. According to various studies, the dominant mechanism for understanding financial intermediation’s effect on growth is the efficiency of investment (Bencivenga and Smith 1991, de Gregorio and Guidotti 1995, Greenwood and Jovanovic 1990). De Gregorio and Guidotti (1995) estimate that one-fourth of financial intermediation’s effect on growth is transmitted through volume of investment, while the remainder (three-fourths) is transmitted through the efficiency of investment (440).⁸ Work by numerous others likewise supports the dominance of the efficiency mechanism (Galetovic and Fernandez 1994, Jayaratne and Strahan 1996, Greenwood and Jovanovic 1990).

Although the debate on financial intermediation and growth is still alive, it appears both logical and well-supported that, at the very least, there is an endogenous relationship between financial development and growth (Montiel 2003, Ndikumana 2005, Greenwood and Jovanovic 1990). That is, while the financial sector promotes efficient investment, good investment likewise attracts financial intermediaries through an “acceleration-enhancing effect” (Ndikumana

⁸ Gregorio and Guidotti, 1995, 440.

2005, 653). Moreover, as an economy's real sector grows, the net worth of potential borrowers increases, making formal financial intermediation more feasible (Gertler and Rose 1991).

Why financial autarky exists

If financial development has a positive effect on economic growth and individual welfare, then it is advisable for policymakers to promote bank formation in sections of the economy suffering from financial autarky. In financial autarky, only individuals exist as lenders instead of banks. In this scenario, financial markets are sluggish due to three sources of financial market friction: the need to match lenders and borrowers with mutually beneficial needs (similar to bartering), asymmetrical information whereby the lender is unsure the profitability of the borrower's venture, and moral hazard⁹ once a loan is made. As such, lending is a costly activity: the costs to the lender arising from these market frictions include brokerage costs, pre-loan project evaluation, and post-loan agency or project monitoring costs.

Financial intermediaries, as opposed to individual lenders, increase the efficiency of financial markets by reducing lending costs through economies-of-scale and other covenants from the borrower.¹⁰ All of these costs together form the "external finance premium." This premium is typically too large for an individual lender to bear. Consequently, banks typically serve as the primary channel for financial intermediation in an advanced economy (Montiel 2003, Gertler and Rose 1991).¹¹

⁹ Moral hazard in the case of financial transactions refers to the asymmetrical costs by contracting parties in the case of default by the borrower: if the borrower defaults, the borrower only loses his or her own potential income stream, while the lender loses both the interest payment from the borrower as well as his or her own principal.

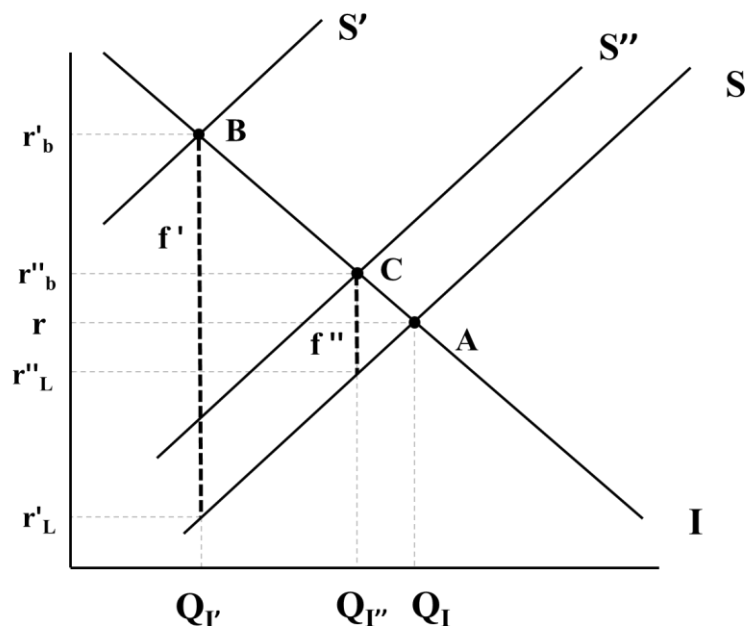
¹⁰ For example, banks require the use of collateral, formally restrict certain behaviors of borrowers, may prefer loans only to short-term projects, or take partial ownership of the business by purchasing equity stakes. Montiel (2003), 194-197.

¹¹ In addition, Boyd and Prescott (1986) and Greenwood and Jovonovic (1990) note that financial intermediaries reduce information costs.

As demonstrated by Montiel (2003) and Gertler and Rose (1991), a lower external financing premium increases the supply of loanable funds in an economy, which allows for a greater amount of loans to be made. A well-functioning banking system can promote growth by reducing this external finance premium and approaching the costless financial transactions, where all available savings, S , are frictionlessly directed toward productive investments (reaching equilibrium at point A in Figure 3). In this ideal world of costless financial transactions, the real interest rate r would be determined by the intersection of the upward-sloping savings schedule and the downward-sloping investment schedule.

In a market without banks, the external finance premium f would make lending prohibitively costly, leading to financial autarky. That is, the supply curve for savings would shift rightward to S' , resulting in an extremely high real interest rate. In this case, the real interest rate paid by borrowers is r'_b , while the amount received by lenders is r'_L . The external finance premium ($r'_B - r'_L$) has the effect of pushing total investments made from Q_I to $Q_{I'}$ (Montiel 2003, 198).

Figure 3: Market for savings

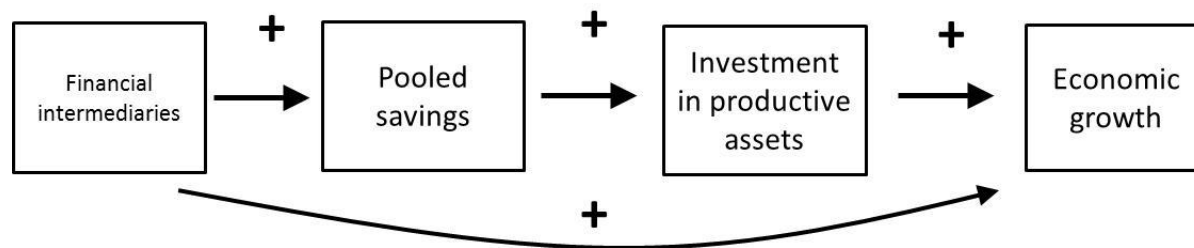


An efficient financial system is able to reduce the external finance premium and thus increase the supply for loanable funds. The savings curve S' would shift rightward to a point such as S'' . The increase in available savings reduces the real interest rate to r''_b and increases investment from $Q_{I'}$ to $Q_{I''}$. By increasing the supply of savings, more productive investment can be made, and income rises. The more that banks reduce the external financing premium in this way, the more the efficiently the financial system runs – that is, the more the savings schedule S'' approaches the socially optimal savings schedule S , which represents a world of no financial costs. The more that savings can be pooled in this way, the more productive investments are made, and the more the economy grows (Montiel 2003, 199).

To reiterate the socially beneficial role of banks, financial intermediaries arise through economies of scale – they pool savings from many small lenders and making many large loans at once to borrowers. In this way, banks reduce the external finance premium while also reducing

the real interest rate on loans. This in turn increases the total amount of loans made in the economy, increasing the stock of productive assets like new businesses, thus leading to growth.

Figure 4: Financial intermediation and growth



Financial intermediation in the case of microfinance

Although the presence of financial intermediaries improves investment in the economy – bringing market equilibrium from point *B* to *C* in Figure 3 – profit-seeking banks nonetheless leave certain market niches unfilled. Banks avoid opaque borrowers, such as individuals who have no written documentation or who have not received previous loans in the formal sector. To reduce agency costs, banks prefer agents with assets that can be used as collateral in the case of a project’s failure, meaning that non-wealthy individuals are less likely to have access to loans. These factors suggest that non-wealthy individuals – who may also be illiterate and have no former experience in the formal financial sector – are often excluded from credit markets. More precisely, Gertler and Rose (1991) observe that the external finance premium depends inversely on borrower net worth. As such, low-income, low-wealth sectors of a population tend to have

higher costs attached for lending.¹² Even if lending to low net-worth borrowers has a positive present value in perfect markets – that is, it is welfare-enhancing – lenders typically refuse these this population. As a result, low net-worth individuals live in financial autarky, and the economy as a whole suffers due to forgone growth-enhancing investment.

At low levels of income, Montiel states that self-finance and informal finance via social relationships are most prevalent, since the external finance premium for banks is prohibitively large (2003). Moreover, sectors of an economy suffering from financial autarky – which is in most cases the lowest-income segments – are subjected to extremely high interest rates, as economic theory suggests. Informal moneylenders in developing countries are known to charge rates from 50-200% on an annualized basis (although maturities on these loans typically no more than a few months) (Collins, et al. 2009, 22). Family and friends may offer low interest rates to borrowers, however these sources rarely give large loans (Aryeetey and Udry October 1995). Because making investments is so costly, the overall level of investment is low, income does not increase, and the poor are stuck in a “poverty trap” as described by Sachs (2005). This holds true for U.S. as well as international data (Gertler and Rose 1991, 9).

Microfinance institutions target these unbanked economic sectors. Sharif (2001) argues from a theoretical standpoint that microfinance institutions contribute to growth in the same way that the commercial sector does, except that microfinance concentrates on the small and informal end of the market. That is, both commercial and microfinance markets accumulate savings, and channel these idle funds to agents in need of capital. Sharif states, “Efficient microfinance markets could therefore be just as important for the growth of the economy as they are for

¹² Costs involved for lending to low net-worth individuals includes not only monitoring costs of the borrower’s entrepreneurial project, but also legal costs in the case of default. Even if lenders can monitor borrower activity, the same might not be true for courts in a murky, often paperless, legal system. Costs of punishments, such as collecting fines or enforcing rules, also increase the cost of lending. Gertler and Rose (1991), 13.

serving the financial services need of poor people” (48). That is, to the extent microfinance markets channel savings to investment in productive assets, they create growth in the same way that commercial finance markets do.

Sharif’s depiction of why microfinance products typically do not exist in formal markets is based on a credit rationing argument¹³; however, a simpler and equally informative explanation is based on Montiel’s explanation for the existence of formal financial markets, described earlier. Microfinance markets can be understood as a separate savings-investment graph superimposed on the commercial finance market in Figure 3. In the microfinance market, because the external financing premium is prohibitively large, the supply of savings is low and the real interest rate observed by borrowers is extraordinarily high. As such, any sort of microfinance service – whether through an MFI or other institutional means – is typically a welcome price reduction on the part of the borrowers, even if microloans have interest rates that exceed commercial rates.

Microfinance and growth

If the growth impact of traditional financial intermediation is empirically understudied, the impact of microfinance is even less so. At the level of individual MFIs, pilot studies and social performance measurements are used to guide program implementation on a practical level (Brune 2009). For example, Grameen Bank of Bangladesh uses ten poverty indicators to “check whether the socio-economic situation of members is improving” (Yunus 2013). However, most in-house studies run by MFIs do not involve a control group to test whether there are mean

¹³ For more information on credit rationing, see: M. Gertler and A. Rose (1994), “Finance, Public Policy, and Growth,” in G. Caprio, I. Atiyas, J. Hanson (eds.), *Financial Reform: Theory and Experience*, Cambridge University Press; J. E. Stiglitz and A. Weiss (1981), “Credit Rationing in Markets with Imperfect Information”, *The American Economic Review*, Vol. 71, No. 3 (Jun), pp. 393-410.

differences between the control and treatment groups over time. Furthermore, since borrowers in MFI programs are not randomly selected – borrowers typically self-select into MFI programs – comparing poverty outcome those in the treatment group to those in the control group is not sufficient evidence to show an independent programmatic effect on poverty. Selection bias can only be removed if control groups and treatment groups are randomly assigned through a controlled experiment.

Taking into account the need for a randomly selected control group, one of the first comprehensive impact studies of microfinance was a joint research project between the Bangladesh Institute of Development Studies (BIDS) and the World Bank that ran from 1992-1999 (Khandker 2005). This quasi-experimental study showed that microfinance helps with consumption smoothing and asset building, particularly among women borrowers (Khandker 1998, Pitt and Khandker 1998). While microfinance activities were apparently beneficial according to a number of variables, the effect on “poverty” depends on the type of measurement. The BIDS-World Bank study used household consumption, rather than household income, as a measure of poverty. The results showed that microfinance accounted for 40% of the overall reduction in moderate poverty in rural Bangladesh (Khandker 2005, 284). The study also indicates that non-borrowers also benefit from the microfinance intervention through growth in local income (Khandker 2005, 285).

To address the lack of research in countries other than Bangladesh as well as to address the lack of controlled experiments, several randomized controlled trials have been conducted in the last decade. The Abdul Latif Jameel Poverty Action Lab of MIT uses randomized evaluations to measure the impact of social programs, which have had mixed results. A 2007-2009 study on a microfinance program in the Philippines found that although microlending increased overall

lending in the treatment group, the program had a weak negative effect on business size (Karlan and Zinman 2009). A similar study conducted in Bosnia and Herzegovina found that while microloans led to increased business ownership and self-employment, there was no significant increase in business profits or income within the fourteen-month study period (Augsburg, et al. 2010). Several other studies have drawn similar conclusions: microlending tends to increase overall borrowing within treatment groups over time, but has varied effects on business size, and often no effect on income (Attansio, et al. 2011, Desai, Johnson and Tarozzi 2006, Banerjee, et al. 2008, Crepon, et al. 2009). As such, whether or not microfinance actually reduces poverty is still a hot debate. In the least, it appears that microfinance programs have an effect on income for specific populations under specific conditions (Bauchet, et al. 2011). A host of other studies aim to assess what effect additional services have on borrower success rates, such as business training courses, changes in interest rates and maturity length, and group versus individual loans. In any case, none of these studies provide proof that microfinance is ineffective as a tool for poverty reduction. Study periods were less than two years, which could be insufficient time for borrowers to reap the rewards of their investments. Moreover, results from specific programs are not globally generalizable. Studies with longer test periods and perhaps wider definitions of borrower wellbeing are needed.

Other studies have attempted to directly assess the value-added to GDP of microfinance activities (Alamgir 1998, Mallick 2000). For example, one study estimated that microfinance businesses represented 1.10% of GDP in 1996 (Alamgir 1998). From this research angle, microfinance appears to play a direct role in economic growth. However, these studies do not compare the borrowers to a control group, and hence do not analyze the scenario of not participating in the microfinance program.

In the case of Turkey's microfinance sector, no randomized controlled trial has ever been implemented, nor has there been any quantitative research using statistical analysis prior to this study. While several reports describe the sector as a whole (Burritt 2003, Economist Intelligence Unit 2012, Grossmann 2006, Gurses 2009, Ovacık 2007), other accounts are qualitative or anecdotal (Adaman and Bulut 2007, Kahramanmaraş Valiliği 2010). Microfinance in Turkey has also been the subject of student theses (Baltacı 2009), however no study has had access to individual-level data for the purpose of statistical work. In fact, Turkey's largest microfinance institution, TGMP, has never released its full borrower dataset to the public.

Public sector role in promoting financial intermediation

Financial markets develop to some extent on their own. As the real sector grows, individuals have higher net worth, which lowers the external finance premium and invites the formation of financial intermediaries.¹⁴ Commercial banks are typically the first to emerge, followed by markets for debt securities and equity, and finally non-bank intermediaries such as insurance companies and pension funds. Each of these new stages expands the allocation of saving and investment (Gertler and Rose 1991, 10).

At the same time, many economists have sought to identify policy levers that governments can manipulate in order to encourage financial market development. Although easier said than done, most economists agree that public policies can enhance the functioning of financial markets, and even help spur banking activities where none exist. A goal of public policy should be to reduce the external finance premium banks face by helping to reduce information costs and contract enforcement. This implies a strong legal system, well-established

¹⁴ Gurtey and Shaw (1956) outline the stages of financialization.

property rights, adequate accounting standards for firms, deposit insurance to prevent bank runs, control measures to prevent bank crises, as well as sound macroeconomic policies that promote growth and stability (Montiel 2003, 203, Gertler and Rose 1991, 40, Bencivenga and Smith 1991, 207). In particular, a strong legal system has been a predictor of financial development in empirical studies (La Porta, Lopez-de-Silanes, et al. 1998, 1997, Levine 1998, 1999). The literature also warns against excessive intervention such as financial repression in the form of interest rates ceilings, directed credit policies, and subsidies for specific industries (Montiel 2003, Gertler and Rose 1991).

According to Patrick (1966), it is also possible for government policy to encourage new banks in specific sectors. If established banks avoid lending to nascent, small-scale firms in a developing economy, government policies can help encourage the growth of a micro- or SME-financial sector through public start-up capital, direct and indirect subsidies, low reserve requirements, and low discount rates for central bank funding (Patrick 1966, 176). Patrick's conjecture suggests that initial government intervention in a particular financial market segment may be a necessary first step for instigating a pattern of demand-driven, self-sustaining financial deepening. That is, once public seed capital jumpstarts entrepreneurial ventures, private banks have a natural incentive to supply these growing companies with further capital. From this perspective, a predominantly low-income, low-asset sector of the population such as that targeted by microfinance institutions is a candidate for public policy intervention to promote financial intermediation.

The next chapter will provide a context for understanding financial intermediation in the case of Turkey. It will also analyze Turkey's journey from a developing country to an emerging market, as well as describe its microfinance sector.

Chapter 2: Turkey's Context

The Republic of Turkey is in many ways a classic “emerging market” – a country that has overcome its previous “developing” status, but which also faces short-run macroeconomic instability to a greater degree than fully industrialized countries (Montiel 2003, viii). Once an agricultural economy with a large rural sector, Turkey is today in the “upper-middle income” category defined by the World Bank, the same category as Russia, South Africa, Brazil, Mexico, and several East European countries.¹⁵ As a member of the Organization for Economic Cooperation and Development (OECD), an exclusive club of the world’s 34 richest countries, its GDP is the seventeenth largest in the world at \$1.075 trillion in 2011. Today, the service sector accounts for the main portion of employment and GDP, while agriculture represents a diminishing remnant of the Ottoman era (CIA World Factbook 2009). Moreover, its economy is prosperous relative to its Middle Eastern and Eastern European neighbors, and outpaces most developing countries.

Despite this success, poverty and unemployment remain severe obstacles for Turkey’s economic aspirations. Turkey’s GDP per capita was US \$14,600 in 2011, placing it 86th among the world’s 221 countries (CIA World Factbook 2011). Turkey does not fare well with respect to average schooling, rural-urban income disparities, and gender equality. According to its Gini index, a measure of income inequality, Turkey is the world’s 59th most economically unequal country in the world (CIA World Factbook 2010). Given the country’s chronic fiscal deficit, reducing poverty using public funds is difficult. The country’s financial sector has undergone

¹⁵ “Upper-middle income countries” are those with a Gross National Income (GNI) of \$3,976-\$12,275 (constant 2010 USD) using the World Bank’s Atlas Method. There are three categories for developing countries – low income, lower-middle income, and upper-middle income countries. “How we classify countries.” World Bank. Updated in 2012. [<http://data.worldbank.org/about/country-classifications>]

four financial crises in the last twelve years, making global investors wary about lending. Consequently, Turkey's path to greater economic prosperity is not clear of obstacles.

The goal of this chapter is to provide a context for understanding how microfinance fits into the Turkish financial sector from a historical perspective. The chapter will first describe Turkey's ongoing ambition to attain the same living standards enjoyed by Western societies, a goal symbolized by Turkey's bid to join the European Union. It will then describe the country's poverty profile, and how this represents an obstacle to Turkey's economic aspirations. Then, the chapter will outline the historical intimacy between Turkey's banking sector and the country's economic development objectives. Finally, the chapter will describe Turkey's current microfinance sector.

Turkey, poverty, and the EU

Since becoming a republic in 1923, Turkey has pursued economic policies that would enable it to join the world's industrialized countries. One of the main principals espoused by Turkey's founder, Mustafa Kemal Atatürk, was economic "modernization," or likeness with Western economies (Zürcher 1997, 189). Membership in the European Economic Community (EEC), and later the European Union (EU), has long been sought as a stamp of approval for Turkey's economic success. Turkey first applied for EEC membership in 1957, and was accepted as an associate member in 1963. As an associate member, Turkey obtained development aid from the EEC, as well as special tariff treatment for sensitive sectors such as farming and textiles. In addition, membership propelled Turkey's economy toward First-World, European standards of living (Faucompret and Konings 2010, 24).

The Turkey-EU customs union took effect in 1996, and in 1999, the EU accepted Turkey's full membership candidacy, provided Turkey complied with the Copenhagen criteria.¹⁶ Turkey passed a series of reform packages from 2001 to 2004 which improved human rights.¹⁷ By 2005, the European Council deemed that Turkey sufficiently fulfilled the Copenhagen political criteria, and thus would open accession negotiations, expected to take around ten years under normal circumstances. However, ongoing political tensions with Cyprus, Greece, Syria and NATO, and the Kurdish minority have delayed the process (BBC 2012). Of the 35 policy chapters Turkey must negotiate to join the EU, only one has been completed, and a new Turkish constitution is still in the works (AFP 2013). While the chapters on intellectual property, enterprise and industrial policy, and free movement of capital are being negotiated, one of the most important concerns – free movement of labor – has not yet been discussed. One of the main economic concerns of member states has been Turkey's large, underemployed, relatively young population which could flood European markets. Germany and France have supported a "privileged partnership," which could exclude Turkey from certain benefits such as free movement of persons, a policy Ankara fiercely opposes (Faucompret and Konings 2010, 46).

The economic criteria of the EU concern macroeconomic issues such as Turkey's large public debt, fiscal budget deficit, large trade deficit, and high inflation (European Commission 2012). Poverty in Turkey is also relevant to its EU bid insofar as its high unemployment rate, mediocre business competitiveness, relatively low average education level, and unequipped

¹⁶ The EU's accession criteria, known as the Copenhagen criteria (laid out by Article 49 of the Treaty of Maastricht and the 1993 declaration by the European Council in Copenhagen), encompass three main policy areas. The political criteria include the stability of democracy, rule of law, and respect for human rights and minorities. The economic criteria require the "existence of a functioning market economy and the capacity to cope with competitive pressure and market forces within the Union." The third policy area is the acceptance of the EU rules as decided by member states, including "adherence to the aims of political, economic and monetary union." European Commission (2012), "Enlargement," [http://ec.europa.eu/enlargement/policy/conditions-membership/index_en.htm].

¹⁷ For example, Turkey abolished the death penalty in times of peace and legalized broadcasting in the minority Kurdish language.

taxation policies are concerned. A poverty analysis team selected by the European Commission concluded that unemployment and Turkey's large informal sector – estimated to employ 30% of all non-agricultural workers– are chiefly responsible for poverty (Adaman and Oya 2008).

Given Turkey's historical ambition to join the EU – notwithstanding the recent Greek crisis – reducing poverty has been a centerpiece of economic policy. Poverty in the Republic of Turkey is a perplexing issue. Extreme poverty – those living on less than USD \$4.30 (2010 PPP) per day – is negligible, at approximately 2.79% of Turkey's population, or two million people (Turkish Statistical Institute 2011). On the other hand, when considering household consumption, the Turkish Statistical Institute considers 18% of Turkey's population to be “poor,” representing 12.8 million people.¹⁸ This rate is significantly higher in rural areas, where the poverty rate reaches 39%, or 8.4 million people (Turkish Statistical Institute 2009). The UNDP has also found that there is a recent increase in “new poverty” – poverty which is long-term due to internal migration and is not remedied by traditional family support structures (UNDP-Turkey 2006). As such, Turkey's economic progress still lags behind that of EU members, as demonstrated by its large GNI per capita gap (Figure 9). On the Human Development Index, Turkey is likewise deficient, ranking 92nd worldwide (UNDP 2011).¹⁹ This suggests that health, education, and general quality of life standards in Turkey are low relative to its economic output. Turkey has an average life expectancy of 74 years; an adult literacy rate of 87.4%; and an average of 6.5 years of schooling per pupil (CIA World Factbook 2011).

Consequently, since 2005 Turkish authorities have been especially diligent about poverty-reduction schemes. Turkey's Ninth Development Plan, covering the 2007-2013 period,

¹⁸ Poverty is defined as households living on less than half the national median of consumption expenditures. “The poverty rates of individuals according to poverty line methods, Turkey.” 2009. Turkish Statistical Institute.

¹⁹ The Human Development Index (HDI) is a weighted average of a country's health, education, and economic indicators. The HDI ranges from 0 to 1, with 1 representing the highest level of human development. Turkey's measure is 0.699. UNDP (2011), “Human Development Report 2011.”

serves as the basic strategy document that contributes to the EU accession process (Ninth Development Plan: 2007-2013, 12). It targets five main policy areas: increasing competitiveness, increasing employment, strengthening human development and social solidarity, ensuring regional development, and increasing quality and effectiveness of public services. To reduce poverty, the plan also promotes income-generating projects in rural and underdeveloped regions while seeking to reduce the informal economy (80, 104). It likewise emphasizes the “insufficient participation” of women in Turkey’s labor force (47). Given these policy goals, Turkish policymakers are apparently open to innovative techniques to reduce poverty and smooth the path to EU membership.

Development of Turkey’s banking sector

Although not yet a high-income country like its European neighbors, Turkey has largely achieved the level of industrialization its leaders envisioned after its founding: while the industry and services sectors accounted for 57% of GDP in 1968, this figure rose to 91% by 2011 (WDI 2012). As of 2005, Turkey also has a mature banking sector which meets global regulatory standards, such as Basel II requirements. Notwithstanding some weaknesses, Turkish financial markets are on the right track in terms of overall size, product diversity, and prudential oversight. Given the presumed effect of financial markets on growth, the Turkish economy as a whole is expected to benefit as a result.

There are nonetheless vestiges of Turkey’s agrarian past evidenced by rural poverty as well as economically marginalized populations stemming from rural-urban migration. If Turkey wishes to join the ranks of high-income countries and potentially gain EU membership, it is essential to implement policies that benefit this vast marginalized sector.

The history of Turkey's banking sector and national development goals

The history of Turkey's banking sector – particularly from the 1980s onward – suggests that while Turkey has reached its goals of industrialization and a mature financial sector, it overlooked the need to facilitate financial development at the low-income segments of society.

Turkey's banking sector has undergone a transition from two extremes: the state-run, centralized era, which lasted from the Ottoman Empire to the 1970s, and the liberal, market-driven era of the 1980s to today. The banking sector transition runs parallel to the country's evolving development strategy, which likewise went from a state industrialization system to a liberal, market-based approach. Moreover, the Turkish banking sector was traditionally a tool of the government for its industrialization and “modernization” objectives. It was only in the 1980s and 1990s that Turkey developed a modern banking sector defined by an independent central bank, a larger proportion of private banks, and a rule-based regulation system.

The Turkish Republic and state control of the economy

Turkey's formerly state-run economy has roots in the Ottoman Empire (1299-1922). The region's centralized economy was initially agrarian with little private enterprise in manufacturing (Aydın 2005, 26). The Ottoman rulers designed the road structure, strategized international trade, and encouraged size over efficiency in farming to encourage land acquisition (Altunbaş, Kara and Olgu 2009, 8). These policies set a precedent for centralist policies during the first fifty years of the Turkish Republic (1923-present), which aimed to convert Turkey's economic base from agriculture to industry. Turkey's founder, Mustafa Kemal Atatürk, envisioned a more “modern” Turkey that mirrored European living standards, and felt this required investment in industry.

Gradually, agricultural production as a share of GDP declined, and the manufacturing and service sectors became dominant industries after 1965 (WDI 2012).

The Ottoman banking industry, which first emerged in the eighteenth century, was underdeveloped relative to that of Europe (Altunbaş, Kara and Olgu 2009, 41). Most banks during the latter decades of the Empire were foreign owned and operated. In this sense, Turkey had little experience with the banking industry upon its independence in 1923. Using Europe as a model, Turkish policymakers developed a national banking sector as a source of investment capital (Aydın 2005, 26). Lacking sufficient national funds, foreign private capital was designated to start banks and instigate domestic infrastructure such as utilities and transportation. In 1923, 35 banks comprised the formal banking sector, of which 22 were Turkish-owned. Foreign banks mostly lent to Istanbul-based foreign companies, and Turkish banks were typically local or too small to support state industrial and commercial development goals. Given the need for domestic capital, the Turkish government encouraged private bank formation. From 1923 to 1932, 29 new private banks were formed, many of which were public-private partnerships²⁰ (Altunbaş, Kara and Olgu 2009, 42).

The First and Second Industrial Plans, adopted in 1934 and 1939, furthered state planning and experimented with the Soviet model. Implementation of the First Industrial Plan relied on equipment and technical support from the Soviet Union (Soylu and Yaktı 2012). To finance state investments in factories and equipment, the government used taxation, created public banks, and repressed interest rates (Aydın 2005, 27). State-supported special-purpose banks, such as the

²⁰ For example, Türkiye İş Bankası, which still operates, was established in 1924 through state and private funds. The development-oriented Türkiye Sanayii ve Maadin Bankası (Turkey Industrial and Mining Bank) was founded in 1925. The government also broadened Ziraat Bankası (Agricultural Bank), which was established during the Ottoman Empire, to non-agricultural sectors.

Turkish Industrial Finance Bank, specialized in specific sectors of the economy.²¹ The 1930s was hence known as the *étatist* period, during which the state intervened in financial markets to promote industrialization (Aydın 2005, 27). There was no entry of private banks during this period (Altunbaş, Kara ve Olgu 2009, 43).

Turkey's Central Bank was also established during this time, opening on January 1, 1932. Initially, the Central Bank was empowered to issue banknotes for 30 years. This right was later extended in 1955 and in 1994 it was prolonged indefinitely (Altunbaş, Kara ve Olgu 2009, 195).

ISI Period

Turkey's state-run economic policies took new shape after 1945. Unprecedentedly, the Turkish government encouraged private industry. Turkey joined the IMF and the World Bank in 1947 as well as other international organizations.²² Turkey also facilitated the infusion of foreign capital, including direct investment and US-sponsored Marshall Plan aid, and encouraged private investment by reducing interest rates through looser monetary policies (Aydın 2005, 28).

Despite these inroads to the global economy, Turkish policymakers shunned full economic liberalization, particularly regarding international trade. Intent on making Turkey a manufacturing-based economy, the state implemented an import-substitution industrialization

²¹ State-supported special-purpose banks included Sümerbank (1933), Belediyeler Bankası (Municipalities Bank, 1933), Etibank (1935), and several others. Each state bank specialized in a specific sector: for example, Etibank focused on lending to mining and energy companies, while Belediyeler Bankası lent to local public infrastructural projects. Other banks focused on maritime enterprises, small businesses, or other areas. Altınbaş, Kara, and Olgu 2009.

²² These included the International Finance Corporation (IFC) in 1956, the International Development Association (IDA) in 1960, the General Agreement on Tariffs and Trade (GATT, the precursor to the World Trade Organization) in 1951, the Organization for Economic Cooperation and Development (OECD) in 1960, and closer relations with the European Economic Community (EEC) via the Ankara Agreement in 1963.

(ISI) strategy, based on an infant industry argument.²³ The ISI strategy encouraged foreign technology and capital investments in industry to boost productivity, implemented price supports and protectionist measures for agriculture, and devalued the Turkish lira against the dollar to encourage exports. State investments also continued in industries such as energy, transport, and commodities (Altunbaş, Kara and Olgu 2009, 11). Given that these policies did not conform to neoclassical economic doctrine, Turkey's relationship with the World Bank and the IMF deteriorated in the mid-1950s (Aydın 2005, 30).

Meanwhile, the banking sector thrived as it financed industrialization and met credit demand of post-war baby boomers. From 1945 to 1960, three public and 27 private banks were formed, several of which represent Turkey's largest private banks today.²⁴ By 1962, there were 62 banks in Turkey, the highest number reached until 1989. In addition, bank branches increased fourfold by 1959, allowing the financial sector to reach many unbanked regions of Turkey (Denizler 1997).

Problems with state planning

Throughout the 1960s and 1970s, Turkey continued to pursue its ISI strategy. Despite the positive growth outcome – from 1963-1972, Turkey's growth rate averaged 7.0%, led by the industrial sector – the ISI policies were not financially sustainable (WDI 2012). The import of technological inputs for factories worsened the foreign trade deficit and reduced foreign currency reserves (BAT, In its 40th Year The Banks Association of Turkey and Turkish Banking System

²³ From the infant industry perspective, a nation's underdeveloped industries require protectionist measures against foreign imports until they "mature" and can withstand global competition, at which point protectionist barriers can be removed. This perspective is criticized by neoclassical economists, who believe it ultimately harms a country's social welfare.

²⁴ These include Yapı ve Kredi Bank (1944), Garanti Bank (1946), and Akbank (1948).

1999). The Turkish lira was devalued in 1958, and Turkey signed a stabilization program with Europe (Altunbaş, Kara and Olgu 2009, 12).

In practice, ISI policies were politically motivated and inefficiently executed. Even large, relatively successful companies struggled for access to rationed credit, foreign exchange, and import licenses. This created rent-seeking behavior and severe market inefficiencies. Banks also directed state-subsidized credit toward public development projects, which “crowded-out”²⁵ private enterprise as well as new banks (BAT, In its 40th Year The Banks Association of Turkey and Turkish Banking System 1999). Moreover, the state allowed only two new depository banks to form between 1960 and 1980. Instead, the government encouraged non-depository development and investment banks, such as Türkiye Kalkınma Bankası (Development Bank of Turkey). Many other banks were either liquidated or merged, reducing the total number of banks to 43 by 1980 (Altunbaş, Kara and Olgu 2009, 45).

In addition to directed credit policies, Turkey’s Central Bank suffered from non-independence. The goal of monetary policy was not price stabilization, but rather public investment. State economic planners enforced low interest rates to encourage private industry while also using the Central Bank’s assets for public projects. The Central Bank also limited borrowing for the private banking system. Low interest rates encouraged monetary loosening, eventually galvanizing hyperinflation in the 1970s, exacerbated by the 1973 oil shock. Hyperinflation came with energy shortages, increased unemployment, and insufficient foreign exchange reserves. In response to these harmful effects, the government increased spending, which led to a severe dual-deficit problem in both the current account and the federal budget. An

²⁵ The “crowding-out” effect refers to a market dilemma in which the public sector harms private enterprise by flooding capital markets with public debt.

external debt crisis finally erupted in 1978, prompting Turkey's first genuine attempt at economic liberalization (Altunbaş, Kara and Olgu 2009, 12).

Financial liberalization: 1980-1990

The ISI period ended after the debt crisis of 1978. A policy overhaul in 1980, known as the "January 24 Decisions," aimed first to stabilize the economy and then to adjust its structure based on open trade and free market principles (Arıcanlı and Rodrik 1990). These policies won the approval of the IMF, World Bank, and OECD.

The basic tenets of the new policies were to reduce fiscal spending, create a flexible exchange rate, promote positive real interest rates by reducing inflation, and liberalize the financial sector (BAT, In its 40th Year The Banks Association of Turkey and Turkish Banking System 1999). Turkey also began privatizing public enterprises in 1984, which represented 40% of industrial production.²⁶ As a result of these policies, export earnings subsequently increased in the early 1980s, foreign direct investment (FDI) greatly increased, and market interest rates reached positive levels, which encouraged private saving. Turkey still had a large external debt, however (Altunbaş, Kara and Olgu 2009, 17).

There were likewise many significant changes in the financial sector. In 1985, Bank Law No. 3182 introduced new financial safeguard mechanisms according to international banking standards and created the Savings Deposit Insurance Fund (SDIF), run by the Central Bank. The Istanbul Stock Exchange, Turkey's first and only securities exchange market, opened in 1986.

²⁶ Examples of companies that were privatized include: the state telecommunications company (Teletas, 1988), airport services (Usas, 1989), various cement companies, iron and steel (Erdemir, 1990), electricity (KepezElektrik, 1990), petro-chemicals (PETKIM, 1990), a car manufacturer (Tofas, 1991), and animal feed companies. Meral Tecer. "Privatization in Turkey." *Cahiers de etudes sur la Méditerranée orientale et le monde turco-iranien*. No. 14, June-December 1992. [<http://www.ceri-sciencespo.com/publica/cemoti/textes14/tecer.pdf>].

Given a newfound level of independence, in 1987 the Central Bank started autonomously conducting open market operations. It also began monitoring the newly created interbank market for funds. In 1988, a foreign exchange market was established. In 1989, the capital account was fully liberalized, and in 1990 the Turkish lira was made fully convertible. As such, foreigners could invest in Turkish securities as well as open Turkish deposit accounts, denominated in TL or any foreign currency. Turks were also allowed to open foreign currency bank accounts and hold foreign currency. In 1992, electronic fund transfers became active (BAT 2009, 17).

As a result of these changes, competition in Turkey's banking sector increased. Banking products diversified to include deposit accounts, consumer loans, credit cards, foreign exchange deposit accounts, and other financial instruments. Banks were allowed to diversify their assets beyond government securities and domestic businesses into foreign exchange and capital markets, particularly after full capital account liberalization in 1989. Banks raised funds from abroad, instead of depending on domestic deposit and savings funds for loan capital. Given technological advancements such as computers and ATM machines, banking productivity also rose. Turkish banks also started opening branches abroad (BAT 2009, 17).

Weaknesses of financial liberalization

The first major weakness of the 1980s liberalization policies was poor regulation. The Banking Law No. 3182 of 1985 was Turkey's first major attempt to regulate the banking sector, but it was ineffective (Alper and Onis 2002). Regulatory authority was given to the Treasury Department, while the Central Bank was not officially part of this supervisory process. Because the Treasury was not politically or financially autonomous, this created a conflict of interest – since public funds were at stake, the Treasury could withhold honest appraisal of banks to reduce

government expenditures on debt, and could provide potential bailouts for failed banks. Likewise, the bureaucracy lacked clout to confront banking lobbies. Connected lending – where a holding company has a strong organic link with a particular bank for internal financing – was not controlled adequately. Furthermore, the 1985 law did not provide incentives for weak banks to improve; rather, weak banks were given tax breaks and exemptions from reserve requirements. Finally, the law provided no mechanism for taking over underperforming banks. As a testament to the weakness of Turkey’s financial structure, few foreign banks entered Turkish markets during the 1980s and 1990s (Alper and Onis 2002, 12-14).

The second major weakness of the 1980s period was instability caused by full capital account liberalization in 1989. While the goal of capital account liberalization is to lower real interest rates and increase long-term economic growth, several observers believe Turkey’s capital account opening was premature (Alper and Onis 2002, 14). Given Turkey’s unstable macroeconomic environment and its inadequate regulatory infrastructure, capital account liberalization did not produce substantial long-term capital flows, such as foreign direct investment (FDI), which help economies grow. The annual FDI into Turkey was below \$1 billion from 1974 (when records were started) to 2000 (WDI 2012). The IMF, nonetheless, believed capital account liberalization would catalyze necessary regulatory reforms in Turkey and help the sector reach maturity (Alper and Onis 2002, 15).

Crisis period: 1990-2000

The policies of the 1980s created instability that eventually led to a currency crisis in 1994, which was largely attributed to excessive liberalization and the entry of short-term, highly fickle “hot money” to finance Turkey’s twin deficits (Ishii and Habermeier 2002). Foreign direct

investment – the most stable type of capital inflow – was miniscule throughout the 1990s, averaging 0.35% of GDP during the decade (WDI 2012). Most capital inflow consisted of short-term deposits, loans, and trade credits to Turkish borrowers, rather than longer-term portfolio investments or purchase of fixed capital. Of the portfolio investments, most were made in debt securities rather than equity. In addition, by increasing the value of the Turkish lira, this swift capital inflow reduced the cost of imports, thereby worsening the country's current account deficit and escalating the need for more foreign capital. The early 1990s also saw high inflation, which encouraged investors to hold dollar-denominated assets, creating a growing currency mismatch between banks' assets and liabilities (Altunbaş, Kara and Olgu 2009, 51).

In 1993, rising levels of public debt and reliance on *seigniorage* revenues – that is, government financing through printing money – provoked capital flight. The Central Bank was forced to devalue the lira by 57% in April 1994, and the Turkish banking sector lost over half of its lira-denominated reserves (Celasun 1999). Since most Turkish banks carried large open foreign currency positions, the severe currency mismatch led to a solvency crisis. Furthermore, with inflation reaching 106%, real interest rates became negative. On average, the change in total assets of the Turkish banking sector during the 1994 crisis was -28%, with an accompanying decrease in the number of bank branches and employees (BAT 2012). Overall, Turkey's GDP contracted by 5% in 1994 (WDI 2012).

Although Turkey's banking sector saw brisk improvement in terms of total assets after 1994, particularly among private banks, numerous sources of fragility caused a similar crisis in 1999. Public banks created distortions in the market after the 1994 crisis by politicizing the loan process; the government directed lending to favored lenders at subsidized rates, leading to losses by the public banks which were covered by costly borrowing from abroad. In addition, many

banks suffered from fraud, embezzlement, and a lax supervisory structure (Tükel, Üçer and Van Rijckeghem 2006, 277). A simultaneous global economic crises among emerging markets in the late 1990s²⁷, resulting in capital outflows and reduced exports, led to a sharp decline in the Turkish economy, which contracted by 3.5% in 1999 (WDI 2012).

Reforms in the banking sector

Turkey signed a Stand-By Agreement with the IMF in 1999, establishing a three-year stabilization program that disbursed \$ 15.6 billion from 1999 to 2001 (WDI 2012). This gave the IMF significant influence over Turkey's banking sector and resulted in a reform known as Banking Act No. 4389, passed in 1999. The overarching goals were to reduce inflation, lower the budget deficit, and reduce the public debt-to-GDP ratio to match EU standards. This implied tighter risk management and control as well as a tighter capital adequacy ratio and foreign exchange exposure limits (Altunbaş, Kara and Olgu 2009, 55).

On paper, Banking Act No. 4389 had noble intentions.²⁸ In addition to restricting excessive lending and reducing use of foreign exchange, the most important change of the new Banking Law was establishment of the Banking Regulation and Supervision Agency (BRSA), a politically and financially autonomous institution with exclusive authority to license, regulate, and audit banks in Turkey. When market regulation authority was transferred from the Treasury to BRSA, political lending sharply decreased. An important change was the transfer of authority over SDIF to BRSA, which strengthened the guarantee on depositors' funds (Altunbaş, Kara and

²⁷ Emerging markets worldwide experienced financial instability during the 1990s. Following the Mexican crisis of 1995, the Asian Crisis of 1997 affected Thailand, South Korea, Indonesia, and several surrounding economies. Like Turkey, these countries had rapidly liberalized their capital accounts, but failed to manage capital inflows properly.

²⁸ The purpose of Banking Act No. 4389 was "to protect the rights and interests of depositors, to ensure effective working of the credit system in line with the requisites of economic development, and [ensure] confidence and stability in financial markets." Turkish Banking Act No. 4389, Article 1.

Olgu 2009, 55). BRSA is funded by insurance premiums paid by banks, a bank founding fee, judicial and administrative fines, and revenues from the SDIF.²⁹ As such, the institution is financially, politically, and administratively independent.

Evidence of the BRSA's influence quickly emerged as weak banks were identified and subject to tighter rules. With the new law, the SDIF soon took over management of five privately-owned commercial banks and suspended one bank's license. According the Banks Association of Turkey, these measures had positive effects on the transparency and profitability of the banks' financial statements (BAT 2010).

However, problems mounted with the new law. Despite the clear need for BRSA, its formation and early operation were highly politicized. This led to delays and roadblocks in designing a regulatory structure for Turkey (Alper and Onis 2002, 18). BRSA's regulations frequently changed, making it difficult for banks to adjust. In any case, Turkey still had not implemented Basel reforms and other international banking and accounting measures, and many investors took their longer-maturity funds abroad. As a result, almost half of the assets in the Turkish financial system was denominated in foreign currency and had short-term maturity (BAT 2010). Moreover, Alper and Öniş (2009) contend that the IMF over-emphasized regulatory reform and Turkey's fiscal deficit instead of issues affecting long-term development, such as export competitiveness and income distribution in Turkey.

Given these weaknesses, "twin crises" bombarded Turkey in November 2000 and February 2001, during which severe capital flight eliminated bank liquidity (Yelden 2001, 2). Despite IMF loans, capital flight returned in February 2001, which forced the Central Bank to allow the lira to depreciate. Turkey has maintained a floating exchange rate since this time.

²⁹ Act. No. 4491 to the Banks Act of 1999, Article 15.

As a result of the crises, Turkey's GDP fell by 9%, and Turkey's credits from the IMF went from an initial \$3.6 billion to \$18.1 billion, in addition to \$6.8 billion from the World Bank. In 2000 and 2001, eleven banks were taken over by the SDIF, making a total of 19 banks held by the Fund (Aydın 2005, 123). The crises also led to bank downsizing. The total number of commercial banks dropped from 61 in 2000 to 46 in 2001, while the number of branches fell from 7,807 to 6,889. The overall asset size of the banking sector fell by 26%. The overall non-performing loans rose from 11.6% in 2000 to 23.2% in 2001, with the worst hit taken by publicly-owned banks (Altunbaş, Kara and Olgu 2009, 57).

Turkey's new Minister of Economic Affairs and former Vice President of the World Bank, Kemal Derviş, led a successful three-year recovery program. The new program, known as the "Transition to a Stronger Turkish Economy," continued the previous disinflation program and included structural reforms to strengthen the banking sector. Its main goal was to restore the faith of foreign investors. One of the major changes in the financial sector was a 2002 law which helped strengthen private bank capital. The law also aimed to eliminate inefficiencies of state banks. The total cost of this state bank restructuring was \$22 billion – some 15% of Turkey's GDP (Altunbaş, Kara and Olgu 2009, 58).

Turkey's economy generally improved after 2002, averaging 7% growth per year. Capital inflow improved, and inflation fell to single digits for the first time since 1969. From 2003 to 2010, the banking sector's total assets grew by an average of 23% per year, and foreign funds returned to Turkish banks. Turkish government spending has reduced since the 2001 crisis, and the country on track to repay all of its IMF commitments (S&P 2012).

Table 1: Macroeconomic indicators

Turkey's Macroeconomic Environment	
GDP (official exchange rate, 2012)	\$783.1 billion
GDP (Purchasing Power Parity, 2012)	\$1.1 trillion
GDP per capita (official exchange rate, 2012)	\$9,819
GDP per capita (Purchasing Power Parity, 2012)	\$15,000
GDP growth rate (2012)	3%
Current Account deficit (2011)*	\$77.1 billion
Capital Account surplus (2011)*	\$66.6 billion
Inflow of Foreign direct investment (2011)*	\$15.9 billion
Budget deficit (official exchange rate, 2012)	\$20.5 billion (2.6% of GDP)
Public debt (% of GDP, 2012)	40.4%
Inflation rate (consumer prices, 2012)	9.1%
Unemployment rate, 2012	9%
Commercial bank prime lending rate (nominal, 2012)	19%
Exchange rate (Turkish lira per USD, 2012 average)	1.80

Source: CIA World Factbook (2013), except (*) Central Bank of Republic of Turkey

Turkey's banking sector matures: 2002-2012

By many accounts, the post-2002 banking system in Turkey is strong. A key indicator is the capital adequacy ratio (CAR), which at 16.5% as of September 2012 is above BRSA's target rate of 12%, and well above the rates seen by many European countries (S&P 2012). Credit growth has moderated slightly since 2011, predicted to reach 16% by the end of 2012 (IMF 2012). Most of the growth in credit stems from corporate loans, while the more volatile consumer loans are limited. Loans tend to be medium- to long-term, and denominated in Turkish lira, which likewise enhances stability. Moreover, the sector's non-performing loan ratio is at a historical low at around 3% (CBRT 2012, iv).

Recep Beşnek, Advisor to the Presidency of BRSA, asserts Turkey's "excellent regulatory system" (Beşnek 2012). Beşnek notes that BRSA's regulatory discipline and reluctance to offer new banking licenses in the 2002-2006 period, despite complaints from politicians, allowed Turkey to swiftly overcome the 2007 global financial crisis, although there is still a need for education about effective supervisory and regulatory tools. According to an assessment by Standard and Poor's, the regulatory structure and institutional framework guiding Turkey's banking sector is continuously approximating international standards (S&P 2012).

Banking Law No. 5411, adopted in 2005, repealed Law 4389 of 1999 and represents the latest stage of development in the Turkish banking sector. This law underscores Turkey's full transition from a state-run, repressed financial system to an overly liberal, under-regulated regime in the 1980s and 1990s, to the current policy which uses a cautious free-market approach. Overall, this new law created stricter rules for banks (see Appendix).

The strength of Turkey's financial sector was tested during the global recession in 2008-9. Turkey's GDP sharply contracted by 5% in 2009, but quickly rebounded in 2010 with a growth rate of 9% (WDI 2012). By contrast, the GDP of the Euro area contracted by 4% in 2009, but grew by only 2% in 2010 (WDI 2012). Since 2010, the required reserve ratio has been the Central Bank's primary tool for mitigating financial risks due to the global crisis and EU meltdown. Reserve ratios differ according to maturity, and have been particularly stringent with respect to short-term liabilities. This has mitigated maturity mismatches between banks' assets and liabilities. Furthermore, Turkish banks' financial relations with unstable EU banks is low, and thus Turkey faces few negative consequences in the case of further balance sheet downsizing within European banks (CBRT 2012).

Standard and Poor's also notes that Turkey's regulatory standards are "now generally in compliance with international standards" (S&P 2012). Basel II regulations were fully implemented in July 2012, forcing banks to give more conservative risk weightings to mortgage and consumer loans as well as foreign exchange-denominated Turkish sovereign bonds (Reuters 2012).³⁰ In some areas, BRSA has required risk weightings that go beyond Basel II requirements, particularly for credit card receivables and consumer loans, with the hope that this will slow the post-2011 boom in loans (Fitch 2012). The Central Bank indicates it is in the process of implementing Basel III regulations (CBRT 2012).

Nonetheless, remnants of Turkey's previous system persist. Development and investment banks, historically created by the state for industrialization, have lighter controls.³¹ For policies and procedures not directly related to regulation and supervision of the banking sector, BRSA must consult with the State Planning Organization and related institutions to "check conformity with the development plan and annual plan" (Bank Law 5441, Article 93). This has the potential to politicize the design of banking sector policies according to a national development agenda. Furthermore, the Council of Ministers still has the authority to apply maximum interest rates on loans and deposits, or eliminate other rates banks may charge, although the Council can delegate this power to the Central Bank (Bank Law 5441, Article 144). Product variety is also weak: Turkey's banking system is still largely based on depository institutions and investment banks, while housing loans represented only about 10% of GDP and 11% of gross loans in 2011. In addition, banks do not generally offer complex financial products (S&P 2012).

³⁰ For example, foreign exchange-denominated Turkish sovereign bonds now require a 100% risk weight, whereas they previously had a 0% weight.

³¹ For example, Development and investment banks only need 20 million TL in paid-up capital to be established, and do not face stringent reserve requirements or liquidity controls.

According to Standard and Poor's Banking Industry Country Risk Assessment (BICRA), Turkey scores a "5" on a scale from "1" (lowest risk) to "10" (highest risk) (2012). This corresponds to a commercial bank anchor of BBB-, considered the lowest investment grade by market participants. According to this assessment, Turkey's banking sector remains relatively vulnerable because of dependence on capital inflows from abroad, a relatively high inflation rate of 8%, and a moderate level of per capita wealth. A large current account deficit coupled with external debt exacerbates the ongoing dependence on portfolio inflows, many of which are short-term. Furthermore, many banks depend on customer deposits for funding, which as a short-term resource, likewise creates maturity mismatches between assets and liabilities (S&P 2012).

According to the Turkish Central Bank, the biggest threats to financial stability as of mid-2012 are the fast pace of credit expansion and the growing current account deficit (CBRT 2012, vi). During the 2002-2011 period, the average annual credit growth rate of Turkey was 35%, while the average GDP growth rate was 5% (WDI 2012). Moreover, credit expansion is worsening the current account deficit by increasing the country's aggregate demand. Turkey's credit expansion also stems from capital inflows by global investors seeking higher yields than those available in advanced economies, particularly after the euro crisis. The availability of international funds encourages banks to expand their domestic loan portfolios, despite the currency mismatch risk and uncertainty about the continued supply of these funds. Since rapid credit growth is has often preceded financial crises in emerging markets, the Central Bank is taking steps to curb this expansion via monetary policy, which S&P calls "effective" and "flexible" (2012).

Current banking trends in Turkey

Of the 48 banks in Turkey (June 2012), 31 were depository institutions, which take deposits and make loans. Thirteen banks were development and investment-oriented, whose primary goal is national development. Four banks were “participation banks,” which have different collecting and lending methods based on Islamic banking principles, which forbid the use of interest rates (see Appendix for information on participation banks) (BAT 2012).

Table 2: Banks in Turkey

Number Banks in Turkey		
As of June 30, 2012		
		Total Assets (USD billion)
Commercial Banks		
Public	3	\$ 194.50
Private	11	\$ 358.70
SDIF	1	\$ 0.44
Foreign	16	\$ 89.60
Dev't and Investment Banks	13	\$ 27.80
SUBTOTAL, Commercial banks	44	\$ 671.04
Participation banks	4	\$ 33.70
TOTAL, including Participation banks	48	\$ 704.74

Source: Banks Association of Turkey (June 30, 2012)

Turkey’s newer banks, those established in the 1980s and 1990s, tend to be smaller with respect to total asset size than older banks. Turkey’s largest bank, Türkiye İş Bankası, was established in 1924 and had \$91.7 million in assets in June 2012 (BAT 2012).

Of \$671 billion in total commercial bank assets in Turkey, 54% are held by privately-owned banks; 29% by state banks, 13% by foreign banks, and 4% by development and

investment banks. One bank, whose assets total \$440 million, is under the control of the SDIF (BAT 2012).

There are currently only three state-owned banks, all depository institutions: Ziraat Bank (Agricultural Bank), Halk Bank (People's Bank), and Vakıf Bank (Foundations Bank). Each of these banks, in turn, has its own particular public policy niche. Ziraat Bank, Turkey's oldest bank, traditionally focused on lending to the agricultural sector; however, its target market has widened. Halk Bank focuses the small- and medium-size enterprise (SME) market, while Vakıf Bank historically gave credit to local governments, but now offers general retail products.

As of December 31, 2011, the value of total loans by commercial banks based in Turkey was US \$349.9 billion. The lion's share of loans (38%) was extended to clients based in Istanbul Province alone. Another 38% of loans were distributed to borrowers in four regions in west and southwest Turkey, containing 68% of Turkey's population: West Anatolia, the Aegean, East Marmara, and the Mediterranean. The rest of Turkey's provinces accounted for 15.7% of these loans, and foreign borrowers accounted for 6.9% (BAT 2012). This data shows that most of Turkey's loans are concentrated in the wealthiest part of the country. Since most of Turkey's population tends to be concentrated toward the western provinces – Istanbul province alone accounts for 18.5% of Turkey's population – the regional concentration of loans can be better analyzed on a per capita basis. The following table summarizes this information:

Table 3: Formal commercial banking sector loans in Turkey

Loans by Geographical Regions and Provinces, as of December 31, 2011				
Regions	Outstanding loans (USD billion)	Gross loans outstanding/capita (USD billion)	Density (people/sq. mile)	Average population density
İstanbul	133.01	9.76	4241	227
West Anatolia	39.99	5.58	153	
Turkey*	320.76	4.36	151	
Aegean	36.17	3.73	175	
East Marmara	24.48	3.52	211	
Mediterranean	32.09	3.38	170	88
Mid-Anatolia	9.16	3.37	48	
West Marmara	9.76	3.04	120	
West Black Sea	10.84	2.42	98	
East Black Sea	5.88	2.34	116	
South-East Anatolia	12.21	1.56	163	
North East Anatolia	2.91	1.30	51	
Middle East Anatolia	4.26	1.15	73	
Foreign	24.99			
Total	641.53			

* “Turkey” represents continental provinces, and does not represent foreign loans or borrowers in Northern Cyprus.

Source: Banks Association of Turkey (December 31, 2011)

The above data demonstrates that, relative to population, loans disproportionately go to borrowers in Istanbul and Turkey’s western-most regions. Furthermore, the top five loan regions tend to be more urban. The average population density of the top five loan regions is 227 people per square mile, versus 88 for the rest of the country. This indicates that banks in Turkey cluster both demographically and geographically: regions with the highest outstanding loans per capita tend to be urban, wealthy relative to other parts of Turkey, and in western provinces. There are multiple reasons why this could be the case. Businesses in these regions are larger and more diversified, thus increasing the demand for a variety of financial products. Physical infrastructure such as well-maintained roads, electrical grids, and municipal services likely affect the ability to

supply loans as well, given that businesses tend to flourish where infrastructure is adequate. Furthermore, clustering – whereby firms from the same industry locate nearby one another – is prevalent in the banking industry. Through economies of scale, both within a single company and across companies, allows banks to benefit from concentrating their lending activities in certain geographic locations. Banking centers, such as Istanbul, allow companies to benefit from skilled workers, market information, and frequent exchanges with investors.

On the other hand, this data also points to a certain level of inertia with respect to financial services. For reasons mentioned earlier, banks are reluctant to lend to rural or marginalized economic sectors, where poverty is more prevalent. Branching and personnel costs make it particularly costly to expand into relatively unbanked regions. Given this unwillingness by the market to “naturally” expand to sectors where there is a potentially welfare-enhancing role for financial intermediation, microfinance could be a means to fulfill this market niche.

Turkey’s microfinance sector

The microfinance sector in Turkey encompasses public, private, and non-profit institutions. Of these, the non-profit institutions have the most developed programs, while those run by public and private institutions are generally limited in scale and scope.

The Turkish government runs a small microfinance program through the Social Assistance and Solidarity Fund (SASF), established in 1986. This fund offers five- to eight-year interest-free loans of up to 15,000 TL (US \$8,530) for microbusinesses (SASF 2013). SASF funded around 1,192 agricultural business projects from 2003 to 2010, and 11,522 income-generating projects from 2007 to 2010. SASF also worked with the World Bank to launch the

Social Risk Mitigation Project (SRMP), which implemented 5,242 microbusiness projects from 2001 to the project's end in 2008, after which point funding stopped (World Bank 2008).

The Small and Medium Enterprises Development Organization of Turkey (KOSGEB) was established in 1990 by the Ministry of Industry and Commerce with a mission of developing SME competitiveness and “spreading a culture of entrepreneurship” in Turkey (KOSGEB 2013). KOSGEB offers both grants and low-interest loans to SMEs in Turkey; however, these do not typically target the microenterprise sector (Özgekçe 2012).

Of the commercial banking sector, public banks are the largest players in the microfinance and SME markets; however, their products are not tailored to the very poor. Ziraat Bank, Turkey's largest public bank, focuses on agricultural loans, and currently offers loans of up to 50,000 TL (US \$28,156) to SMEs (Ziraat Bank 2013). Ziraat Bank also offers small loans for animal husbandry and farming equipment, but all of these loans require borrowers to present financial documents such as past balance sheets and income statements, a budget, and tax registration information. As such, these loan products are not tailored to the unbanked, low-income, and often illiterate or semi-literate population of Turkey.

Halk Bank, the country's second largest public bank, calls itself “Turkey's SME and Tradesman Bank.” The tradesman credit facility serves companies with turnovers of less than 1 million TL (US \$562,177), and loan limits for tradesman are 125,000 TL (US \$70,272) (Halk Bank 2013). Halk Bank also offers a number of consumer loans for activities such as education, marriage, new furniture, and potentially microbusiness expenses. Like Ziraat Bank, however, these loan programs require borrowers to present income statements, tax registration information, and other financial documents. Even the “Kredimini” loan, which offers individuals up to 5,000 TL (US \$2,810), requires borrowers to present substantial financial documentation

and possibly collateral or some other repayment guarantee (Halk Bank 2013). These requirements make the commercial banking sector a difficult option for the extremely low-income population, particularly those who have no prior banking experience or secondary education.

Of corporate social responsibility programs, BNP Paribas (known as TEB in Turkey) began a microcredit program in 2007 in conjunction with the UNDP and the Young Businessmen Association (GYİAD) which targets young people ages 18-35 who have a high school degree or five years of work experience (TEB 2013). The goal was to help 500 entrepreneurs per year (UNDP 2007). In addition, BNP Paribas founded Microfinance Sans Frontières (MFSF) in 2009 to provide technical assistance services to MFIs around the world; although it has not yet worked in Turkey, this could be a possibility in the near future (MFSF 2013).

The strongest microfinance programs in Turkey stem from the non-profit sector. The country currently has two autonomous microfinance organizations. In 2002, the Foundation for the Support of Women's Work (KEDV) launched Maya, which serves women microentrepreneurs in northwestern Turkey. As of end of 2011, Maya had more than 2,500 clients and an outstanding loan portfolio of 1,228,297 TL (USD \$818,865) (TGMP 2013). The largest MFI is the Turkish Grameen Microfinance Program (TGMP), founded in 2003. As of December 2012, TGMP had over 61,000 borrowers and an outstanding loan portfolio of 35.8 million TL (US \$19.9 million). Combining the outreach of these two programs, around 115,000 low-income women in Turkey have received microfinance loans from 2002 to 2012.³²

Recalling that the Turkish Statistical Institute states that 18% (12.8 million people) of Turkey's population lives under the poverty line (2011), we can use a formula developed by

³² This includes TGMP's current 61,000 borrowers, approximately 50,000 "passive" borrowers (those who left the organization), and Maya's total estimated outreach of around 4,000 borrowers.

Brandsma and Burjurjee (2004) to calculate the market demand for microfinance in Turkey. According to this method of estimation, there are 6.1 million potential enterprises among Turkey's poorest citizens. Given the limited coverage of the only two MFIs operating in Turkey, this indicates a market gap of over 99%. Moreover, the lack of financial services in Turkey's low-income segments reflects a need to tailor services to this market, including savings deposits, insurance, education loans, products aimed at international remittances, and a host of other products.

The Turkish Grameen Microfinance Program

The Turkish Grameen Microfinance Program (TGMP), Turkey's largest microfinance provider, ambitiously endeavors to reach 170,000 members by 2017 (TGMP 2013). As of December 2012, TGMP had 309 full-time staff and 97 branches in 67 out of 81 provinces. It was established in 2003 as a joint venture between the Turkish Foundation for Waste Reduction (TISVA) and Grameen Trust, an NGO that promotes the Grameen model of microfinance internationally. TGMP's activities are based on the Grameen model, whereby borrowers form five-member groups to obtain individual loans. The group loan system serves as a guarantee on repayments.

From its founding until December 2012, TGMP disbursed over 190 million TL (US \$105 million) to approximately 111,000 female borrowers, of which 61,178 were active borrowers as of December 31, 2012. Its outstanding credit portfolio as of December 2012 was 35.7 million TL (US \$19.8 million). TGMP offers five loan products, with an average loan size of around 800 TL (US \$450). TGMP also offers voluntary savings accounts for members and a microinsurance

program since January 2012. Its Portfolio-at-Risk ratio (PAR) over 30 days was around 0.97% in December 2012, indicating an excellent repayment rate (TGMP 2013).

Table 4: TGMP information

Number of Borrowers at TGMP As of December 31, 2012		Loan Distribution 2003-December 31, 2012		
			TL	USD
Active Borrowers	61,178	Total loans disbursed	190,894,156 YTL	\$ 105,466,385
Waiting for loan	8,961	Outstanding loan portfolio	35,702,617 YTL	\$ 19,834,787
Currently has a loan	52,217	Portfolio in Arrears December 31, 2012		
Passive Borrowers*	49,512	PAR > 30		344,686 YTL
Total who have received a loan	110,690	(PAR > 30)/outstanding loan portfolio		0.97%

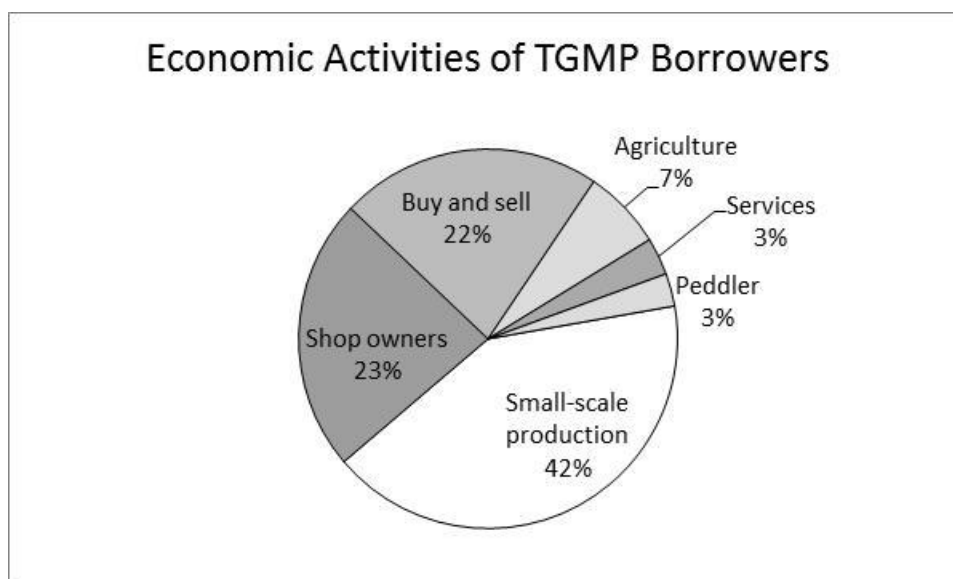
Source: TGMP Business Plan, 2013-2017

All of TGMP's borrowers are women, whose median age is 38. One third of TGMP's borrowers live in rural regions while the rest live in urban and semi-urban. Since the program targets the poor, most borrowers living in the Southeast of Turkey (35.3%), the East (7.6%), and Central Anatolia (13.5%). Only 10% of TGMP's borrowers are near Istanbul, where Turkey's formal financial sector is based. Most borrowers use their loans to make products (42%), such as hand-made items, or become shopkeepers (23%). The median household size of members is four individuals. The average number of loans members receive is 2.69, and the average time spent at TGMP is 1.56 years.

Table 5: TGMP borrowers by location

Location of TGMP borrowers	
Aegean	9.2%
Black Sea	9.3%
Central	13.5%
East	7.6%
Marmara	10.0%
Mediterr	15.1%
Southeast	35.3%
Total	100.0%

As of November, 2012. Source: Damlabank data set.

Figure 5: Economic activities of TGMP borrowers

As of January 11, 2013

Source: TGMP Business Plan, 2013-2017

TGMP finances its operational expenses through the borrower “service fee” of 15% of the principal amount of the loan, which must be paid back on a weekly basis over 46 weeks.

TGMP must also rely on outside sources to fund its activities: 66% of its revenues come from grants and donations, 24% from subsidized loans, and only 10% from the service fee (TGMP 2013).

TGMP as a financial intermediary

According to the theory of financial intermediation, banking activity lowers the external finance premium and increases the supply of savings in the market. Savings can then be used to invest in productive investments, which creates economic growth. Therefore, if a financial intermediary is to have an effect on economic growth, it must generate savings.

As an NGO under Turkish tax law, TGMP is an “economic foundation”³³ and is governed by the Law of Foundations.³⁴ As such, TGMP is not a chartered bank. It therefore is not regulated by BRSA, the banking regulatory authority, and is not allowed to collect deposits from the general public. Specifically, Banking Law No. 5441 prohibits non-banking institutions from collecting deposits, except through special laws.³⁵ Currently, TGMP provides microfinance based on Turkey’s Special Provincial Administration Act no. 5302, which in 2005 allowed NGOs to offer microcredit by making partnerships with provincial governorships.³⁶ This special law allows TGMP to collect “voluntary savings” from its own borrower community. Borrowers are encouraged to deposit 1 TL (US \$0.55) per week, and there is no limit on savings collection from members. TGMP is not authorized, however, to collect savings or deposits from the general public, as this would require legal bank status and regulation by BRSA.

³³ In Turkish, TGMP is an “iktisadi kuruluş” under the Turkish Foundation for Waste Reduction (Türkiye İsrافی Önleme Vakfı, or TISVA), and pays separate taxes to Turkey’s taxing authority.

³⁴ The Law of Foundations is 5253 *Dernekler Kanunu*.

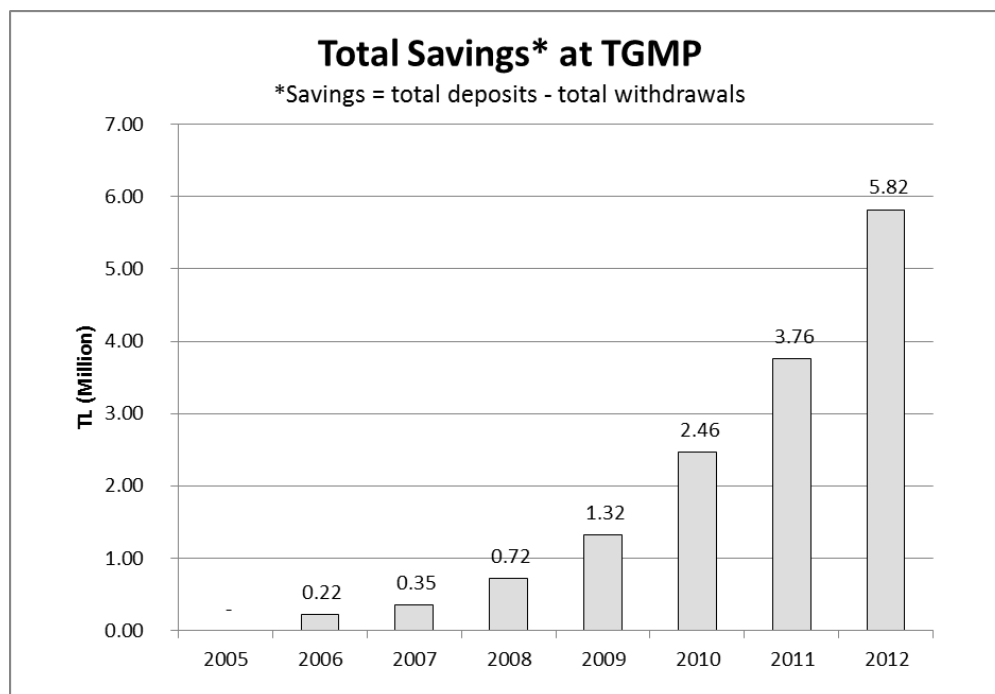
³⁵ “Other than credit institutions and those authorized by special laws, no real or legal person, essentially or secondarily by assuming a profession, shall accept deposits or participation funds.” Banking Law No. 5441, Article 60.

³⁶ Articles no. 6a and 64c, Special Provincial Administration Act no. 5302.

Interestingly, TGMP's borrowers do not receive any interest revenue on their savings balances. In the past, many borrowers expressed moral opposition to interest revenue on savings, given the traditions of Islamic banking, which views interest rates as a form of exploitation (E. Akgül 2013). In addition, a borrower's savings balance is considered "cash guarantee" for her loan in the case of default. Although the voluntary savings program is intended as a personal emergency fund, the savings TGMP collects are distributed as loans to more borrowers, in the same way that commercial banks intermediate between savers and investors. In this way, TGMP acts as a financial intermediary.

Normally, banks generate savings by attracting small savers from the general public. To do this, banks offer interest-bearing savings accounts, certificates of deposit, and other products to the public. In the case of TGMP, which is not a chartered bank, financial intermediation is performed by attracting savings only from the borrowers themselves, not the general public. So far, TGMP has been successful at attracting these savings. Since 2003, TGMP has collected 22 million TL (\$12.4 million) in customer deposits, of which 5.82 million TL (\$3.29 million) remains as savings after customer withdrawals. Consequently, TGMP is effectively a financial intermediary: it collects small savings and uses these funds to make loans.

Figure 6: Borrower savings at TGMP (nominal value)



Source: TGMP Business Plan, 2013-2017

Since TGMP then makes investments in productive assets – that is, it gives loans to borrowers who seek access to finance – the literature on financial intermediation tells us this should have an effect on growth, measured by per capita income.

The next chapter will present results from an analysis of the relationship between loan amount and borrower income.

Chapter 3: Empirical Analysis

Purpose

The purpose of this study is to determine what correlation exists between loans and borrower income at Turkey's largest microfinance institution, the Turkish Grameen Microfinance Program (TGMP), holding constant a number of borrower characteristics. Secondly, this study aims to identify other unique correlations between loans and borrower characteristics that can help determine the effectiveness of the microfinance program in reducing poverty.

Study design

Identifying the effect of loans on income requires a controlled experiment in which low-income individuals are randomly assigned either to the treatment group (loan recipients) or to the control group. The mean difference in total income between the treatment group and the control group indicates whether or not the loan has a statistically significant effect on income. Since an experiment requires ample time and resources, which was not possible in this study, this is an area of opportunity for future research.

When an experiment has not been conducted and panel data is unavailable, pooled data may be analyzed. Unless all omitted variables can be accounted for, along with other controls to rule out reverse causality, one can only establish a correlation between the independent variable(s) and the outcome. For this study, there are many relevant omitted variables – such as borrower education level – for which there is no available data. Consequently, there is bias in the estimate of the effect of loans on income. Moreover, an effect cannot be established. While this

is not ideal, it is still useful to identify the correlation between loans and income, holding a number of other relevant factors constant. For example, correlations can be a tool for predicting outcomes for individuals who match the characteristics defined in the model. Moreover, a correlation informs future researchers on how to analyze even further any statistical relationships between relevant variables.

Since income data among TGMP borrowers is unavailable, a proxy will be used. The available proxy data is total deposits. Presumably, as a borrower earns a return on her business venture, she earns an income stream, with which she pays for various consumption expenses. If her income stream is increasing, her disposable income also increases. Given access to a deposit account, the borrower deposits a portion of disposable income into a savings account. In this way, it is likely that deposits and income are positively correlated; it is unlikely that as income decreases, deposits increase.³⁷ Given this scenario, a rising level of deposits suggests that income is also rising.

A noteworthy concern is that borrowers may, upon receiving a loan in cash, immediately deposit this money into the deposit account for safe keeping before using the money for investment. In this case, total deposits would not represent income from business revenues, but would instead comprise liquid liabilities. This event is unlikely, however, because TGMP requires borrowers to immediately begin the repayment process one week after receiving a loan. Consequently, borrowers tend to purchase capital immediately so that they can invest the full loan amount in their businesses. Loan officers also routinely monitor borrowers' businesses to

³⁷ It is plausible that as a person's income rises, they may choose to spend more of their income stream for current consumption in anticipation of rising income in the future, in which case deposits could fall. However, in the case of low-income individuals whose income streams are highly fickle, it is unlikely that a current rise in income would result in lower level of deposits. For low-income individuals, savings deposits are essentially an insurance against future income drops or unexpected consumption needs. As such, savings deposits and income are likely to be positively correlated for low-income individuals.

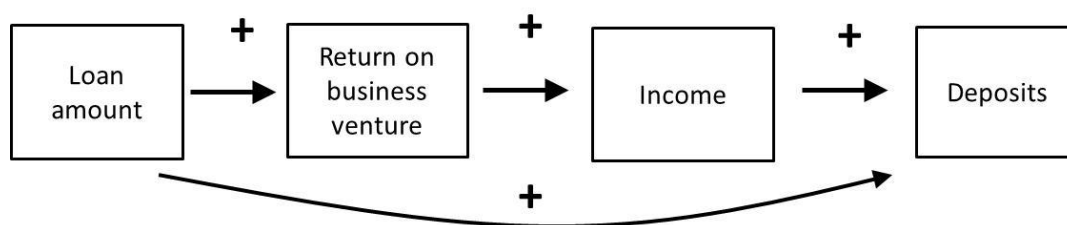
ensure that the loans are being used for investment, not consumption. In the same way, loan officers discourage borrowers from placing their cash loans in the deposit account, which was designed for holding savings, not liquid liabilities. Anecdotal experience from loan officers suggests that it is unlikely for a borrower to place her loan money into her deposit account.³⁸

As a check on robustness, a second test uses balance on savings as the outcome variable. The “savings balance” variable represents the remainder in a borrower’s savings account after the withdrawal of funds: that is, savings balance equals total deposits minus total withdrawals. Since borrower income, savings, and total deposits are likely to be positively correlated, this second test provides an additional check on the relationship between total loan amount and borrower income.

Given these considerations, a working hypothesis on the effect of loans on total deposits follows:

Hypothesis: The total loan amount has a statistically significant effect on total deposits, and this relationship should be positive. Consequently, the correlation between total loans and total deposits is positive and statistically significant.

Figure 7: Effect of loans on deposits



³⁸ This is supported by field visits by the author to TGMP center meetings in Diyarbakır and Denizli as well as conversations with loan officers in Ankara, Istanbul, and Amasya.

Reverse causality between loan amount and total deposits is difficult to rule out in the absence of an experiment. It is possible that loans do not cause high income, but rather that higher income causes individuals to receive more loans. That is, perhaps borrowers with higher income have established businesses, and receive larger loans based on their low risk profile. Robinson (1952) gave this argument to describe the relationship between banks and growth, and Montiel (2003) states that there is at least an endogenous relationship between financial intermediation and growth. However, all borrowers at TGMP start with a loan ceiling of 1000 TL, which rises as borrowers repay their loans on time. This limits the ability of “wealthy borrowers” to obtain larger loans than other non-wealthy borrowers, at least initially. Furthermore, TGMP currently has no risk assessment mechanism to review loan applicants. Given TGMP’s social mission, almost all loan applicants are granted loans. In addition, a variable on time at TGMP can differentiate the new borrowers from old. If the coefficient on years at TGMP positive, this suggests the longer borrowers stay with the program, the more their incomes tend to rise. Finally, a variable called “established business” controls for borrowers who had a business prior to joining TGMP. Consequently, although reverse causality cannot be ruled out, it is nonetheless a dubious occurrence for average borrowers. Once again, further research is needed to definitively address this issue.

Source of data

The data source for this study is TGMP’s “Damlabank” database, a custom software package. The system contains information on all of TGMP’s past and current borrowers as of November 22, 2012. This is pooled data set which captures a “snapshot” of past and previous

borrowers: that is, as of November 22, 2012, the dataset describes borrowers' total loans received, total deposits, balance on savings, number of years as an active borrower at TGMP, and other information. For this study, borrowers at a particular branch (Zonguldak Province) were removed due to fraud involving several loan officers. In total, there are 103,957 individuals in the data set, which includes both active borrowers (those with outstanding loan balances) and passive borrowers (those who once had a loan, but have left the organization). There were multiple cases of human error and missing entries in the dataset.³⁹

The outcome variable in the first test is “total deposits,” which is a proxy for income. This represents the cumulative amount a borrower adds to her deposit account at TGMP. This does not represent “balance on savings,” which is equal to total deposits minus total withdrawals. Nonetheless, a second test uses “balance on savings” as the dependent variable for the sake of comparison.

The explanatory variable of interest is “total loan amount,” which refers to the cumulative amount of loans a borrower has received from TGMP. Other variables have been included in order to remove omitted variable bias and to reduce standard errors of the coefficient estimates. Due to data limitations, a number of potential omitted variables – that is, factors which are correlated both with the explanatory variable of interest and the outcome – are unavailable. Namely, the Damlabank dataset does not contain information on borrowers' starting income

³⁹ There was missing marital status information for 424 individuals, which also had many types of human error (such as impossible loan amounts, incorrectly written Turkish ID numbers), and these individuals were deleted. Ages over 95, totaling 12 entries, were deleted from the data. In total, 436 individuals were deleted from the data. Entries with ages under 15 years (totaling 516 entries) were replaced with “n/a”. With respect to time spent with the organization, there were 17 error (negative) entries and 4 impossibly large entries, which were replaced with “n/a”. Human error in total savings (where the loan officer accidentally wrote a date instead of a number) occurred for 369 individuals and in 206 individual for withdrawn savings, and this information was replaced with “n/a.” Human error in outstanding loans occurred for 95 individuals, and this information was replaced with “n/a.” Missing age data occurred for 3,145 entries, but these individuals were not deleted from the data set. There was missing household size data for 360 individuals, but this information was kept in the data set. There was also missing data on number of years spent at the organization for 13,333 passive members, but these individuals were kept in the data set. Household size data was missing for 363 individuals, and this was kept in the data set.

level, level of education, debts outside of TGMP, wealth, or deposit accounts outside of TGMP. In addition, the data does not describe the success level of a borrower's business venture, or provide information about her economic sector other than a dummy variable for agriculture. These topics are grounds for another study.

Consequently, the regression can at most indicate correlations between variables, *ceteris paribus*. Since no previous quantitative study exists on microfinance in Turkey, this study can be taken as a first step towards fully understanding the effect of microfinance on reducing poverty in the country.

Description of variables

All currency information within the dataset is in nominal Turkish lira. Although real values (accounting for inflation) would more accurately describe changes in borrower real income, limitations in the dataset prevent the accurate deflating of currency information. However, the short time horizon of the dataset – ten years – reduces the urgency of calculating real currency values. Furthermore, several real variables, such as number of loans, partially make up for the lack of data on real income.

“Total loan amount” refers to the cumulative amount of loans a member has received from TGMP. The “outstanding loan amount” refers to the amount of money a member owes TGMP. “Loan number” refers to the number of separate loans received. For example, a borrower may have received a total loan amount of 3,000 TL, but in three separate loans. The “total loan amount” is 3,000 TL, while the “loan number” is three.

“Total deposits” refers to the cumulative amount of deposits a borrower has made into her account, expressed in Turkish lira. “Savings balance” refers to the amount left in a

borrower's savings account after the withdrawal of deposits. For example, a borrower may have total deposits of 10,000 TL, total withdrawals of 8,000 TL, and therefore a savings balance of 2,000 TL.

The nominal interest rate on all loans is 15% flat, and the maturity is 46 weeks. Because Turkey has experienced substantial inflation over the past decade, real interest rates vary. However, due to the difficulty of matching real interest rates with loan repayment schedules per borrower, a variable describing real interest rates is not included in the model.

Table 6: Real interest rates at TGMP and in Turkey commercial sector

Real interest rates at TGMP and in Turkey's commercial sector										
	2003	2004	2005	2007	2007	2008	2009	2010	2011	2012
Average annual inflation	25%	11%	10%	11%	9%	10%	6%	9%	6%	9%
Nominal interest rate (TGMP)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Nominal interest rate (commercial)	48%	35%	26%	28%	27%	27%	21%	19%	17%	13%
Real interest rate (TGMP)	-10%	4%	5%	4%	6%	5%	9%	6%	9%	6%
Real interest rate (commercial)	23%	24%	16%	17%	18%	17%	15%	10%	11%	4%

Source: World Development Indicators, TGMP 2012 Business Plan, Economist Intelligence Unit

“Agricultural sector” is a dummy variable indicating that a borrower has used the loan for work this sector. “Passive” is a dummy variable indicating that a borrower at one point received a loan, but has left TGMP. “Has established business” means the borrower had a small enterprise before coming to TGMP and is using the new loan to expand this business. “Married” is a dummy variable indicating the borrower is married, while “widowed” indicates the borrower is widowed, divorced, or separated from her husband. “Single” means the borrower has never been married.

“Years at TGMP” is a scale variable indicating how long the borrower has been involved with the organization, while “age” refers to the age of the borrower. “Insurance” means the borrower has started keeping a microinsurance account, and therefore makes a payment of 1 TL per month. There are seven variables for regional categories: Aegean, Black Sea, Central Anatolia, East Anatolia, Marmara, Mediterranean, and Southeast. Since all borrowers at TGMP are women, there is no need for a variable describing sex.

“Refinanced” means a borrower had difficulty repaying her loan, and therefore received extended maturity on her outstanding loan. There is no variable to describe default, since loan default is technically not permissible at TGMP. Instead, borrowers who have difficulty repaying their loans are initially guaranteed by their four group members. If the borrower continuously cannot repay her loan, she is considered a “refinanced” borrower. As such, refinanced borrowers include those who have “defaulted” on their loans.

Summary statistics

The following tables describe descriptive statistics of the borrower pool at TGMP, minus Zonguldak Branch:

Table 7: Borrowers by geographic region

Borrowers by Geographic Region							
Variable	Type	N	Min	Max	Mean	Std. Error	Median
Aegean	dummy	103957	0	1	0.09	0.289	0
Black Sea	dummy	103957	0	1	0.09	0.291	0
Central	dummy	103957	0	1	0.14	0.342	0
East	dummy	103957	0	1	0.08	0.265	0
Marmara	dummy	103957	0	1	0.10	0.301	0
Mediterr	dummy	103957	0	1	0.15	0.358	0
Southeast	dummy	103957	0	1	0.35	0.478	0

Table 8: Borrower descriptive statistics

Borrower informaton							
Variable	type	N	Min	Max	Mean	Std. Error	Median
age	scale	100299	15	94.9	39.1	11.9	37.67
years at TGMP	scale	90603	0	9.67	1.56	1.28	1.25
passive member	dummy	103957	0	1	0.42	0.494	0
works in agriculture	dummy	103957	0	1	0.06	0.229	0
has microinsurance	dummy	103955	0	1	0.23	0.421	0
married	dummy	103957	0	1	0.83	0.374	1
never been married	dummy	103957	0	1	0.11	0.314	0
separated/divorced/ widowed	dummy	103957	0	1	0.06	0.232	0
household size	scale	103595	1	20	4.21	1.724	4

Table 9: Loan-related descriptive statistics

Loan information							
Variable	type	N	Min	Max	Mean	Std. Error	Median
total loan amount	scale	103957	0 TL	49500 TL	1718.40 TL	1871.60 TL	1000 TL
number of loans	scale	103955	1	17	2.69	1.591	2
outstanding loan balance	scale	103862	-16.50 TL	9935.50 TL	336.05 TL	499.77 TL	0 TL
total deposits	scale	103589	-2.50 TL	45962 TL	194.07 TL	316.07 TL	114.50 TL
total withdrawn deposits	scale	103751	-28.5 TL	12591.50 TL	143.99 TL	244.72 TL	92 TL
balance on savings	scale	103551	-214.50 TL	45962 TL	49.84 TL	176.89 TL	12.50 TL
is refinanced	dummy	103957	0	1	0.03	0.167	0
has established business	dummy	103957	0	1	0.04	0.191	0

Table 10: Deposits- and savings-related descriptive statistics

Deposits information (TL)							
Variable	type	N	Min	Max	Mean	Std. Error	Median
Total deposits	scale	103589	-2.50	45,962.00	194.07	316.07	114.50
Total withdrawn deposits	scale	103951	-28.50	12,591.00	143.99	244.72	92.00
Balance on savings	scale	103551	-214.50	45,962.00	49.84	176.89	12.50

Results

The study involves two separate tests. Both tests represent an attempt to understand the relationship between microloans and borrower income, proxied by borrowers' deposit-making habits. Test 1 shows the relationship between total loan amount and *total deposits* per borrower. Here, "total deposits" represents the accumulation of deposits into a borrower's savings account at TGMP. Test 2 shows the relationship between total loan amount and *savings balance* per borrower. Here, "savings balance" is equal to total deposits minus total withdrawals from a borrower's savings account. Both total deposits and savings balance are considered proxies for income per borrower, since these three variables are likely to be positively correlated.

Test 1: Relationship between total loan amount and total deposits per borrower

Method: Ordinary Least Squares (OLS)

Regression model:

$$Y(\text{total deposits}) = \beta_0 + \beta_1(\text{total loan amount}) + \beta_2(\text{number of loans}) + \beta_3(\text{outstanding loan amount}) + \beta_4(\text{agricultural sector}) + \beta_5(\text{passive member}) + \beta_6(\text{years at TGMP}) + \beta_7(\text{married}) + \beta_8(\text{widowed}) + \beta_9(\text{household size}) + \beta_{10}(\text{age}) + \beta_{11}(\text{has microinsurance}) + \beta_{12}(\text{refinanced}) + \beta_{13}(\text{established business}) + \beta_{14-19}(\text{regional dummies})$$

To avoid perfect multicollinearity, the omitted variables are "single" and "Aegean."

Hypothesis:

$H_0: \beta_1 = 0$

$H_a: \beta_1 \neq 0$

Alpha level: 5% two-tailed test

Table 11: Regression results (Y = total deposits)

Test 1: Relationship between total loan amount and total deposits (per borrower)															
Y = total deposits	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Adj. R ²	0.132	0.208	0.199	0.235	0.223	0.228	0.236	0.236	0.241	0.245	0.245	0.245	0.254	0.255	0.259
N (Residual df)	90263	90262	103585	90261	103587	103584	103488	103487	103486	90163	90161	87708	87706	87705	87699
β_0 Constant	57.508*** (1.614)	-45.090*** (1.899)	-44.930*** (1.729)	9.538*** (2.100)	57.024*** (1.176)	14.916*** (1.951)	32.948*** (2.016)	33.100*** (2.028)	64.964*** (2.344)	53.320*** (2.501)	42.660*** (3.626)	24.463*** (5.125)	106.332*** (6.619)	107.834*** (6.614)	101.851*** (7.179)
β_1 loan amount				0.056*** (0.001)	0.080*** (0.000)	.058*** (0.001)	0.081*** (0.001)	0.081*** (0.001)	0.082*** (0.001)	0.078*** (0.001)	0.078*** (0.001)	.077*** (0.001)	0.086*** (0.001)	0.083*** (0.001)	0.083*** (0.001)
β_2 number of loans		72.073*** (0.778)	88.627*** (0.552)	15.391*** (1.259)		29.520*** (1.094)	18.162*** (1.141)	18.149*** (1.141)	19.403*** (1.138)	9.925*** (1.283)	9.857*** (1.283)	9.821*** (1.308)	-9.220*** (1.767)	-8.238*** (1.767)	-10.776*** (1.770)
β_3 outstanding loan amount							-0.081*** (0.002)	-0.081*** (0.002)	-0.118*** (0.003)	-0.103*** (0.003)	-0.103*** (0.003)	-0.101*** (0.003)	-0.102*** (0.003)	-0.110*** (0.003)	-0.107*** (0.003)
β_4 agriculture								-2.582 (3.754)	-1.557 (3.741)	-4.129 (4.189)	-5.081 (4.193)	-6.807 (4.287)	-8.204 (4.264)	-8.400* (4.260)	-9.541* (4.276)
β_5 passive									-57.289*** (2.135)	-50.442*** (2.417)	-50.503*** (2.416)	-50.044*** (2.483)	-80.557*** (2.932)	-84.148*** (2.942)	-92.554*** (2.967)
β_6 years at TGMP	93.957*** (0.801)	32.227*** (1.015)		31.649*** (0.997)						24.296*** (1.015)	24.152*** (1.015)	25.339*** (1.054)	20.571*** (1.095)	21.860*** (1.098)	19.305*** (1.109)
β_7 married											13.521*** (3.096)	14.295*** (3.255)	13.780*** (3.238)	13.685*** (3.235)	11.024** (3.239)
β_8 widowed											-2.592 (4.980)	6.787 (5.463)	8.650 (5.434)	5.138 (5.429)	5.827 (5.418)
β_9 household size												5.600*** (0.582)	5.261*** (0.579)	5.235*** (0.578)	3.144*** (0.600)
β_{10} age												-0.156 (0.088)	-0.194* (0.088)	-0.192* (0.087)	-0.141 (0.088)
β_{11} insurance													-79.866*** (4.144)	-76.593*** (4.148)	-80.345*** (4.144)
β_{12} refinanced													-150.572*** (6.411)	-149.486*** (6.405)	-150.352*** (6.446)
β_{13} established business														71.961*** (5.623)	72.480*** (5.615)
β_{14} BlackSea															58.855*** (4.579)
β_{15} Central															32.753*** (4.389)
β_{16} East															-19.924*** (5.073)
β_{17} Marmara															-3.097 (4.425)
β_{18} Mediterr															17.231*** (4.150)
β_{19} Southeast															45.685*** (3.851)
Omitted variables (to avoid perfect multicollinearity): single, Aegean															
p-value: *** < 0.001 ** < 0.025 * < 0.05															

Looking at Model 5, the results show a statistically significant association between total loan amount and total deposits. On average, 1 TL in loans is associated with 0.080 TL in deposits. As variables are added, this relationship holds, and the magnitude increases: looking at Model 15, 1 TL in loans is associated with 0.083 TL in deposits, *ceteris paribus*. In other words, a borrower who receives 1000 TL (US \$565) in loans may be expected, on average, to have total deposits of 83 TL (\$US 47), all else equal. Since deposits and income are almost certainly positively correlated, this result indicates that loan amount is also positively correlated with high income. This overall conclusion takes into account borrowers who have an established business (β_{13}), who tend to have more in total deposits than those without an established business.

The “years” variable, indicating how long a borrower has been with TGMP, is also positive and significant. Looking at Model 15, an extra year of staying at TGMP is associated with an average increase of 19.305 TL (US \$10.91) in deposits, all else equal. This could indicate that staying at TGMP helps borrowers increase their income, holding constant whether or not a borrower is refinanced or passive (has left the organization).

Curiously, while the coefficient on total loans is positive, the coefficient on number of loans is negative and significant. On one level, these seem to contradict each other. This result suggests that, *ceteris paribus*, borrowers who obtain loans have more total deposits if this loan amount is received as one loan, not as several separate loans. This could be related to a lurking variable such as business size: borrowers who have larger businesses tend over time to have larger individual loans, while borrowers with start-ups or smaller businesses tend to need many smaller loans. Larger businesses tend to generate more income than smaller businesses. Data on business size is necessary to account for this potential lurking variable.

The coefficient on the refinance variable is negative and significant, which appears logical. Borrowers who have difficulty repaying their loan are also unlikely to have deposits. Likewise, passive borrowers – those who have voluntarily left the organization – tend to have fewer deposits, all else equal. Having a refinanced loan or leaving the organization may indicate poor business success or dissatisfaction with the loan program. Factors leading to dissatisfaction with the loan program are excellent grounds for another study.

As an addition to this analysis, a second regression model using balance on savings per borrower as the outcome variable is useful for understanding borrower welfare. Since it is likely that total deposits and savings balance are both positively correlated with borrower income, these outcome variables can be used separately as an additional check on robustness.

Test 2: Relationship between total loan amount and balance on savings per borrower

Method: Ordinary Least Squares (OLS)

Regression model:

$$Y(\text{balance on savings}) = \beta_0 + \beta_1(\text{total loan amount}) + \beta_2(\text{number of loans}) + \beta_3(\text{outstanding loan amount}) + \beta_4(\text{agricultural sector}) + \beta_5(\text{passive member}) + \beta_6(\text{years at TGMP}) + \beta_7(\text{married}) + \beta_8(\text{widowed}) + \beta_9(\text{household size}) + \beta_{10}(\text{age}) + \beta_{11}(\text{has microinsurance}) + \beta_{12}(\text{refinanced}) + \beta_{13}(\text{established business}) + \beta_{14-19}(\text{regional dummies})$$

To avoid perfect multicollinearity, the omitted variables are “single” and “Aegean.”

Hypothesis:

$H_0: \beta_1 = 0$

$H_a: \beta_1 \neq 0$

Alpha level: 5% two-tailed test

Table 12: Regression Results (Y= Balance on Savings)

Test 2: Relationship between total loan amount and balance on savings (per borrower)															
Y = balance on savings	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Adj. R ²	0.006	0.010	0.012	0.016	0.019	0.019	0.029	0.029	0.062	0.051	0.051	0.050	0.054	0.055	0.056
N (Residual df)	90227	90226	103547	90225	103549	103546	103451	103450	103449	90128	90126	87673	87671	87670	87664
β_0 Constant	39.592*** (0.986)	25.151*** (1.211)	17.127*** (1.075)	39.304*** (1.359)	27.413*** (0.739)	34.310*** (1.231)	23.245*** (1.272)	23.372*** (1.280)	67.852*** (1.459)	66.618*** (1.600)	63.392*** (2.319)	62.457*** (3.288)	95.105*** (4.260)	95.851*** (4.259)	102.781*** (4.634)
β_1 loan amount				0.014*** (0.001)	0.013*** (0.000)	0.017*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.007*** (0.001)	0.006*** (0.001)	0.006*** (0.001)
β_2 number of loans		10.142*** (0.496)	12.129*** (0.343)	-4.538*** (0.814)		-4.836*** (0.690)	2.025** (0.720)	2.014** (0.720)	3.754*** (0.708)	2.924*** (0.820)	2.908*** (0.820)	2.946*** (0.839)	-4.807*** (1.137)	-4.320*** (1.138)	-4.597*** (1.143)
β_3 outstanding loan amount							0.049*** (0.002)	0.049*** (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.005** (0.002)	-0.005** (0.002)
β_4 agriculture								-2.167 (2.369)	-0.732 (2.678)	-1.126 (2.681)	-1.430 (2.749)	-1.719 (2.745)	-2.240 (2.745)	-2.337 (2.743)	-4.406 (2.761)
β_5 passive									-79.923*** (1.329)	-79.728*** (1.545)	-79.746*** (1.545)	-80.292*** (1.592)	-92.463*** (1.887)	-94.247*** (1.894)	-94.536*** (1.915)
β_6 years	11.255*** (0.489)	2.570*** (0.647)		2.420*** (0.645)						2.167** (0.649)	2.121** (0.649)	2.393*** (0.676)	0.437 (0.705)	1.078 (0.707)	1.181 (0.716)
β_7 married											4.172* (1.980)	4.245* (2.088)	4.086 (2.084)	4.039 (2.083)	3.178 (2.091)
β_8 widowed											-2.012 (3.185)	-0.930 (3.504)	-0.256 (3.498)	-0.013 (3.498)	-0.018 (3.498)
β_9 household size												0.619 (0.373)	0.497 (0.372)	0.485 (0.372)	0.665 (0.387)
β_{10} age												-0.038 (0.056)	-0.052 (0.056)	-0.051 (0.056)	-0.052 (0.057)
β_{11} insurance													-31.877*** (2.667)	-30.251*** (2.671)	-30.528*** (2.675)
β_{12} refinanced													-53.689*** (4.126)	-53.148*** (4.124)	-49.180*** (4.161)
β_{13} established business														35.739*** (3.620)	36.147*** (3.624)
β_{14} BlackSea															-6.380* (2.956)
β_{15} Central															-15.048*** (2.833)
β_{16} East															-18.254*** (3.274)
β_{17} Marmara															-6.154* (2.856)
β_{18} Mediterr															1.845 (2.678)
β_{19} Southeast															-6.878** (2.486)
Omitted variables: single, Aegean															
p-value: *** < 0.001 ** < 0.025 * < 0.05															

Looking at Model 5, the results show a statistically significant association between total loan amount and savings balance per borrower. On average, 1 TL in loans is associated with 0.013 TL in savings. As variables are added, this relationship holds, but the magnitude decreases: looking at Model 15, 1 TL in loans is associated with 0.006 TL in deposits, *ceteris paribus*. In other words, a borrower who receives 1000 TL (US \$565) in loans may be expected, on average, to have total deposits of 0.60 TL (\$US 0.34), all else equal.

Although the magnitude of the relationship between total loan amount and the income proxy in Test 2 is considerably lower than that of Test 1, this is logical considering that savings balance represents the difference between total deposits and total withdrawals. Importantly, the coefficients on total loan amount (β_1) are positive and significant in both models. This suggests that loan amount has a positive relationship with borrower income, *ceteris paribus*, and supports the central idea that, on average, microloans are beneficial to low-income borrowers who match the characteristics of those in the sample. Like Test 1, the results of Test 2 also indicate that refinanced borrowers and passive borrowers have fewer savings on average, while borrowers with established businesses tend to have higher savings, *ceteris paribus*.

A key difference between the results of Test 1 and Test 2 is the “years” variable. While in Test 1 the coefficient on the “years” variable (β_6) is positive and significant, in Test 2 this coefficient is not significant. This could indicate that borrowers who remain at TGMP for an extended period tend to deposit more into their savings accounts simply because they have more opportunities to do so. In this case, more “total deposits” might not reflect any increased benefit of staying longer at TGMP. Alternatively, the different outcomes on the “years” variable could indicate that staying at TGMP helps borrowers increase their income, some of which borrowers choose to spend on desired goods such as education for their children. From this perspective,

“total withdrawals” – a proxy for expenditures (not included in either model) – is just as important as total deposits. The savings balance is merely a residual after a borrower makes her desired expenditures from her (presumably new) income stream.

In conclusion, this study finds that there is indeed a statistically significant, positive relationship between total loan amount and total deposits per borrower as well as between total loan amount and savings balance per borrower at TGMP. These two tests combined serve as a check on the robustness of this relationship. These results uphold the theory, based on literature on financial intermediation and growth, that microfinance has a positive effect on growth among low-income segments of Turkey.

Chapter 4: Summary of Findings

The goal of this study was to determine what correlation exists between total loan amount and total income per borrower at Turkey's largest microfinance organization, TGMP. Since no other quantitative study on microfinance has been conducted in this country, the results of this study are of great interest to Turkish policymakers and program managers alike. The results suggest that given a statistically significant, positive correlation between total loans and total deposits per borrower, *ceteris paribus*, the microfinance program run by TGMP is having an impact on reducing poverty in Turkey. This relationship is supported by an additional test using savings balance per borrower as the outcome variable.

This paper first described the theory of financial intermediation on growth based on economic literature, making the case for why microfinance should increase incomes in low-income segments of society. In the same way that commercial banks intermediate between borrowers and savers, microfinance institutions channel "idle" savings to productive investments, which help the economy grow and incomes rise. Empirical studies have confirmed this relationship in the commercial banking sector, although there is ongoing uncertainty about whether the same result holds empirically in the microfinance sector.

Turkey's ambition to become a high-income country and potentially to gain full EU membership has guided the nation's development policy throughout its recent history. Although Turkey has achieved emerging market status and economically outperformed most of its Middle Eastern neighbors, pockets of poverty remain scattered throughout the country. In order to meet EU entry requirements and ensure its continued economic success, Turkey has focused on low-income segments within its national development plans.

The Turkish banking sector traditionally reflected the state's development plans. Since 2005, Turkey's banking sector has been liberalized and also submits to adequate prudential regulatory oversight according to Basel II requirements. There are nonetheless market niches left unfulfilled with respect to demand for financial services, particularly in rural, low-income, and Eastern provinces. The Turkish Grameen Microfinance Program, Turkey's largest microfinance provider, has endeavored to meet this demand since its founding in 2003.

Using data from TGMP, it is likely that microfinance has a significant impact on reducing poverty in Turkey. Namely, loan amounts and total deposits per borrower, a proxy for borrower income, have a statistically significant, positive relationship, *ceteris paribus*. Since reverse causality is unlikely, this result suggests that loans increase borrower welfare in the form of higher income.

To confirm that a causal relationship exists between loans and borrower income, there is a need for a controlled experiment establishing a control group and a treatment group in which borrowers are randomly assigned between these groups. In the absence of this experiment, TGMP should collect data on income, business size, education level, and other omitted variables to reduce bias in the estimate of the effect. Such a study would help inform policy both at the national level and within the management of TGMP.

Chapter 5: Policy Recommendations

This study has demonstrated a need for additional research on microfinance activities in Turkey in order to inform managers of best practices and guide the country's future development policy. Considering that one of Turkey's ambitions is to reduce poverty and gain EU membership, policymakers should reexamine the legal and institutional environment in which current MFIs operate so that this sector can thrive.

Muhammad Yunus, the pioneer of microfinance, states that microfinance institutions can have a greater social impact if they are legally entitled to operate in the formal banking sector as opposed to the non-profit sector (Yunus 2012). Currently, microfinance is not part of Turkey's formal banking sector. This creates uncertainty for market actors as well as institutes a barrier for growth. Furthermore, since Turkey's two existing MFIs are not chartered banks, they are not allowed to collect deposits from the general public. This restricts their financial sustainability. Because TGMP is primarily dependent on donors and subsidized loans, the organization must expand its loan portfolio at a slow pace.

In 2005 and 2007, two draft laws⁴⁰ were presented to the Turkish National Assembly by Dr. Aziz Akgül, then acting Member of Parliament representing Diyarbakir Province (A. Akgül 2007). These laws would create a legal framework establishing the methods and principles for microfinance institutions in Turkey (A. Akgül 2007, 31). The laws outline the scope of activities, capital requirements, deposit-taking rules, and organizational framework of microfinance institutions, as well as regulatory status within Turkey's financial system. MFIs would remain non-profit entities, but they would have the ability to collect deposits from the general public.

⁴⁰ These draft laws are called: *Damla Mikro Finans Kuruluşu Anonim Şirketi (Damlabank) Hakkında Kanun Teklifi (2007)* and *Mikro Finans Kuruluşları Hakkında Kanun Teklifi (2006)*.

Deposit-taking MFIs would be legally treated like banks, but receive tax breaks as non-profit organizations. These laws would decrease TGMP's dependency on external funds while allowing it to function independently from provincial governments.

These two laws have not yet been passed in Parliament due to political dissent in Turkey and opposition from commercial banks (Beşnek 2012, A. Akgül 2012). The current hiatus is an opportunity for policymakers to critically examine how a formal microfinance sector should operate in Turkey. A well designed policy framework should allow MFIs to sustainably finance operations through savings deposits and other instruments. From the perspective of government regulators, this framework should also allow for prudent oversight. Once an MFI has bank status, Turkey's banking regulating authority (BRSA) has the ability to lower the risk posed to consumers and the sector as a whole. Since the microfinance sector specifically targets low-income segments, consumers may be more vulnerable to improper management.

The following is a set of guidelines to guide Turkish policymakers in this endeavor:

Guidelines for designing a microfinance regulatory framework in Turkey

- 1.) The overall framework for MFI regulation must preserve and uphold social mission of microfinance, while also making sure MFIs are run efficiently and responsibly from a financial standpoint. Turkey's Islamic banking sector, which is regulated under separate rules than commercial banks, can provide a potential model (Beşnek 2012).
- 2.) Regulation should not be so stringent that MFIs prefer non-profit status instead of the formal sector (Brunnermeier, et al. 2009, 10).

- 3.) MFIs should not be allowed to “cherry-pick” regulations. While the regulatory framework should incorporate the social goals of microfinance, MFIs should conform to financial discipline and strict reporting requirements.
- 4.) An MFI’s transition from a non-profit to a formal bank should be gradual. This allows experts to design a new operational system and raise the necessary equity to compete with private-sector institutions. The successful transition of Bolivia’s BancoSol took two years.⁴¹
- 5.) Larger MFIs may require stricter control, since more assets are at stake (Brunnermeier, et al. 2009).
- 6.) Risk-based control rewards healthy banks. In 2010, the Bank of Zambia designed a risk-based supervision approach, which would make regulatory stringency contingent on the risk profile of individual institutions (Chiumya 2010).
- 7.) Remedial actions via the court system are less effective in the microfinance sector, since clients are often semi-literate and inexperienced with banking laws. Therefore, preventative regulatory action must be given priority status.
- 8.) The regulatory framework should be flexible and able to adapt to new products and trends in the microfinance sector. For example, there is a large opportunity for Turkish MFIs to collect foreign remittances made by expatriates, which reaches over \$1 billion annually (Comini and Faes-Cannito 2010).
- 9.) The governance structure of the newly formed bank should be autonomous and accountable to its board of directors, like any other commercial bank. As a general rule,

⁴¹ Banco Solidario, S.A. (BancoSol) of Bolivia transformed from a microfinance NGO called PRODEM to a commercial bank in 1992. It took a team of experts two years to plan the transition. The bank became so successful that by 1997 it was the first microfinance institution in the world to issue dividends to shareholders. By 2011, BancoSol had nearly 170,000 clients and a portfolio value of \$585.6 million. [<http://www.bancosol.com.bo/>]

the leaders of the parent non-profit organization should not be transferred to lead the regulated bank. The failed experience of Colombia's Finansol⁴² provides a strong lesson (Lee 2001).

10.) It may be necessary to gradually increase the stringency of rules over time as the sector becomes stronger. In Zambia, microfinance regulation moved from a lighter, less-detailed rule system to one with increased stringency (Mwenda 2002).

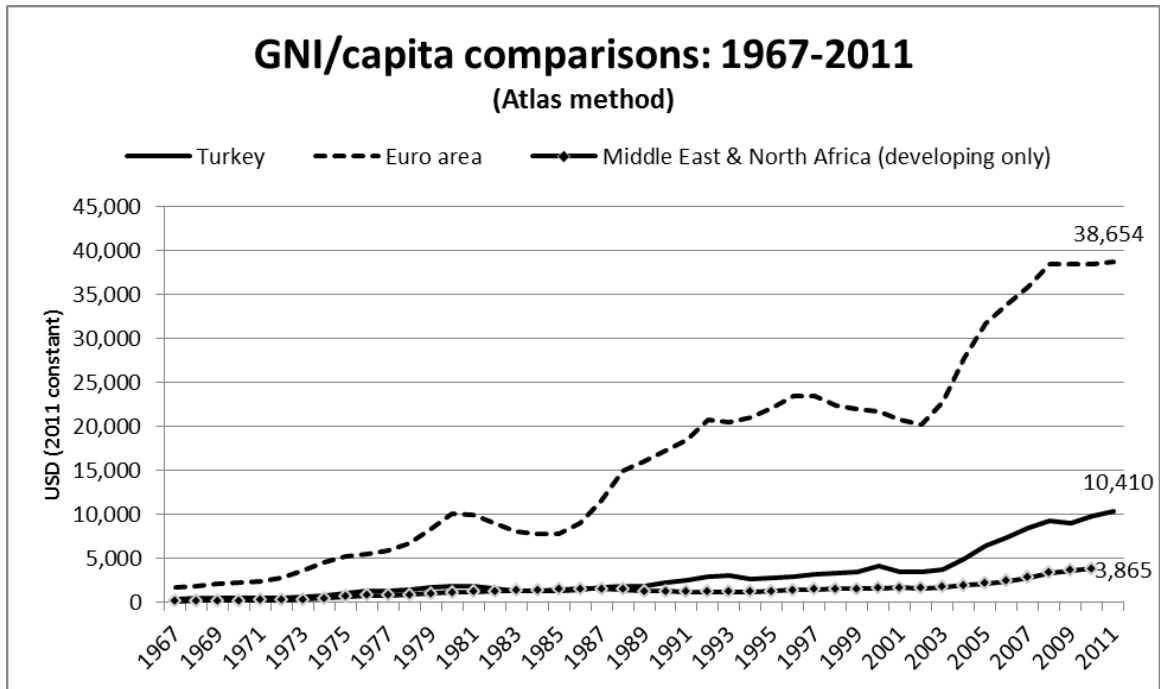
11.) The funding structure of MFIs should reflect their social mission. While interest rate caps are inadvisable because they are a form of financial repression, regulations should encourage industry competition so that MFIs lower costs and increase efficiency.

Finally, more research is needed to determine the optimal strategy for Turkish MFIs to achieve their social goals.

⁴² Finansol of Colombia transformed from an NGO parent to a commercial bank in 1993. Despite starting as a successful NGO, by 1996 Finansol the commercial bank was on the verge of bankruptcy (Pikholz 2001). It was ultimately recapitalized by ACCION International, a US-based non-profit that provides management consulting and investment to microfinance banks around the world. As of 2012, Finansol (renamed Finamérica) has over 74,000 active borrowers, but it continues to hold poor-quality portfolio. One of the reasons for this failed transition was that Finansol's parent organization and founders continued as informal managers, instead of handing authority to the new bank management team.

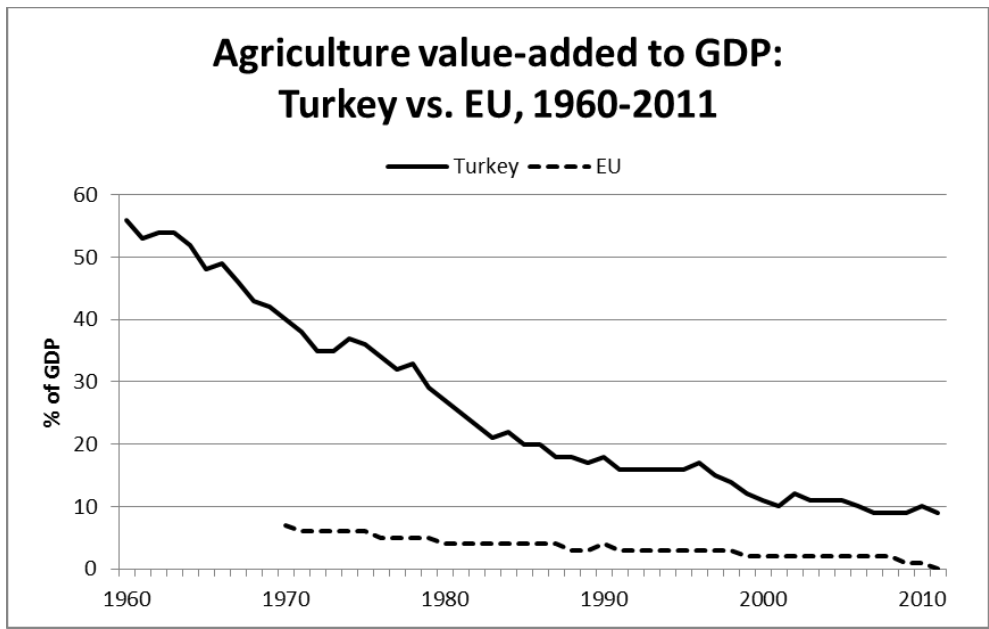
Charts

Figure 8: GNI/capita comparisons: 1967-2011



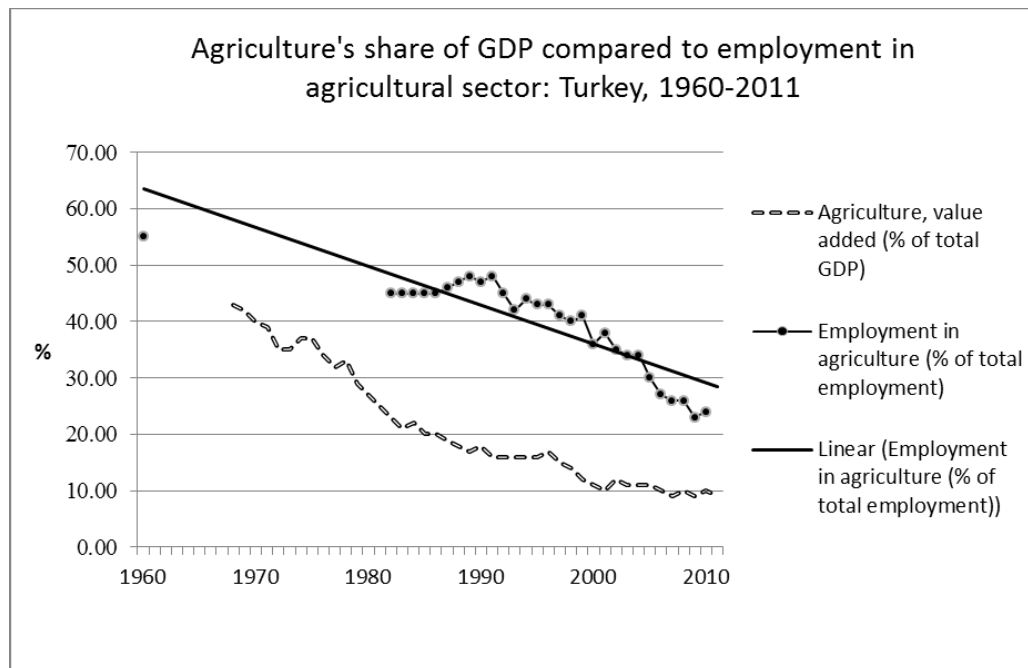
Source: World Development Indicators (World Bank)

Figure 9: Agriculture value-added to GDP: Turkey vs. EU, 1960-2011



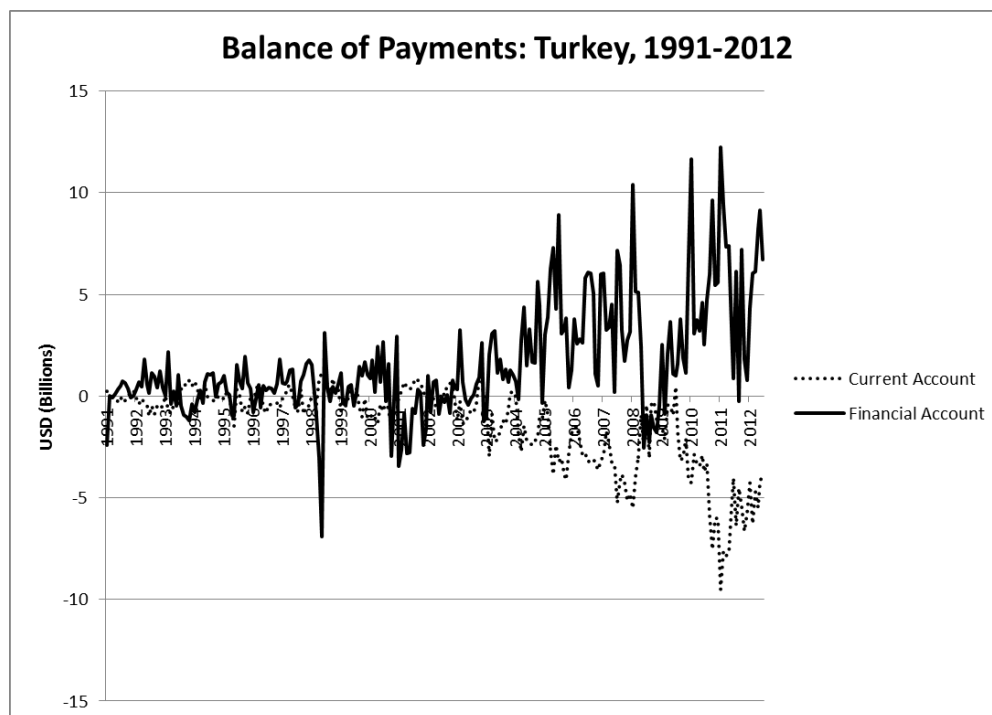
Source: World Development Indicators (World Bank)

Figure 10: Agriculture's share of GDP compared to employment: Turkey, 1960-2011



Source: World Development Indicators (World Bank)

Figure 11: Turkey's balance of payments, 1991-2012



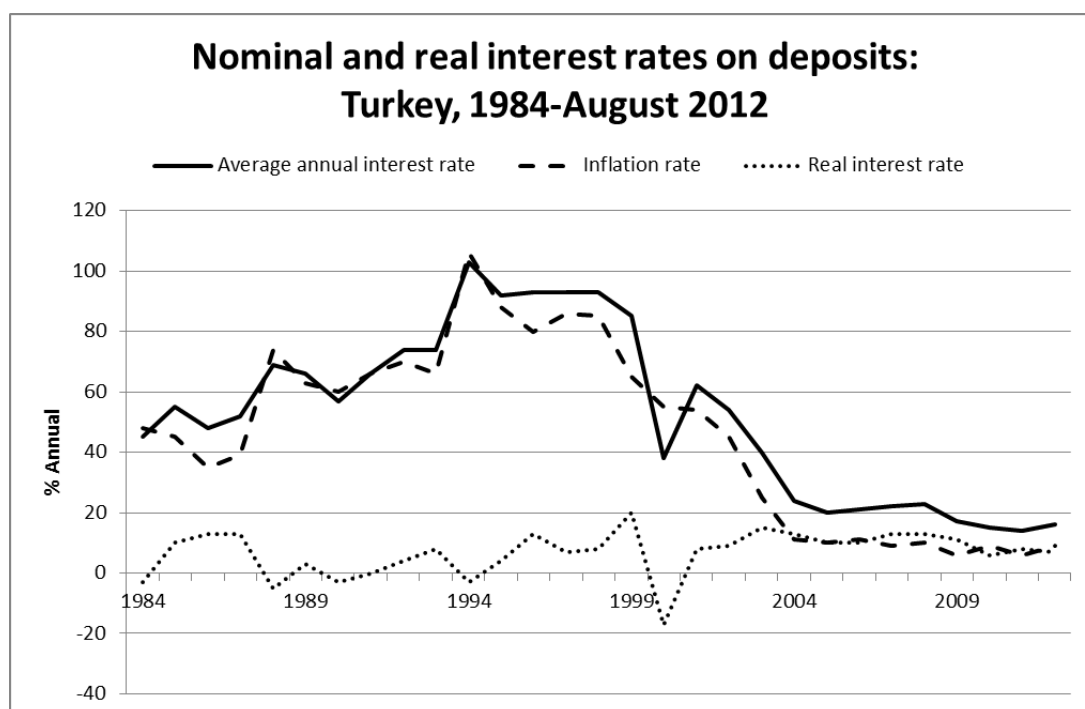
Source: Central Bank of Turkey

Figure 12: Inflation in Turkey: 1961-2012



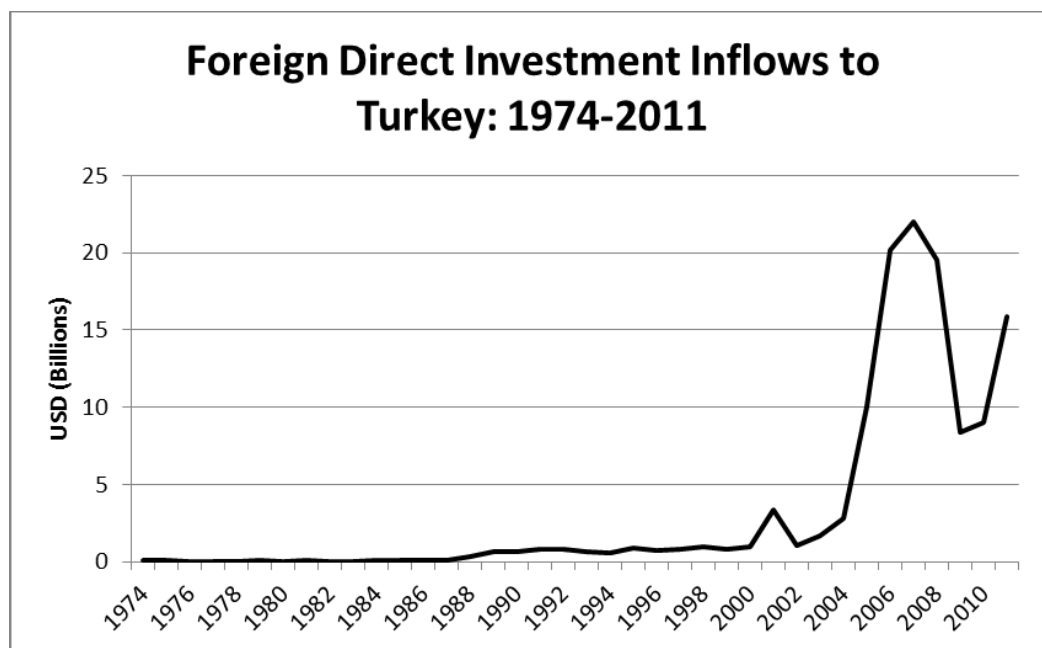
Source: World Development Indicators (World Bank)

Figure 13: Nominal and real interest rates on deposits: Turkey, 1984-2012



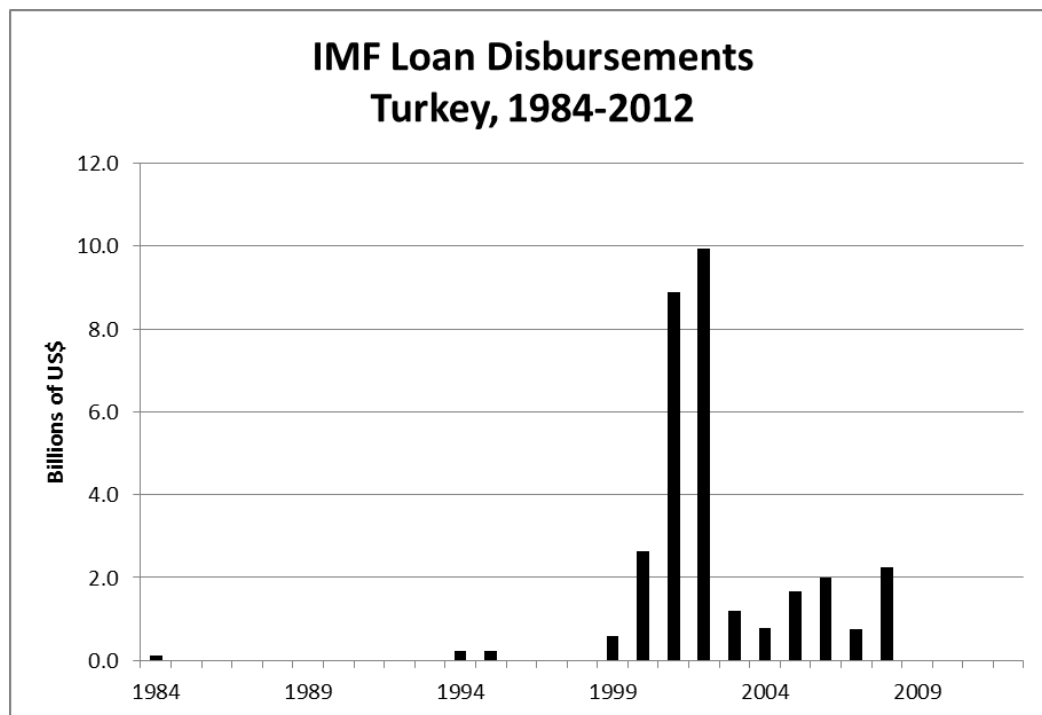
Source: Central Bank of Turkey. Data represents weighted averages of 12-month deposits.

Figure 14: FDI Inflows to Turkey (constant 2012 USD): 1974-2011



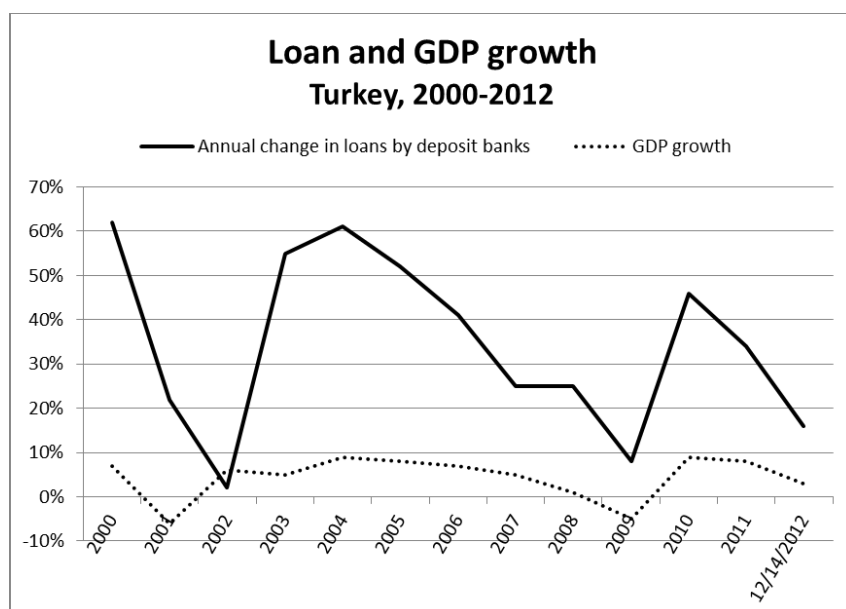
Source: World Development Indicators (World Bank)

Figure 15: IMF loan disbursements (nominal): Turkey, 1984-2012



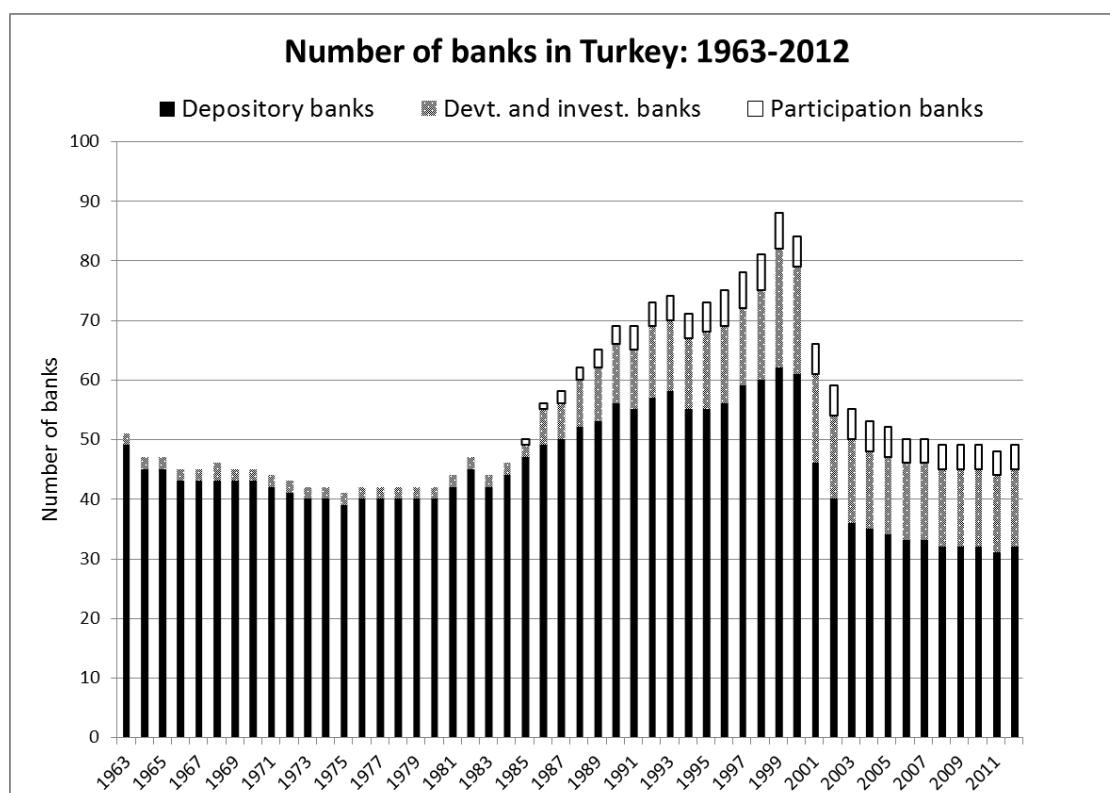
Source: IMF

Figure 16: Loan and GDP growth: Turkey, 2000-2012



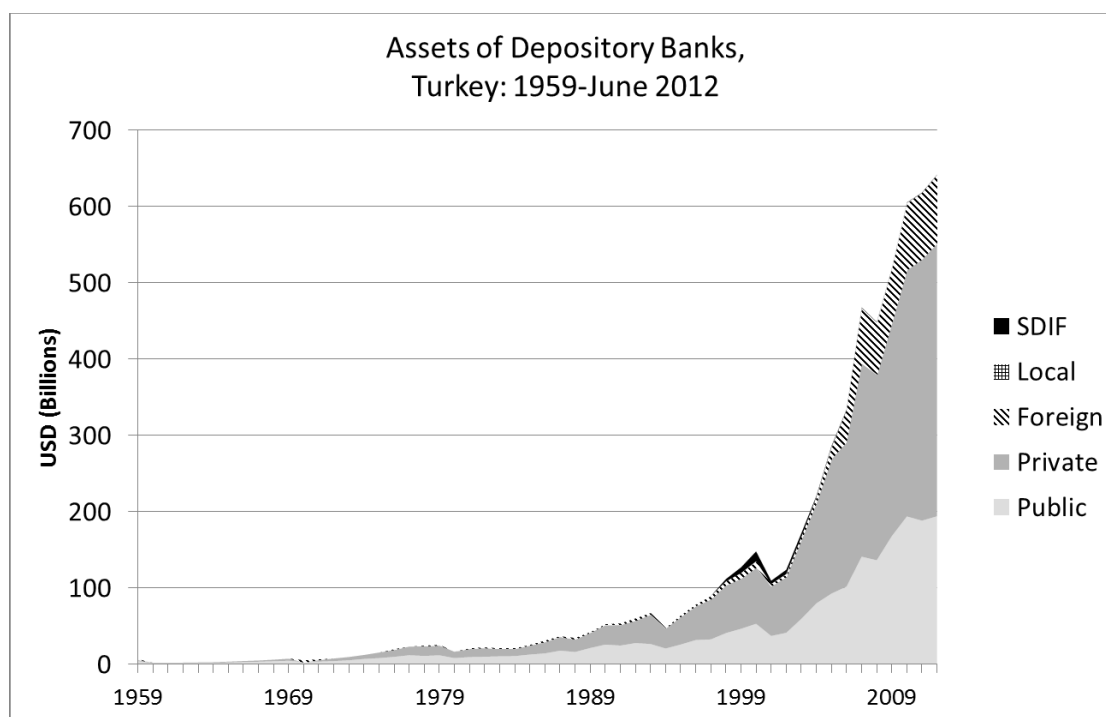
Source: Central Bank of the Republic of Turkey

Figure 17: Number of banks in Turkey: 1963-2012



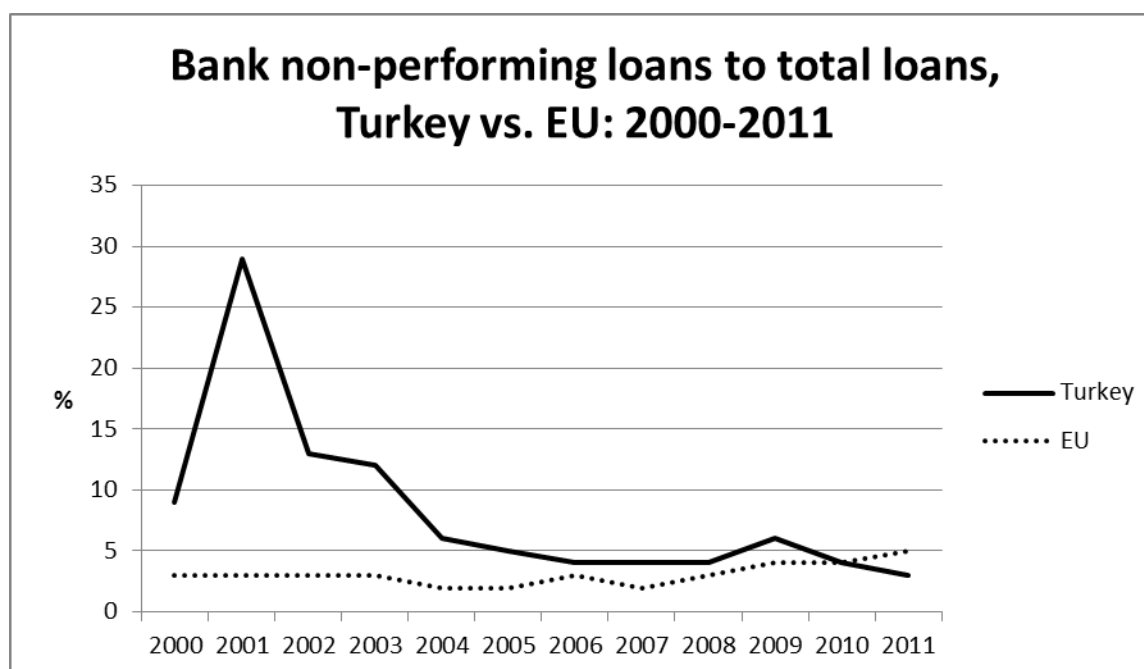
Source: Banks Association of Turkey

Figure 18: Assets of depository banks (nominal), Turkey: 1959-2012



Source: Banks Association of Turkey

Figure 19: Bank non-performing loans to total loans



Source: BRSA

Appendix

Regions of Turkey



Source: <http://www.allaboutturkey.com/regions.htm>

The Banking Regulating and Supervision Agency (BRSA) of Turkey

BRSA, headquartered in Ankara, is Turkey's primary financial regulatory agency (Banking Law 5441, Art. 82). Its task is to establish "confidence and stability in financial markets, the sound operation of the credit system, the development of the financial sector, and the protection of the rights and interests of depositors" (Bank Law 5441, Article 93). Its decisions cannot be influenced or audited by outside authorities (Article 82), and it enjoys political and financial autonomy. The Council of Ministers of Turkey's National Assembly appoints the seven-member Board of BRSA, which serves as the Agency's decision-making authority. Members can only serve one six-year term and cannot take jobs in the banking sector for two years after leaving the Agency. The Chairman of the Board is the top ranking official.

The Banks Association of Turkey (BAT)

The Banks Association of Turkey (BAT) was founded in 1958 in order to “develop the banking profession, ensure the solidarity between banks, and prevent unfair competition” (BAT 2009, 7). The BAT is both a professional association representing member banks, as well as a public institution representing Turkish law. All banks in Turkey, deposit and investment, are required to be members of the BAT. The BAT’s duties include promoting competition, setting professional rules of conduct, and ensuring “the healthy functioning of the banking system” (BAT 2009, 8). As such, the BAT has a consultative relationship with BRSA: when BRSA makes new regulations, the BAT is the executive agency to enforce these rules. The BAT is also a source of publicly available banking statistics, research, and professional conferences. Member banks have voting rights in the BAT’s General Assembly proportional to their share of total assets in the industry. The BAT was chaired by the Governor of the Central Bank until 1994, when leadership was replaced with an election system through the General Assembly. Member banks also elect the Board of Directors and the Auditors (BAT 2009, 8-11).

Participation banks

A participation bank is a depository bank in Turkey based on Islamic principles. This system of banking is designed to meet ethical values consistent with Islamic rulings, or *Shari’ah*. The cornerstone policy is the elimination of interest rates on loans, which is prohibited in the Koran (Institute of Islamic Banking and Insurance 2012). These banks make a profit through profit-sharing mechanisms whereby lenders take part in the profits of the borrower, but assume losses if the borrower’s business venture fails. Under this arrangement, known as a “profit-and-loss sharing” (PLS), the lender assumes partial ownership of the venture being funded, and thus also assumes the risk that the venture fails. In this way,

both parties are seen to participate equally in the venture being financed, hence giving rise to the name “participation banks” in Turkey (2012).⁴³

Islamic banking also forbids the financing of “immoral” businesses such as gambling, drinking alcohol, or prostitution. It can also encompass a wide range of economic policies governing fairness in property rights, income distribution, resource allocation, and the role of government. *Zakat*, for example, is a tax on extremely wealthy individuals that are seen as “hoarding” their money, which is then redistributed to poor households. Investments in financial institutions are not prohibited, so long as the arrangement is led by prudent management and sufficient risk diversification strategies (Institute of Islamic Banking and Insurance 2012). To conform to these standards, Islamic banks must be audited by a Religious Supervisory Board. Borrowers do not have to be Muslim.

The first modern Islamic interest-free bank was started in 1963 in the rural area of Mit Ghamr, Egypt. By 2010, the total assets of Islamic banks worldwide hit \$826 billion, expected to hit \$1.1 trillion by the end of 2012 (Ernst & Young 2011). The largest Islamic banks in terms of asset size are based in Saudi Arabia, United Arab Emirates, Iraq, Iran, Malaysia, Bahrain, and Kuwait (2011).

Participation banks are a recent phenomenon in Turkey. While the first participation bank was established in 1985, participation banks gained greater strength after the 2001 financial crises. By 2012, Turkey’s participation banks represented 4.5% of total bank assets; the Participation Banks Association of Turkey (TKBB) has stated that its goal is to achieve a market share of 10% of total assets by 2020 (Participation Banks Association of Turkey 2010, 4). Today in Turkey, there are four major participation banks. As of June 2012, these four banks held a combined 61 billion lira (\$33.9 billion) in assets, representing 4.8% of Turkey’s total banking assets (Reuters 2012). The largest is Bank Asya, which became public in 2006.

⁴³ To enter such a partnership, both parties together predict the success of the business and negotiate a share of the profit as compensation to the lender, who may in turn stipulate conditions on the use of his funds. In the event of a loss, the capital owner must bear a reduction in the repayment of principal.

Bank Law 5411 (2005)

Bank Law 5441 represents the latest stage in Turkey's banking history. Overall, this new law created stricter rules for banks. The following table presents the basic principles of this law.

Turkish Banking Law No. 5411 (Enacted on November 1, 2005)	
Basic Principles	
<i>Field</i>	<i>Description</i>
Banking fields of activity	<ul style="list-style-type: none"> - Banks may accept deposits, grant loans, issue credit cards and relevant products, carry out foreign exchange transactions, trade simple and complex financial instruments and derivative instruments, intermediate issuance or public offering of capital market instruments, guarantee transactions for third parties, as well as many other functions (Article 4)
Founders and Establishment Rules	<ul style="list-style-type: none"> - Number of shareholders cannot be less than five - All banks are established as joint stock companies (Article 7) - Minimum start-up capital is 30 million Turkish liras in cash (Article 7) - Founders and privileged shareholders must have minimum qualifications and "financial strength and respect" (Article 8) - Bank managers and board members should meet corporate governance qualifications (Article 23-25), to be approved by BRSA (Article 10) - A banking system entrance fee is paid to the Fund (SDIF) (Article 10)
Requires permission of the Board of BRSA	<p>(Not limited to):</p> <ul style="list-style-type: none"> - Establish a bank in Turkey or open first branch, or revoking this permission - Permission for a bank to operate, or revoking this permission (Articles 9-12) - If over 10% of bank shares indirectly or directly are transferred to one shareholder, and again if shares exceed 20%, 33%, or 50% of capital (Article 18) - Assignment of preferential or privileged shares (Article 18) - For a bank to merge with other banks or financial institutions, transfer its assets, liabilities, and other obligations to another bank, to disintegrate, or change shares (Article 19)
BRSA Controls and Standard Ratios	<ul style="list-style-type: none"> - BRSA defines internal control requirements and reporting standards (Article 29) - BRSA defines protective provisions for paid-up capital, reserved funds, own funds, and standard ratios (Article 43) - BRSA can make different standard ratios for specific banks or groups of banks (Article 43) - Minimum capital adequacy ratio (CAR): 8%, which can be adjusted by BRSA (Article 45)
Restrictions on loans	<ul style="list-style-type: none"> - Banks cannot give loans to or purchase securities from members of the board of directors, the general manager, loan officers, or their families (Article 50) - Banks must "regularly analyze and monitor the financial standing of the counterparty, obtain the necessary information and documents" in order to measure the risk of their borrowers (Article 52) - Banks cannot extend a loan to any one party of more than 25% of its own funds (Article 54) - The total amount of loans to shareholders cannot exceed 50% of a bank's own funds (Article 54) - "Large loans" are those that represent at least 10% of a bank's own funds to one party, and the total of large loans cannot exceed eight times the bank's own funds (Article 54)
Rules on Savings Deposits	<ul style="list-style-type: none"> - Savings deposit accounts from real persons must be kept separate from other accounts (Article 60) - The rights of account holders to withdraw their deposits cannot be restricted (Article 61) - Savings deposits belonging to real persons are insured by the Savings Deposit Insurance Fund (SDIF); coverage amount is set by BRSA and approved by the Central Bank and the Treasury (Article 63) - Banks are required to pay annual premiums to the SDIF in order to insure the portions of savings deposit subject to insurance, and the premium has a maximum value of 0.2% of the deposit amount subject to insurance (Article 63) - Savings deposits belonging to the bank's dominant partners, board members, managers and their families are not covered by insurance (Article 64)
Other controls	<ul style="list-style-type: none"> - A bank's share of total banking sector assets cannot exceed 20% (Article 19) - Any capital increases must be paid in cash without using unauthorized internal resources, and this increase must be approved by the BRSA to be officially registered (Article 17) - Banks cannot own shares of a non-financial company at an amount that exceeds 15% of the bank's own funds (Article 56) - Banks cannot give grants to outside parties totaling more than 0.4% of the bank's own funds (Article 59)

Required reserve ratios for Central Bank of Turkey, December 2012

Liabilities (Last changed October 28,2011)	Demand deposits, notice deposits and private current accounts; Deposits/participation accounts up to 1-month maturity; Deposits/participation accounts up to 3-month maturity	11%
	Deposits/participation accounts up to 6-month maturity	8%
	Deposits/participation accounts up to 1-year maturity	6%
	Deposits/participation accounts with 1-year and longer maturity and cumulative deposits/participation accounts	5%
Foreign Exchange (last changed on December 18, 2012)	FX demand deposits, notice deposits and FX private current accounts, deposits/participation accounts up to 1-month, up to 3-month, up to 6-month and up to 1-year maturities	11.5%
	FX deposits/participation accounts with 1-year and longer maturity and cumulative FX deposits/participation account	9%

Source: Central Bank of Turkey (December 25, 2012)

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Vita

Selina Carter was raised in rural Maine, where she developed a passion for languages and math. While majoring in International Relations and Spanish at Dickinson College in Pennsylvania, Carter studied in Cuba, Spain, and Mexico. After graduating *Summa Cum Laude* in 2006, she spent two years as a Peace Corps Volunteer in Ecuador, where she led after-school programs for children and teenagers in a rural banana plantation village. Carter then served as a Fulbright English Teaching Assistant for ten months at the University of Lisbon in Portugal. Thereafter, she earned a Foreign Language and Area Studies (FLAS) Fellowship from the U.S. Department of Education to study Turkish in conjunction with her three master's degrees in Economics, Public Administration, and International Relations at the Maxwell School, Syracuse University. Carter traveled to Turkey both as a State Department Critical Language Scholar and as a David L. Boren Fellow, funded by the National Security Education Program. During her 12-month stay in Ankara as a Boren Fellow, Carter took Turkish language courses and reached the high-advanced (C1) level, studied economics at the University of Ankara, and conducted research for her thesis. Carter plans on a career in international development.