

Banking Sector Stability, Efficiency, and Outreach in Kenya

Thorsten Beck
Robert Cull
Michael Fuchs
Jared Getenga
Peter Gatere
John Randa
Mircea Trandafir

The World Bank
Development Research Group
Finance and Private Sector Development Team
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Abstract

Although Kenya's financial system is by far the largest and most developed in East Africa and its stability has improved significantly over the past years, many challenges remain. This paper assesses the stability, efficiency, and outreach of Kenya's banking system, using aggregate, bank-level, and survey data. Banks' asset quality and liquidity positions have improved, making the system more resistant to shocks, and interest rate spreads have declined, in part due to reduction in the overhead costs of foreign banks. Outreach remains

limited, but has improved in recent years, driven by mobile payments services in the domestic remittance market. Fostering a level regulatory playing field for all deposit-taking institutions is a key remaining challenge. Specifically, an effective but not overly burdensome framework for regulation and supervision of microfinance institutions and cooperatives is a priority. Maintaining an openness to new, and non-bank, providers of financial services, which has enabled the success of mobile payments, could also further outreach.

This paper—a product of the Finance and Private Sector Development Team, Development Research Group—is part of a larger effort in the department to study the efficiency and outreach of African financial sectors. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at rcull@worldbank.org.

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¹ Beck: CentER, Department of Economics, Tilburg University and CEPR. Cull and Fuchs: World Bank, Gatere, Getenga and Randa: Central Bank of Kenya, Trandafir: Université de Sherbrooke. This paper's findings, interpretations, and conclusions are entirely those of the authors and do not necessarily represent the views of the Central Bank of Kenya, the World Bank, its Executive Directors, or the countries they represent. We thank the editor, Christopher Adam, and Yira Mascaro for helpful comments.

1. Introduction

The current crisis has put the financial sector again at the center of policy makers' attention across the developed and developing world. While in recent years, the financial sector debate across the African continent has been dominated by policies to increase access to financial services, minimizing the impact of the crisis currently tops the agenda. Financial systems across Africa have seen a deepening and broadening over the past years, partly benefiting from the Great Moderation and global liquidity glut, but also from improvements in macroeconomic policies and progress in institutional reforms (Beck, Fuchs and Uy, 2009). This paper discusses the recent development of the financial sector in the major East African economy of Kenya, in the context of recent reforms.

By African standards and in comparison with other East African economies, Kenya's banking sector has for many years been credited for its size and diversification. Private credit to GDP – a standard indicator of financial development, was 23.7% in 2008, compared to a median of 12.3% for Sub-Saharan Africa (Table 1). While this number is not higher than it was in 2005, the quality of lending has significantly improved, as can be seen in the increasing ratio of loans net of provision relative to GDP (Table 2).² Unlike most other countries in the region, Kenya has a variety of financial institutions and markets – banks, insurance companies, stock and bond markets - that provide an array of financial products. Notwithstanding this relative advantage, Kenya's financial system has failed to provide adequate access to banking services to the bulk of the population. While the larger proportion of savings comes from small depositors, lending is skewed in favor of large private and public enterprises in urban areas. Financial services are expensive, as evidenced by high interest rate spreads (see Figure 1 below) and account fees.³

² The figure for Sub-Saharan Africa is taken from Allen, Carletti, Cull, Qian, and Senbet (2009).

³ We note, however, that Kenya's net interest margins are on par with the rest of Sub-Saharan Africa (Table 1). While there are some countries in Latin America that have higher interest margins and spreads than Kenya, a recent comparison shows that Kenya ranked 8th of 37 countries in interest spreads in 2008 and 12th of 66 countries in net interest margins from 2001-2009. Also, Uganda's spreads and margins, which are higher than those in Kenya rank in the top five on both dimensions. In all, the evidence points to Kenya's margins and spreads as being relatively high. See Jorgensen et al. (2010) for the international comparisons of interest spreads and net interest margins.

Table 1. Kenya's Financial System in Regional Comparison

	Private Credit to GDP	Liquid Liabilities to GDP	Net interest margin
Kenya	23.7%	36.0%	6.6%
Tanzania	12.3%	26.3%	6.6%
Uganda	7.2%	20.7%	11.7%
Sub-Saharan Africa (median)	12.3%	23.0%	6.6%

Source: Beck, Demirguc-Kunt and Levine (2009)

Kenya's sector faced major crises in the 1980s and 1990s, due to under-capitalization, high levels of non-performing loans and weaknesses in corporate governance. NBFIs were most affected, but the number of failing commercial banks increased as well in the 1990s. The crisis culminated in 1992, when - according to Honohan and Laeven (2005) - Kenya suffered formally a systemic banking crisis.

Table 2. Growth and Structure of the Banking Sector, 2000 to 2007

	2000	2001	2002	2003	2004	2005	2006	2007
Private Credit/GDP	25.6%	24.1%	23.5%	23.1%	23.2%	23.8%	24.3%	22.4%
Loans (Net of Provisions)/GDP	20.9%	20.2%	20.9%	20.5%	22.8%	23.5%	23.6%	24.8%
Real GDP Growth	0.5%	4.5%	0.5%	2.9%	5.1%	5.7%	6.1%	6.9%
Share of Banking Sector Assets								
Foreign	44.3%	46.3%	48.3%	48.7%	45.3%	43.4%	43.8%	43.5%
Private Domestic	21.9%	22.7%	22.6%	24.1%	25.7%	28.7%	29.9%	31.0%
Government	7.1%	7.1%	6.6%	6.0%	6.2%	5.6%	5.3%	4.8%
NBK	6.1%	5.9%	5.7%	5.2%	5.5%	5.2%	4.8%	4.4%
Government-influenced	26.7%	23.9%	22.5%	21.2%	22.7%	22.2%	21.1%	20.7%
KCB	16.6%	15.0%	12.8%	11.7%	11.9%	11.8%	11.5%	11.9%
Cooperative	5.7%	5.2%	6.5%	6.5%	8.3%	8.2%	7.7%	6.9%
Share of Total Loans (Net of Provisions)								
Foreign	39.9%	40.8%	41.9%	43.7%	42.5%	42.3%	41.0%	44.5%
Private Domestic	22.1%	22.0%	22.6%	24.4%	25.4%	28.8%	31.4%	31.5%
Government	10.0%	9.8%	10.0%	9.7%	8.4%	7.7%	7.3%	2.0%
NBK	9.2%	8.9%	9.0%	8.7%	7.6%	7.3%	6.8%	1.6%
Government-influenced	28.0%	27.4%	25.5%	22.3%	23.6%	21.3%	20.3%	22.0%
KCB	16.5%	15.8%	12.8%	10.7%	11.5%	9.9%	10.5%	11.5%
Cooperative	5.8%	6.3%	8.3%	7.7%	9.2%	8.7%	7.2%	7.7%

Sources: For Private Credit/GDP, Beck, Demirguc-Kunt and Levine (2009). For real GDP Growth and nominal GDP, World Development Indicators. Data for all other calculations are from the Central Bank of Kenya.

In 2003, the Government of Kenya (GoK) published the Economic Recovery Strategy (ERS) paper on Wealth Creation and Employment that defined certain critical high-level objectives that underlied the reform efforts through 2007. In the ERS, the government acknowledged that the banking sector was experiencing difficulties that would undermine the achievement of the objectives set out in the ERS, including a comparatively high ratio of non-performing loans in some major banks, inadequate competition in the banking sector; persistence of wide interest rate spreads leading to a high cost of credit; insufficient quantities of credit (and poor quality credit assessments); absence of vibrant institutions for provision of long term finance; weak legal arrangements creating long delays in contract enforcement; and weak dispute resolution mechanisms.

In recent years, Kenya has made substantial progress in improving the stability and efficiency of its banking system. Upgrading of the supervisory framework was accompanied by write-off of non-performing loans and reductions in government's role in the financial sector. Interest spreads, while still high, have come down recently, due to lower loan loss provisions and overhead costs, but also lower profit margins, suggesting a certain degree of competition. This was accompanied by a reduction in inflation and the fiscal deficit and stable exchange rates, which in turn facilitated not only a drop in interest rates, but also improvements in the government-managed and influenced government institutions. Kenya's financial system, however, continues to face challenges. The banking system is still fragmented, with many small banks serving specific niches, but not contributing to competition in the sector. The outreach of the financial system is still limited.

In 2007, GOK published "Kenya's Vision 2030" as a long term development plan for the country which puts provision of financial services at the centre of the planned economic growth trajectory through the year 2030. The main objectives that were articulated in Vision 2030 for the financial sector were to (i) improve stability, (ii) enhance efficiency in the delivery of credit and other financial services, and (iii) improve access to financial services and products for a much larger number of Kenyan households. Delivery of these objectives requires implementation of policies that would contribute to stable macro and fiscal positions aimed at lower inflation and financial sector stability.

The current global financial crisis has underlined the need for further and deeper reforms, while at the same time potentially undermining progress made so far. The drastic reduction in international capital flows forces most countries in the region to rely more on domestic resources and increase domestic intermediation efficiency. Beyond macroeconomic policies and institutional reforms, issues of market structure will become important in the coming years. Theory and international evidence are ambiguous on the relationship between bank concentration and stability. The experience in Nigeria is too fresh to draw inferences from, but has raised awareness of the issue across the region. As we will discuss below, there is no clear mapping from market structure to competition; attempts to consolidate the sector might increase efficiency and stability, with ambiguous implications for outreach, but the ultimate effect will depend on the future ownership structure of the Kenyan banking system and the underlying financial infrastructure, including the contractual framework and possible credit registry.

The remainder of this chapter is structured as follows. Section 2 discusses Kenya's financial safety net, including recent changes in the regulatory framework and the deposit insurance scheme. Section 3 addresses the stability of banks, in the context of the current market structure. Section 4 presents trends in interest rates spreads and its components over the past seven years. Section 5 discusses the outreach of Kenya's banking system, based on recent household surveys. Section 6 discusses the case for regulation-induced consolidation in the sector, based on the findings of the previous sections and international experience, and section 7 concludes.

2. The Regulatory Framework for Banking in Kenya

Given the critical role of banks for a modern market economy, the opacity of banks' balance sheets, the dispersion of banks' creditors – typically many small depositors – and the maturity transformation banks perform converting short-term deposits into medium- to long-term assets there are limitations to market discipline and additional sources of fragility, compared to non-financial corporations. Banking has therefore historically been one of the most regulated sectors, with regulation ranging from licensing requirements to on-going supervision to a bank-specific failure regime and deposit insurance.

In Kenya, the Central Bank (CBK) is responsible for regulation and supervision of banks. Over the past decades, there have been numerous revisions to the Banking Act, Central Bank of Kenya Act and prudential guidelines aimed at strengthening CBK's supervisory role. The Banking Act has been reviewed over time to give more legal powers to the regulatory authority and to broaden the responsibilities and coverage of institutions. The first comprehensive review was made in 1985 following the rapid growth of NBFIs that was mainly attributed to weaknesses in the regulatory framework. In addition, there was a change in the licensing procedures for banks that introduced a clearer mandate for the Central Bank in the licensing process.

In 1995, further amendments of the Banking Act were made aimed at further strengthening supervision of the banking industry. Prudential guidelines were revised to encourage self-regulation and covered codes of conduct for directors, chief executives and other employees; duties and responsibilities of directors, chief executives and management; duties and responsibilities of external auditors; and the definition of bad and doubtful advances and loans.

In 1998 the Central Bank enhanced capital requirements to avoid a repeat of the banking crises experienced in the mid-1980s and early 1990s. To this end, the gearing ratio was raised to 7.5% from 5%. In 2000, the Central Bank adopted the Basel I standards on capital adequacy. This led to the introduction of additional capital adequacy ratios of 8% and 12 % for core capital and total capital to risk weighted assets respectively. These reforms were in tandem with the then prevailing global trends that required financial institutions to maintain capital commensurate with the credit risk inherent in their business.

In response to gaps identified in the 2003 joint IMF/ World Bank Financial Sector Assessment Program (FSAP), a series of legal and regulatory reforms have been undertaken. These have included significant changes to the Banking Act (Cap 488) and to prudential guidelines to strengthen arrangements in relation to bank licensing, corporate governance, capital adequacy, risk classification of assets and overall risk management.

Deposit insurance is often seen as an integral part of a financial safety net, in spite of significant risks that both case studies and cross-country comparisons have shown (see Demirguc-Kunt and Kane, 2002, for an overview). While the initial purpose is to protect small savings and prevent bank runs, deposit insurance also reduces market discipline even further, as

depositors have fewer incentives to properly monitor and discipline banks. This results in additional pressure on supervisors, which in countries with a weak regulatory and supervisory framework can result in deposit insurance leading to more rather than less fragility (Demirguc-Kunt and Detragiache, 2002). Across countries with deposit insurance, structure, funding and mandates vary a lot. While some countries have pure pay-box deposit insurance funds, such as in Brazil and Uganda, other schemes have wide-ranging supervisory powers, such as in Canada or the U.S. Deposit insurers might be more likely to carefully monitor banks and intervene rapidly into failing banks as they have to carry the costs in terms of higher pay-out to indemnified depositors. Cross-country comparisons show indeed that banks in countries where the deposit insurer has the responsibility of intervening failed banks and the power to revoke membership in the deposit insurance scheme are more stable and less likely to become insolvent (Beck and Laeven, 2008).

Following the banking crisis of 1985/86, Kenya established a Deposit Protection Fund Board (DPFB) with a wide mandate. Specifically, the DPFB's main tasks are to manage the deposit insurance fund and carry out the liquidation of insolvent institutions once they have been closed by CBK (by repaying protected deposits and dividends, carrying out debt recovery, and winding up the institutions under liquidation). DFPB offers protection to small depositors up to Kshs 100,000 (USD 1,250) against loss of their savings in case of a bank failure. Institutionally, DFPB is part of CBK and relies on staff from CBK, but also on information from CBK's supervisory department. It does not have any role in the supervisory process. While having a broad mandate, DFPB's responsibilities are thus not completely aligned with its incentive to minimize insurance fund losses.

In order to improve the role of the DPFB in enhancing depositor confidence, initiatives are underway to enact a new and separate Kenya Deposit Insurance Corporation Act that will give the Fund autonomy in its operations. Among other additional roles, the draft Act provides the DFPB with powers to request the Central Bank to carry out an inspection of a member institution and, where deemed necessary, to conduct the examination itself.

3. Soundness of Kenya's Banking Sector

Since 2000 there has been a significant improvement in financial stability, as indicated by the financial soundness indicators in Table 3. The aggregate indicators, however, mask a significant variation across different ownership groups.

Table 3. Financial Soundness Indicators (%)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Regulatory capital to risk weighted assets	17.5	17.1	17.4	17.2	16.6	16.4	16.5	18.0	18.4
Regulatory Tier 1 capital to risk weighted assets	14.2	14.5	14.1	14.7	16.3	16.0	16.4	16.8	16.2
Non-performing loans to gross loans	37.2	39.4	39.6	34.9	29.3	25.6	21.3	10.9	8.4
Non-performing loans net of provisions to total capital	78.7	78.8	77.8	60.7	52.7	40.1	28.6	15.1	10.8
Return on Assets	0.5	1.6	1	2.3	2.1	2.4	2.8	3.0	2.9
Return on equity	4.9	15.7	10.9	23.2	22.0	25.0	28.6	27.5	28.6
Net interest income to gross income	42.1	43.6	43.8	50.5	50.7	50.2	50.2	50.1	48.3
Non-interest expenses to gross income	65.4	58.6	66.9	62.9	63.9	55.7	52.8	50.8	48.7
Liquid assets to total assets	29.5	34.4	33.7	33.2	32.4	33.1	30.5	35.1	34.6

Source: Central Bank of Kenya

Banks are generally well-capitalized with an overall capital adequacy ratio of 18 percent comparable or considerably above that in other emerging economies and above the 8% recommended by Basel Core Principles (Table 4). Liquidity ratios have been maintained above the minimum statutory requirements while earnings measures have improved steadily. Significant improvement in the stability of the banking sector has been reflected in asset quality. The banking sector experienced high levels of non-performing loans for many years averaging about 30% of gross advances before year 2003. However, the ratio declined significantly to stand at 8.4% as of December 2008. Notwithstanding this improvement, this ratio is still significantly higher than in other emerging markets as of 2007 (Table 4). A big proportion of the NPLs are concentrated in a few government-owned and –influenced banks as well as other adequately capitalized banks. Banks have passed significant provisions onto their books, thanks to strict prudential requirements, and hence the high level of NPLs does not pose a systemic threat to the Kenyan banking system.

Table 4. Comparator Countries: Financial Soundness Indicators, 2007 (%)

Country	CAR	NPLs Ratio ⁴	Return on Assets	Return on Equity
Brazil ⁵	17.4	4.4	2.3	24.5
Indonesia ⁶	19.2	16	2.6	28
Malaysia ⁷	12.7	8.7	1.3	14.1
Nigeria	18.6	7.7	1.8	13.8
South Africa ⁸	12.7	1.1	1.4	18.6
Kenya	18.0	10.9	3.0	27.5

Sources: Central Bank of Kenya, Central Bank of Nigeria (CBN), and IMF, GFSR.

Stress tests confirm the resilience of Kenya's banking system. Table 5 below shows stress tests conducted using individual bank data from December 2008 to assess the impact of credit risk using two shocks. The first evaluates a deteriorating loan portfolio that would result in an increase in provisions by 50% and 100%, while the second assesses the impact of migrating 25% and 50% of performing loans to the substandard category. The results indicate that on the whole, banks appear resilient to the shocks measured. However, the most significant impact would be felt if a riskier client base resulted in a 100% increase in provisions. Such a significant shock would result in 17 banks (accounting for 24 percent of assets) failing to meet minimum capital requirements. Four of these banks would be insolvent. These results could be seen as providing a justification for increasing minimum capital requirements.

⁴ NPLs to gross loans for Nigeria, Kenya and Malaysia. NPLs to total loans for all others.

⁵ CAR, NPL for 2005, ROA and ROE for March 2006.

⁶ CAR Sept. 2006; NPLs include compromised assets ratio, restructured loans, and foreclosed assets for the largest 16 banks. ROE is based on the largest 12 banks.

⁷ ROA is before tax.

⁸ All entries are for March 2007.

Table 5. Sensitivity to Credit Risk

(Regulatory Capital to Risk-weighted Assets, percent)

	Before the shock	Provisions increase by		Migration to NPLs of	
		50%	100%	25% of Performing Loans	50% of Performing Loans
Peer Group – Large	18.3	17.1	15.3	18.0	17.8
Peer Group - Medium	18.7	15.0	11.1	18.1	17.6
Peer Group - Small	35.2	32.5	29.6	34.7	34.2
# Banks with CAR <12%	0	11	17	2	3
Share of Assets	0	20	24.0	5.1	12.3
# Banks with CAR <0%	0	1	4	0	0
Share of Assets	0	0.99	2.2	0	0

Source: Central Bank of Kenya data

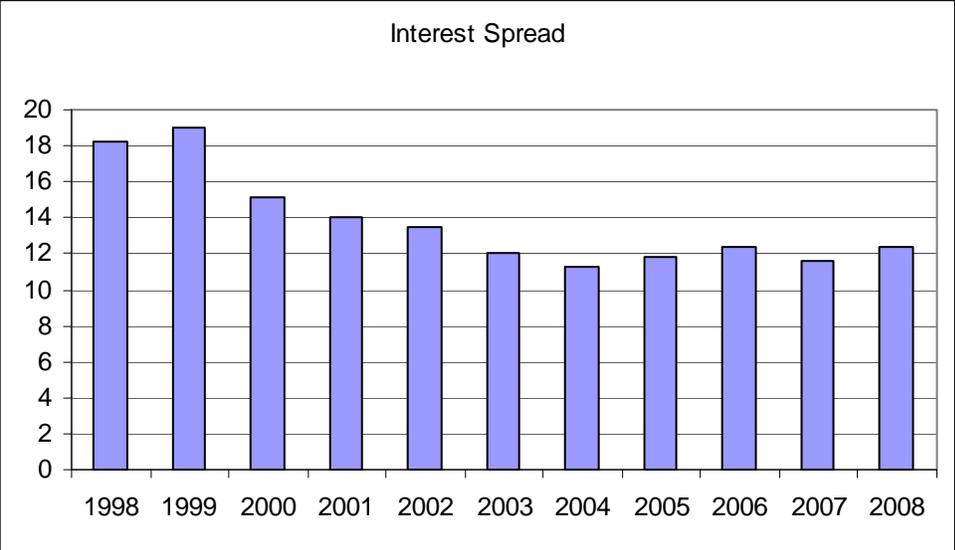
4. Banking Sector Efficiency

In this section we describe how interest spreads, our proxy for the efficiency of financial intermediation, have evolved over the past ten years in Kenya, and relate those developments to our discussion of the government strategy for the development of the financial sector and the accompanying changes in the legal and regulatory framework discussed above. We then present simple arithmetic decompositions of the interest spreads to explain the factors that have contributed to their relatively high levels and also to their decline over time. We also examine how spread levels and their determinants differ by bank size and ownership type. Finally, we offer regressions that better enable us to test whether the determinants of spreads differ by bank ownership type and if such differences can be explained by the types of activities that different owners pursue.

Headline indicators produced by the Central Bank of Kenya indicate that spreads declined from 1999 to 2003 and have since remained stable (Figure 1). The relatively sharp decline in spreads in 2003 owes much to improvements in Kenya's fiscal situation and general macro-management, which led to substantial declines in both the volume of government securities issued and the interest rates paid. As government securities became a less attractive investment option for banks, they turned to new lending opportunities, and the competition

between banks for those opportunities coincided with lower spreads. However, the shift out of government securities was much swifter for some banks than others, and most banks increased their holdings of those securities from 2004 to 2005. In addition, yearly average spreads in Figure 1 mask wide variation across banks and our statistical analysis below indicates that the drivers of changes in spreads differ across bank ownership types. For these reasons, the reduction in government debt issuance does not provide a complete explanation of the evolution of spreads over this period.

Figure 1



Source: Data are from Central Bank of Kenya Statistical Bulletin, June 2008. The lending rate is the weighted average of commercial banks’ interest rates on loans and advances. Similarly, the deposit rate is weighted average rate paid by commercial banks on savings deposits. For 2006 and 2007, we use the December figures. For 2008, we use the June figures (latest available).

Further indication that the decline in spreads is not wholly attributable to macroeconomic stability and improved management of government debt comes from simple arithmetic decompositions of interest spreads. In the decomposition exercise we follow the method used in Beck and Fuchs (2004), subtracting the interest rate paid for deposits from the interest rates charged on loans. To calculate the weighted average interest rate charged on loans, we add the

interest income earned to interest in suspense, and divide that sum by total loans.⁹ Because this measure captures interest income and interest that was accrued but not collected, it is our best proxy for the ex-ante interest rates charged on loans by banks. The interest spread is then calculated as the difference between that figure and the interest expense paid on deposits (divided by total deposits). The spreads in our analysis are therefore a weighted average for the banking sector as a whole (rather than a simple average across banks).

We decompose the spreads into its different components. Banks charge higher interest rates to riskier borrowers in anticipation of defaults, and so we therefore account for loan loss provisions in the decomposition. We also account for overhead costs, taxes, and required reserves, all factors that contribute to higher spreads. The overhead costs are those attributable to loans, which we identify by calculating the share of loan interest revenue in total revenue. Profit margin is a residual after adjusting for loan loss provisions, the tax rate, reserve requirements, and overheads.¹⁰

Using the ex-post constructed spreads across banks shows a different development over time than the headline indicators. Table 6, Panel A shows that spreads declined for the sector as a whole, but not until much later in the period than was indicated in Figure 1, which is based on the ex-ante interest rates charged by banks rather than the ex-post interest earned and accrued that we rely on in this analysis. The reason for this discrepancy is that until 2006 the interest in suspense for the government-owned banks (Cooperative, Consolidated, KCB, and NBK) was much higher than for privately-owned banks because of their huge overhang of non-performing loans. Our method for calculating interest spreads can yield misleading results for banks with large stocks of non-performing loans. When we drop those government-owned banks from the sample in Table 6, Panel B, the evolution of spreads looks very similar to that in Figure 1, except that declines occurred about a year later. This is because the ex-post spreads reflect the ex-ante

⁹ Interest accrued but not collected from the date an account is classified as non-performing is included as interest in suspense.

¹⁰ The formula we use is:

Profit margin = (1-tax rate) x (weighted average lending rate – weighted average deposit rate/(1 – Reserve Requirement) – operating costs/loans – loan loss provisions/loans)

The tax rate is calculated from actual tax payments. The reserve requirement is 10%. Operating costs are those attributable to lending, and thus are equal to the share of income from lending multiplied by total costs.

rates charged on loans at a lag. In all, however, our ex-post calculated spreads for private banks match up well with the headline indicators produced by Central Bank of Kenya, which are based on ex-ante interest rates charged by banks.

Table 6. Decomposition of Interest Spreads Over Time

Panel A. All Banks	2000	2001	2002	2003	2004	2005	2006	2007
Average Lending Rate	25.03	24.47	25.89	24.64	21.45	22.75	12.22	12.19
Average Deposit Rate	5.79	4.62	3.53	2.00	1.36	2.60	2.57	2.41
Spread	19.25	19.85	22.36	22.64	20.10	20.16	9.66	9.78
Overhead Costs	6.94	6.49	7.53	6.60	5.83	5.99	3.10	3.16
Loan-loss Provisions	4.28	2.66	3.43	2.68	2.02	1.68	1.64	0.85
Reserve Requirement	0.64	0.51	0.39	0.22	0.15	0.29	0.29	0.27
Taxes	2.21	3.05	3.30	3.94	3.63	3.66	1.39	1.65
Profit Margin	5.16	7.12	7.71	9.20	8.47	8.54	3.24	3.85
Panel B. Private Banks	2000	2001	2002	2003	2004	2005	2006	2007
Average Lending Rate	20.72	19.63	17.65	15.77	12.92	13.78	13.77	12.98
Average Deposit Rate	5.29	4.60	3.36	2.14	1.47	2.78	2.88	2.79
Spread	15.44	15.03	14.29	13.64	11.46	11.00	10.89	10.19
Overhead Costs	4.86	4.66	4.85	3.75	3.05	3.24	3.15	3.00
Loan-loss Provisions	3.01	1.89	1.76	2.77	1.93	1.32	1.08	0.68
Reserve Requirement	0.59	0.51	0.37	0.24	0.16	0.31	0.32	0.31
Taxes	2.09	2.39	2.19	2.06	1.90	1.84	1.90	1.86
Profit Margin	4.89	5.58	5.12	4.82	4.42	4.29	4.44	4.34

Source: Own calculations, based on CBK data

The effects of the government's program for the development of the banking sector are reflected in both the decline in spreads and their determinants. The decomposition for privately-owned banks (both domestic and foreign) in Panel B shows a steady decline in the interest rates charged on loans and a substantial reduction in the interest rate paid for deposits. The decline in lending rates is consistent with greater competition, while the drop in deposit rates likely reflects

both the improvements in bank soundness indicators summarized in section 4 and the increasing confidence of depositors.

The decomposition in panel B points to a number of specific factors that contributed to the reduction in the spreads of the private banks. First, productive efficiency appears to have improved as reflected in the steady decline in overhead costs (relative to total loans). Second, the quality of loan portfolios improved as reflected in lower provisions for bad debts. Reserve requirements and taxes have seen more moderate declines, though neither was among the more important components of spreads as reflected in the decomposition. Despite the substantial declines in overhead costs and loan-loss provisioning, which should improve profitability, banks' profit margins declined in the middle of the period, and have remained more or less steady since. This too points to an increasingly competitive private banking sector.

Stratifying the sample of private banks based on size (total deposits) reveals that larger banks generally tend to have lower interest spreads, which in part reflects the gradual decline in overhead costs as bank size increases (Table 7). At the same time, the decompositions reveal that banks in the largest size quartile are distinct from those in the other three in important respects. For example, provisioning charges are very similar for banks in the lowest three quartiles, but less than half of that level for banks in the top quartile. Also, the banks in the top quartile charge substantially lower rates on their loans and pay much lower rates on deposits. While their spreads are lower than other banks, so too are their profit margins indicating that they operate in a relatively competitive market niche. Banks in the third largest size quartile have spreads and margins that are closest to those of the largest banks, while those in quartile 2 and, especially, the bottom quartile charge the highest rates on loans and interest spreads, but also have higher profit margins. Based on the available data, it is difficult to know whether those high margins are due to a less competitive market niche or our less-than-perfect method for calculating spreads. Again, for banks with a large stock of nonperforming loans, this method could yield misleading results.

Table 7. Spread Decomposition by Size Quartile, Ranking Based on 2007 Deposits

	Smallest		Largest	
	0-25 th Percentile	26-50 th Percentile	51-75 th Percentile	76-100 th Percentile
Average Lending Rate	28.97	14.21	18.91	10.46
Average Deposit Rate	4.23	3.79	4.63	2.16
Spread	24.74	10.42	14.28	8.30
Overhead Costs	7.65	4.15	3.96	2.38
Loan-loss Provisions	1.33	1.26	1.19	0.45
Reserve Requirement	0.47	0.42	0.51	0.24
Taxes	4.59	1.38	2.58	1.57
Profit Margin	10.70	3.22	6.03	3.66

Source: Own calculations, based on CBK data. Note: Cooperative, Consolidated, and KCB, and NBK are excluded from these calculations.

The pattern in Table 7 suggests that the largest private banks are more efficient, as reflected in their overhead costs, and more stable, as reflected in their loan-loss provisions. For these reasons, proposals to increase minimum capital requirements and thereby consolidate the sector by creating larger banks are being explored. Section 6 discusses this issue in greater detail.

While the size of private banks appears to have an effect on the efficiency of financial intermediation, bank ownership plays at least as important a role in explaining the relative efficiency of Kenyan banks. Table 8 shows why, namely because the figures for government owned and government influenced banks are not reliable. Recall that our method for calculating spreads is less reliable for banks that have a large stock of non-performing loans. This is likely because interest is accrued on the same non-performing loan multiple times. In short, our method makes sense for banks that are pricing loans to cover the expected future costs of defaults.

And so the enormous lending rates and spreads calculated for government banks is the first tip-off that they are not adhering even remotely to commercial banking principles, though we concede that the difficulties appear to be more severe for government-owned than government-influenced banks. At the same time, our spreads were increasing for all government banks from 2000 to 2005. During this same period, spreads were declining substantially for the

private domestic and foreign banks. So the general decline in spreads in Figure 1 cannot be attributable to the government banks.

Table 8. Spread Decomposition by Ownership Type

	Foreign			Private Domestic			Government owned			Government Influenced		
	2000	2005	2007	2000	2005	2007	2000	2005	2007	2000	2005	2007
Average Lending Rate	16.61	11.21	10.46	21.30	14.90	16.75	46.34	65.59	27.91	25.86	23.57	27.01
Average Deposit Rate	3.76	1.83	2.09	7.42	4.15	3.81	6.13	2.59	2.08	7.89	2.07	1.20
Spread	12.85	9.38	8.36	13.88	10.75	12.94	40.21	63.00	25.83	17.97	21.50	25.81
Overhead Costs	4.11	2.50	2.40	4.37	3.68	3.80	20.92	18.32	9.37	8.71	8.31	9.25
Loan-loss Provisions	2.90	1.37	0.55	3.60	1.22	0.85	3.94	2.66	2.21	6.54	2.04	1.21
Reserve Requirement	0.42	0.20	0.23	0.82	0.46	0.42	0.68	0.29	0.23	0.88	0.23	0.13
Taxes	1.62	1.59	1.55	1.53	1.62	2.36	4.40	12.52	4.21	0.55	3.28	4.56
Profit Margin	3.79	3.71	3.62	3.57	3.77	5.50	10.27	29.21	9.81	1.29	7.65	10.65

Source: Own calculations, based on CBK data

In 2007, the spreads of the government-owned banks declined steeply, yet this is certainly due to the large injection of capital into NBK, which was used to clean up its large overhang of non-performing loans. NBK is by far the largest majority government-owned bank, and thus the injection has a sizable effect on the spreads for that ownership category. Even with the injection, the spreads for government-owned banks remain substantially above those for private banks, while those for the government-influenced banks are roughly similar. And the spreads for the government-influenced banks were actually increasing from 2005 to 2007.

It is also worth noting that both types of government banks pay less for their deposits than do private banks. This suggests that depositors are certain that they will be bailed out regardless of problems with the loan portfolios of these banks. Since these banks still comprise a large share of the banking sector (Table 2), this situation implies substantial misallocation of investable resources (savings). In addition, the existence of large government banks no doubt has a distortionary impact on the activities of private banks which could be effectively precluded

from pursuing efficiency enhancement in some geographic areas or offering a wider array of services. For all of these reasons, ownership restructuring including privatization would appear to be a major remaining priority for the reform agenda of the Kenyan banking sector.

The general picture from Table 8 is that foreign banks have shown steady improvement in efficiency (lower spreads and overhead costs), while private domestic banks have seen a slight reversal in recent years. Table 8 also spotlights the persistence of the relative inefficiency of the government-owned and government-influenced banks. As noted above, from 2000 to 2005 spreads declined for private banks, but after that the paths of the foreign and private domestic banks diverged, with foreign banks continuing the decline through 2007 and private domestic banks showing an increase. This is partly due to the lending rate that we calculate for private banks, which increased substantially from 2005 to 2007 due to jumps in interest in suspense for some banks. Because the private domestic banks tend to be smaller than the foreign banks, one could view this as additional support for fostering consolidation among some of those banks.

The increase in spreads for private domestic banks from 2005 to 2007 is accounted for by interest in suspense and the slight increase in overhead costs during that period. The government-owned banks also saw steep declines in overhead costs from 2005 to 2007, consistent with some improvement in their efficiency, though their levels remained well above those for the foreign and private domestic banks. For the government-influenced banks, overhead costs remained stable and high relative to the private banks. Charges for loan loss provisions declined for all banks, though the declines for the foreign and government-influenced banks were steeper than for the government-owned and private domestic banks (Table 8).

Lurking in the background of this simple analysis of spreads are issues of market segmentation. Clearly, higher spreads, margins, and interest rates charged on loans for the private domestic banks could be consistent with the notion that those banks serve a market niche of relatively riskier borrowers. The stratification by bank size also indicates that smaller banks, many of which have private domestic ownership, occupy a market niche where interest rates and spreads tend to be higher. By contrast, the profit margins and spreads of the largest banks, many of which are foreign-owned are substantially lower, indicating that they operate in a more competitive niche. This type of segmentation has implications for the discussion of sector

consolidation below. To the extent that the smaller private banks and larger foreign banks operate in different market niches, the consolidation of the private domestic banks could lead to over-saturation of the market for top-end borrowers and reductions in services for the less-than-blue-chip customers of the private domestic banks.

Spread Regressions

Regressions enable us to assess the relationship between spreads and a number of additional bank characteristics that could affect interest spreads and to better pinpoint the banks and their activities that were responsible for the decline in spreads. The regression model is based on that in Martinez Peria and Mody (2004) for developing countries in Latin America and in Beck and Hesse (2009) for Uganda:¹¹

$$\begin{aligned} Spread_{it} = & \alpha + \beta_1 overheads_{it} + \beta_2 liquidity_{it} + \beta_3 equity_{it} + \beta_4 provisions_{it} + \beta_5 market\ share_{it} \\ & \beta_6 interest\ income_{it} + \beta_7 loan\ share_{it} + \beta_8 Herfindahl_t + \beta_9 T\ bill\ rate_t + \beta_{10} inflation_t \\ & + \beta_{11} RealGrowth_t + \beta_{12} PrivateDomestic_{it} + \beta_{13} Government_t + \varepsilon_{it} \end{aligned} \quad (1)$$

where the interest spread is calculated as described above for bank i at time t . *Overheads* are the ratio of overhead costs to total assets. As in the simple decomposition, we expect that higher overheads costs are passed on to borrowers in the form of higher spreads. *Liquidity* is the ratio of liquid assets (cash and deposits with other banks) to deposits, while *equity* is bank capital plus reserves over total assets, both of which we can expect to be positively associated with spreads, given the opportunity costs.¹² *Provisions* are the ratio of loan loss provisions to total loans, our measure of portfolio quality. As described above, we expect that higher loan provisions reflect riskier borrowers, which raises ex-ante interest rates charged on loans resulting in higher calculate spreads. *Market share* is the bank's share of total banking sector deposits, our measure

¹¹ That model is motivated by the dealership model of banks spreads developed in Ho and Saunders (1981), in which banks are risk-averse dealers trying to balance loan and deposit markets. Because loan requests and deposit flows can be asynchronous, spreads are seen as fees charged by banks for the provision of liquidity under uncertainty. See Martinez Peria and Mody (2004) for further description of the model and extensions by other authors.

¹² In the Latin American context, high liquidity was thought to inflict a cost on banks, since a bank must forego the opportunity to hold a higher-yielding instrument. Thus, Martinez Peria and Mody (2004) hypothesize that banks will try to transfer this cost to borrowers, resulting in a positive association between liquidity and spreads. Similarly, those authors hypothesize that there is an opportunity cost associated with holding excessive capital, and thus they expect a positive relation between capital and spreads.

of bank size. To the extent that larger banks can take advantage of economies of scale, we would expect market share to be negatively related to spreads.¹³

We control for bank orientation using *interest income*, the ratio of total interest income to operating income, and *intermediation*, the ratio of net loans and advances to total liabilities. Using bank-level data across countries, Laeven and Levine (2007) demonstrate that specialized loan-making banks have different performance characteristics than specialized investment banks, and that loan-making banks tend to have a higher share of interest income. We expect competitive pressure in the lending market to be better reflected in the banks specialized in that area, and thus we expect a negative association between *interest income* and spreads. Similarly, we expect those banks that lend a relatively high share of their available liabilities to be most responsive to the same competitive pressures, and thus a negative relation between *intermediation* and spreads.

Following the literature, in some specifications we include a control for banking sector structure and three macroeconomic control variables. *Herfindahl* is a standard index of sector concentration, which we calculated based on bank shares of total deposits.¹⁴ If deposits are concentrated in the hands of a few banks, those banks might be able to drive up lending rates, as they control the supply of funds. We would therefore expect a positive relation between concentration and spreads. The macroeconomic controls are the *T-bill rate*, *inflation*, and *real growth*. The *T-bill rate* is the rate of interest on short-term treasury bills, which is included as a proxy for the marginal cost of funds faced by banks. *Inflation* is included because price shocks might not be passed through equally to the nominal lending and borrowing rates, and thus these differential effects would be reflected in the spread. *Real growth* is included to capture business cycle effects that are reflected in spreads. As an economy slumps and growth slows, borrowers become less creditworthy, and thus banks must charge higher lending rates, which are then reflected in higher spreads (all else equal).

¹³ This is consistent with some of the regression results in Beck and Hesse (2009) for Uganda from 2000 to 2004. Martinez Peria and Mody (2004) note, however, that market share could also be equated with market power, and thus the ability to charge higher rates on the loans. The coefficient on this variable will therefore indicate which of these two hypotheses is better supported by the data.

¹⁴ The index is calculated by summing the squared market shares of all banks.

Finally, we control for ownership type. *Private domestic* is a dummy variable equal to one if a bank is owned by private Kenyan interests, while *Government* is a dummy equal to one if a bank is owned by the Kenyan government. In some models, we further differentiate between banks that are majority-owned by the government and those in which the government owns only a minority stake (which we call ‘government-influenced’ banks). The coefficients on these ownership variables are therefore intended to capture any differences in spreads relative to banks owned by foreign interests (our omitted ownership category) that are not accounted for by the other explanatory variables.

The base results in Table 9 suggest that overhead costs are the driving factor of interest rate spreads. Both models are estimated via OLS, and model 2 includes bank-specific fixed effects.¹⁵ In model 2, the estimated coefficients therefore reflect departures from each bank’s average spread for the period. The main results from the base models is that spreads are highly sensitive to overhead costs: the estimated coefficient indicates that a one percentage point increase in the ratio of overheads to total assets is associated with a 1.8 percentage point increase in interest spreads. The fixed effects models also indicate that increases in equity and provisions for loan losses were associated with higher spreads during this period, while an increase in the intermediation ratio was associated with lower spreads. All of these results are in line with our hypotheses.

¹⁵ In model 1, standard errors are clustered at the bank level.

Table 9. Base Interest Spreads Regressions

Explanatory Variable	OLS (1)	Fixed effects (2)
Overheads	1.7680*** (0.6352)	1.7510*** (0.3350)
Equity	-0.0061 (0.0198)	0.2065** (0.0876)
Liquidity	0.0301 (0.0416)	-0.0080 (0.0367)
Loan-loss provisions	-0.0910 (0.2540)	0.3761** (0.1740)
Market share	-0.1577 (0.1439)	0.4170 (0.5112)
Interest income	-0.1314 (0.1255)	-0.0121 (0.0867)
Intermediation	-0.0499 (0.0475)	-0.1363** (0.0598)
Herfindahl index	-0.0425 (1.0109)	0.0657 (1.1181)
Real T-bills rate	0.1362 (0.1529)	0.0611 (0.1206)
Inflation	0.1676 (0.2909)	-0.0294 (0.2532)
Real Growth	-0.0058 (0.2583)	0.1482 (0.3309)
Private Domestic	0.0211* (0.0120)	
Government owned	0.0126 (0.1057)	
Government-influenced	0.0525 (0.0362)	
Constant	0.2064 (0.1348)	0.1274 (0.1541)
Observations	327	327
Number of banks	45	45
Adjusted R2	0.5634	0.7295

Source: Own calculations, based on CBK data

The Table 10 results show that the significant results from our base models are not a reflection of the banking sector as a whole, but are rather driven by specific subsets of banks. To see this, we re-run the base models in Table 9 with interaction terms for each of the three ownership categories that appeared in the original regression (private domestic, government-owned, and government-influenced). In this way the association between each explanatory variable and the interest spread is allowed to differ by ownership type. The coefficients on the non-interacted variables therefore summarize the effects for foreign banks, our omitted ownership category. Rather than present the full specification, we present the effect of each

variable on the spreads of each bank ownership type. What appears in Table 10 is the coefficient for each variable for each ownership category and a test of whether the coefficient is different from zero. P-values appear in parentheses below the coefficients.

The results in Table 10 enable us to further pinpoint the type of banks that are responsible for the significant relationships in our base regressions. In Panel A, which summarizes the results from the OLS model, the positive relationship between overhead costs and interest spreads is much stronger for foreign banks. The relationship for all bank types is significant, but the coefficients are smaller, especially for the government-owned and private domestic banks. Similarly, only the interest spreads of the foreign banks are significantly associated with the intermediation ratio, the real T-bills rate, and inflation, and this holds for both the OLS and fixed effects regressions.

The determinants of the interest spreads of the foreign banks are much closer to what would be expected based on the existing empirical literature from other countries than are those of the other bank types. For example, aside from the overhead costs variable, none of the other variables is strongly associated with the interest spreads of the private domestic banks. There is some weak evidence from the fixed effects models that higher equity ratios and loans loss provisions were associated with higher spreads for private domestic banks, but those variables are only significant at the ten percent level. Similarly, in the fixed effects models, which are our best tool for assessing the changes in spreads, none of the variables is significant for the government-owned and government-influenced banks except for the aforementioned overhead costs and the equity variable. The significant equity coefficients reflect most likely spurious correlation rather than a causal link, a reflection of the government's re-capitalization strategy for these banks. For example, the positive coefficient on *Equity* for government-owned banks in the fixed effects regressions is because of the large capital infusion into NBK, a bank which happens to have high interest spreads. The infusion of equity did not cause NBK's spreads to increase. Lackluster performance and a high share of non-performing assets were already reflected in high spreads. The capital infusion occurred as a result of those factors.

Table 10. Determinants of Interest Spreads, By Bank Ownership Type

Panel A. OLS	Foreign	Private Domestic	Government Owned	Government-Influenced
Overheads	3.6074*** (0.7355)	1.7806* [0.0924]	1.0115** [0.0420]	2.8742*** [0.0000]
Equity	-0.1384 (0.0952)	-0.0237 [0.3454]	0.7840*** [0.0000]	-1.6306*** [0.0083]
Liquidity	0.0434* (0.0239)	0.0343 [0.5188]	-0.0322 [0.6371]	0.1203 [0.4475]
Loan-loss provisions	-0.3046 (0.2189)	-0.1359 [0.5621]	-0.0541 [0.9405]	0.4891 [0.1792]
Market share	0.0818 (0.0706)	-0.8175 [0.2280]	2.4479*** [0.0000]	-0.9582** [0.0328]
Interest income	0.0728* (0.0379)	-0.2983 [0.2033]	-0.4491*** [0.0001]	-0.0508 [0.7614]
Intermediation	-0.1043** (0.0447)	-0.0193 [0.7574]	0.0284 [0.7369]	-0.0967 [0.5984]
Herfindahl index	0.4067 (0.9961)	0.8696 [0.3934]	-1.8256 [0.7554]	0.1929 [0.9615]
Real T-bills rate	0.1527** (0.0588)	0.1368 [0.3853]	-0.2494 [0.8504]	0.0280 [0.9000]
Inflation	0.2958** (0.1438)	0.2637 [0.2640]	-1.9958 [0.4841]	0.3035 [0.6907]
Real Growth	-0.1566 (0.2041)	0.4587 [0.3661]	0.2042 [0.8282]	0.1894 [0.7451]

Panel B. Fixed Effects	Foreign	Private Domestic	Government Owned	Government-Influenced
Overheads	3.3104*** (0.7093)	2.0472*** [0.0017]	1.1984*** [0.0016]	2.6637*** [0.0000]
Equity	0.0317 (0.1131)	0.2325* [0.0535]	0.9098** [0.0115]	-2.2986** [0.0229]
Liquidity	0.0048 (0.0239)	-0.0233 [0.7940]	-0.0171 [0.8802]	0.5983* [0.0869]
Loan-loss provisions	-0.2050 (0.2746)	0.4047* [0.0794]	0.1487 [0.9216]	0.7378 [0.2785]
Market share	0.1116 (0.3982)	1.6164 [0.1383]	-6.4134 [0.2800]	0.2384 [0.7720]
Interest income	-0.0099 (0.0692)	0.0575 [0.7782]	-0.3730 [0.3980]	-0.1859 [0.4070]
Intermediation	-0.1191** (0.0496)	-0.1326 [0.1410]	0.0568 [0.7807]	0.4690 [0.2786]
Herfindahl index	0.1924 (0.8472)	0.9183 [0.5494]	2.1135 [0.8070]	0.6619 [0.8218]
Real T-bills rate	0.2200** (0.1060)	0.0907 [0.5866]	0.3199 [0.7339]	-0.1687 [0.6623]
Inflation	0.3849* (0.1988)	0.0639 [0.8500]	-0.7747 [0.6889]	-0.1773 [0.8185]
Real Growth	-0.2113 (0.2435)	0.4306 [0.3537]	0.8667 [0.6850]	-0.1336 [0.9085]

Source: Own calculations, based on CBK data

The general conclusion from the interest spread regressions is that reductions in overheads led to lower spreads for all banks during this period, but the results were especially pronounced for the foreign-owned banks. Other factors such as the reduction in the T-bill rate and lower inflation also contributed to lower spreads during this period, but those reductions were only significant for the foreign banks. The regressions therefore indicate that the lion's share of the sectoral reduction in interest spreads that we began this analysis with (Figure 1) is attributable to the foreign banks. Moreover, the lack of significant results for the other ownership types suggests either that they are competing in a separate market niche (as seems likely for many of the private domestic banks) or that they are pursuing some of the same clients as foreign banks but pricing loans in a less rationale way (as seems likely for the government-influenced banks).

5. Access to Financial Services

FinAccess 2006 and FinAccess 2009, two household surveys, conducted by the Financial Sector Development Trust Kenya jointly with the Central Bank of Kenya, confirm three previously-assumed conclusions about access to financial services: (a) a large proportion of the Kenyan population has no access to financial services, whether formal or informal; (b) there is a general tendency for access to services from formal and semi-formal providers (banks, SACCOs, and MFIs) to decline as one goes from urban to rural, from high-income to low-income, and from better-educated to not educated; and, (c) although the percentage of the population that is served is similar in urban and rural districts, the mix of those services is different.¹⁶ In urban areas, respondents rely more heavily on services from banks and semi-formal sources (SACCOs and MFIs) while in rural districts, there is greater reliance on services provided via informal groups.

Table 11 shows that the use of formal financial services in Kenya is at similar levels as in other East African countries, but below that in several countries in Southern Africa. As the surveys are not completely consistent across countries, we follow Porteous (2007) in his definition of formal bank and bank-like financial services, which varies from the definition to be

¹⁶ The discussion of the findings of FinAccess 2006 and 2009 is based on Beck (2009).

used in the remainder of this section.¹⁷ Here we show the share of population that (i) uses formal bank services, (ii) uses other formal financial but not bank services, (iii) uses only informal financial services, and (iv) does not use any financial services. Kenya has a higher share of population using formal financial services (21.5%) than Tanzania and Uganda, but also Zambia, where this proportion is below 20%, but a lower share than in Botswana, Namibia and South Africa, where this share is above 40%. The share of population that uses non-bank formal but not bank services is relatively high (with 15%) – mostly driven by M-Pesa -- and higher than in the other African countries for which we have such data. The share of population that is completely excluded from any formal or informal financial service is lower in Kenya (34%) than any other country except for South Africa, suggestive of the strong role that informal and other formal arrangements play in Kenya.

Table 11. Use of Financial Services across Africa

	Formal	Formal, other	Informal	Excluded
Kenya	21.5	15	29.5	34
Tanzania	15	2	7	75
Uganda	18	0	29	52
Zambia	14	12	11	62
Botswana	44	5	5	48
South Africa	54	6	9	31
Namibia	53	3	1	42

Source: Porteous (2007) and Beck (2009)

Table 12. Use of Financial Services in Kenya, over Time and across Different Groups

	2006	2009		2009						
	overall	Overall	female	male	Urban	rural	none	primary	secondary	tertiary
Bank	18.5	22.6	17.8	27.8	40.9	17.6	4.9	13.4	34.7	70.2
Formal- other	8.1	17.9	15.9	20.2	21.5	17	7.2	16.6	25	19.5
Informal	35	26.8	33.3	19.5	16.4	29.6	32	35.8	15.2	2.2
Excluded	38.3	32.7	33	32.4	21.1	35.8	55.9	34.2	25.1	8

Source: Beck (2009). Definitions: see text.

¹⁷ Porteous (2007) classifies banks and Postbank as formal and insurance companies and formal money transfer operators, such as M-Pesa, as non-bank formal. SACCOs and MFIs, on the other hand, are classified as informal financial institutions. In the FinAccess definitions for Kenya, as reported in Table 12, on the other hand, SACCOs and MFIs are classified as other formal providers.

Table 12 shows that the access frontier has been pushed out between 2006 and 2009, especially due to an increase in the users of other formal financial services. While in 2006, 18.5% of the population used formal financial services – banks, the PostBank and insurance companies – 22.6% do so in 2009. The share of the population that uses only other formal financial services – MFIs, SACCOs, M-PESA and other formal money transfer operators– increased from 8.1% in 2006 to 17.9% in 2009. On the other hand, the proportion of the population with access to only informal financial services, decreased from 35% to 26.8% and the share of the population excluded from any financial service decreased from 38.3% to 32.7%.

Table 12 also confirms significant differences in the use of financial services across different subgroups. Men are more likely to use formal banking services, while women are more likely to be restricted to informal financial services. Financial exclusion, on the other hand, is at similar levels for men and women. Urban Kenyans are more than twice as likely to use formal financial services as rural Kenyans, while the share of Kenyans restricted to informal financial services or completely excluded is almost twice as high in rural as in urban areas. Finally, we note a strong positive correlation of the use of formal financial services with the level of education. The gap between groups at different levels of educational attainment is starkest for Kenyans with tertiary education compared to all other groups. Only 10% of this segment is either limited to informal finance or excluded from any financial service.

Savings and transaction services are the most prevalent financial services, while there is very limited use of credit and insurance services. Table 13 reports the use of different financial services provided by banks and other formal financial institutions (SACCOs, MFIs and money transfer operators, including M-Pesa) in 2006 and 2009, as well as for different subgroups of the population in 2009. We see that less than 10% of the population uses credit or insurance service, while one in four Kenyans uses savings services. The share of Kenyans using transaction services has increased dramatically over the past three years, mostly due to M-Pesa, a cell-phone based transaction service offered by Safaricom, a telecom and thus non-financial corporation. Comparing male and female Kenyans, we see that men are more likely to use all financial services than women. The differences are even starker between rural and urban Kenya, with the use of transaction, savings and credit services almost twice as high in urban as in rural areas and the use of insurance services almost three times as high.

Table 13. Use of Different Financial Services in Kenya

	2006	2009	2009			
	overall	Overall	female	Male	Urban	rural
Transaction	15	45.2	40.7	50.2	71.6	38.1
Savings	25.6	27	21.2	33.4	40.7	23.2
Insurance	5.9	6.8	6	8.2	14.1	4.8
Credit	6.7	7.3	4.7	9.1	10.3	6.2

Source: Beck (2009). For detailed definitions, see Source.

The entry of M-Pesa into the remittance market has been powerful and has been behind the increase in the use of transaction services. 39.9% of those surveyed claim to have used M-Pesa, more than the users of any other financial institution or product in Kenya. The popularity of M-Pesa is also reflected in Kenyans' perceptions. While in 2006, a relative (weighted) majority of those surveyed named 'specialist money transfer operator' as the least risky and fastest channel to send remittances and friends and family as the least expensive and easiest to obtain, in 2009 it was M-Pesa that was rated the least risky, the fastest and the easiest to obtain, while it came in as second under the category least expensive (friends and family continue to be rated as the least expensive channel).

While many individual characteristics are associated with the use of financial services, many of these characteristics are also correlated with each other. For example, inhabitants of rural areas are typically poorer and less likely to work in formal jobs – which of these characteristics is the decisive one explaining whether an individual has access to financial services or not? In order to determine the decisive factors, we utilize multivariate regression analysis. Specifically, we regress dummy variables that indicate whether an individual has (i) access to banking services, (ii) other formal financial services, (iii) informal financial services, or (iv) is excluded.¹⁸

The regression results in Table 14 suggest that controlling for other characteristics, women are not less likely to use formal banking or other formal financial services, but they are more likely to use informal services than men and are less likely to be excluded. Rural

¹⁸ Unlike in Tables 10 through 13, individuals can therefore belong to several categories.

Kenyans, on the other hand, are less likely to use formal banking and other formal financial services, but not informal services. Income is one of the strongest predictors of usage of both formal and informal financial services. To illustrate the economic size of this effect, consider Kenyans with monthly income of less than 10,000 Kshs, Kenyans with monthly income between 10,000 and 50,000 Kshs, Kenyans with income between 50,000 and 100,000 Kshs and Kenyans with monthly income above 100,000 Kshs. The predicted probability of being formally banked – controlling for the other individual characteristics – increases from 11.9% to 40.8% to 73.7% to 82.7%, as we move across the income brackets.

We also find that education is a strong predictor of the use of formal banking and other formal financial services. Kenyans with tertiary education are more likely to use formal banking and other formal financial services (any of the four service types) than Kenyans with secondary education who in turn are more likely to use these services than Kenyans with only a primary education who in turn are more likely to use these services than Kenyans without any formal education. Older Kenyans are more likely to use financial services. Salaried employees are more likely to use formal financial services and are less likely to be excluded. Compared to Kenyans dependent on pensions or remittances, employed, self-employed and agricultural workers are more likely to use bank and other formal financial services and are less likely to be excluded. They are also more likely to use informal financial services. While cell phone users typically have higher incomes, the ownership of a cell phone has an additional positive effect on the likelihood of using financial services, while it is negatively associated with the likelihood of being excluded.

Numeracy is associated with greater use of formal bank services, but is not significantly associated with the use of other formal or informal financial services or with being excluded. The survey included several questions on basic calculus problems and on risk diversification. We find that people who correctly respond to these questions are more likely to use formal banking services, while there is no significant association with the other dependent variables. Finally,

more risk-averse people are more likely to use informal financial services and are less likely to be excluded.¹⁹

Table 14. Who Use Financial Services in Kenya?

	Formal	Formal, other	Informal	Excluded
Own mobile phone	0.166 (0.000)***	0.422 (0.000)***	0.084 (0.000)***	-0.270 (0.000)***
Female	-0.018 (0.115)	-0.025 (0.132)	0.191 (0.000)***	-0.097 (0.000)***
Log(age)	0.180 (0.000)***	0.144 (0.000)***	0.088 (0.001)***	-0.159 (0.000)***
Employed	0.140 (0.000)***	0.160 (0.000)***	0.118 (0.000)***	-0.144 (0.000)***
Self employed	0.126 (0.000)***	0.100 (0.001)***	0.210 (0.000)***	-0.164 (0.000)***
Agriculture	0.079 (0.000)***	0.122 (0.000)***	0.164 (0.000)***	-0.156 (0.000)***
Risk aversion	0.015 (1.26)	0.027 (0.092)*	0.057 (0.004)***	-0.047 (0.009)***
Rural	-0.081 (0.000)***	-0.112 (0.000)***	-0.015 (0.624)	0.062 (0.023)**
Log of total expenditures	0.078 (0.000)***	0.064 (0.000)***	0.074 (0.000)***	-0.090 (0.000)***
Primary education	0.085 (0.000)***	0.105 (0.000)***	0.118 (0.000)***	-0.123 (0.000)***
Secondary education	0.214 (0.000)***	0.278 (0.000)***	0.077 (0.034)**	-0.141 (0.000)***
Tertiary education	0.422 (0.000)***	0.422 (0.000)***	0.017 (0.696)	-0.202 (0.000)***
Numeracy	0.023 (0.000)***	0.015 (0.117)	-0.006 (0.460)	-0.006 (0.489)
Observations	6326	6323	6328	6328

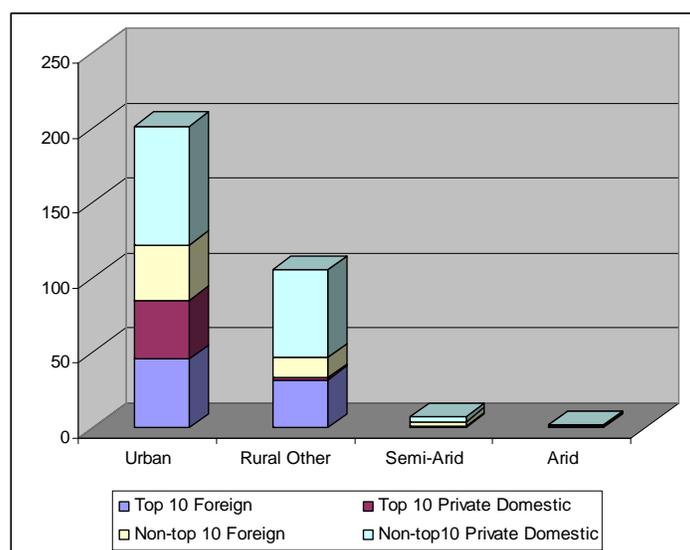
Source: Beck (2009). The dependent variable is whether a respondent uses (i) bank, (ii) other formal, (iii) informal services or (iv) is excluded. Marginal effects are reported. Regressions are weighted and stratified.

¹⁹ Risk aversion is a dummy variable that takes on value one if the individual responds yes to the following question: You avoid taking risks with your money or resources.

The Effect of Bank Branching on Access to Finance

Over ninety percent of the Kenya's branches are in urban and rural districts (Figure 2). Branches in semi-arid districts account for 4.7 percent of the national total; those in arid districts account for 2.8 percent. Even if the definition of branch is expanded to include all types of access points - agencies, pay-points, mobile units, satellite branches, and sub-branches - this picture is essentially unchanged (93 percent in urban and rural areas, 7 percent in arid and semi-arid areas). The distribution also reflects a difference in geographical emphasis between private and government owned or influenced banks.

Figure 2. Number of Bank Branches by Location²⁰



Source: CBK

The government and government-influenced banks represent about a fifth of total branches in urban districts, over half in rural districts, three-quarters in semi-arid districts, and almost ninety percent in arid districts. This suggests that government influence has a positive impact in promoting access to financial services but, in the absence of an analysis to assess the costs of government-influenced banks' poor lending practices, it should not be concluded that

²⁰ Foreign banks in the top 10 include Barclays, Standard chartered, and Stanbic. The domestic banks in the top ten are Equity, KREP, Baroda, and Commercial Bank of Africa. Cooperative, KCB, and NBK are the government-owned banks that round out the top ten.

government ownership is either the best or the cheapest way in which to maintain rural access to the banking system.

In 2006, a member of the Top 10 was the main bank for 75 percent of the banked respondents in urban areas, 67 percent in rural and semi-arid areas, and 55 percent in arid areas. The PostBank provides most of the remaining access, playing an increasingly important role as one goes from urban to arid districts. Banks that are not in the Top 10 banks play a much more marginal role, and then only in urban and rural districts. Although the branching figures in Figure 2 indicate that non-top 10 banks account for 45 percent of urban branches and 35 percent of rural branches, those branches provide services to far fewer people than do the branches of the top 10 banks.

The analysis of interest spreads in the previous section and the discussion in the next section suggest that consolidation of the private banking sector might yield benefits in terms of both improved stability and efficiency (lower interest spreads, wider range of service offerings). Given the geographic segmentation of bank branches described in this section, such private sector consolidation would not have a major negative impact on the depth of outreach of the banking sector.

At the same time, the figures in this section also show that depth of outreach remains a serious problem for the Kenyan financial sector. The banks best positioned to maintain or extend outreach are government-owned banks that are also in most in need of efficiency improvement. Ownership restructuring could be a solution, but efforts to privatize these banks would need to balance competing objectives so that profitability and efficiency improvement did not come at the expense of reduced outreach. Such tensions have been successfully balanced in bank privatizations in both Uganda and Tanzania, which offers some hope (See Clarke, Cull, and Fuchs, 2009 and Cull and Spreng, 2008). A more effective – and cheaper – approach to foster outreach may be to provide subsidies to private sector banks to increase their rural presence using lower cost mechanisms (such as mobile offices and new technologies such as mobile payments) and reinforce this by promoting the development and regulation of non-banking institutions such as SACCOs and MFIs.

6. Consolidation as an Instrument for More Efficiency and Stability

Kenya's Vision 2030 seeks to facilitate the transformation of the banking sector to bring in fewer, stronger, and larger banks. The higher capital levels in banks are expected to create a vibrant and globally competitive financial sector that will create jobs and also promote high levels of savings to finance Kenya's overall investment needs. What does theory and international experience tell us about the relationship between market structure, stability and efficiency?

Theoretical models have made contrasting predictions on the relationship between bank concentration, competition and stability.²¹ On the one hand, bank concentration may enhance profits and therefore lower bank fragility. High profits provide a buffer against adverse shocks and increase the franchise value of the bank, reducing incentives for bankers to take excessive risk. In addition, proponents of this 'concentration-stability' view argue that larger banks can diversify better so that banking systems characterized by a few large banks will tend to be less fragile than banking systems with many small banks (Allen and Gale, 2004). Further, few large banks might be easier to monitor than many small banks. On the other hand, proponents of the concentration-fragility view argue that market power might result in higher interest rates, which in turn provides incentives to borrowers to take higher risks (Boyd and de Nicoló, 2005). Second, advocates of the concentration-fragility view argue that (i) relative to diffuse banking systems, concentrated banking systems generally have fewer banks and (ii) policymakers are more concerned about bank failures when there are only a few banks. Based on these assumptions, banks in concentrated systems will tend to receive larger subsidies through implicit "too-big" or "too important to fail" policies that intensify risk-taking incentives and hence increase banking system fragility (e.g., Mishkin, 1999). Further, having larger banks in a concentrated banking system could also increase the contagion risk, resulting in a positive link between concentration and systemic fragility.

²¹ See Carletti and Hartmann (2003) for an in-depth literature survey and Allen and Gale (2004) for an excellent exposition on the different theoretical mechanisms that can lead to contrasting relationships between competition and stability. See Beck (2008) for an overview of the recent empirical literature.

Cross-country evidence shows that more concentrated banking systems are less likely to suffer systemic fragility; at the same time, competition also contributes to greater stability (Beck, Demirguc-Kunt and Levine, 2006; Schaeck, Cihak and Wolfe, 2006). When analyzing the channels through which concentration might be positively associated with banking system stability, Beck et al. find tentative evidence that more concentrated banking systems allow better possibilities for banks to diversify risk. On the other hand, they do not find any evidence that it is easier for bank supervisors to monitor more concentrated banking systems or that stability results from market power and the consequent increase in franchise values of banks in more concentrated banking systems. In summary, higher concentration levels do not necessarily imply less competition, but might affect bank stability through other channels. Considering bank-level data, researchers have arrived at different conclusions. On the one hand, Boyd, de Nicoló and Jalal (2006) find banks are closer to insolvency, i.e. more likely to fail, in countries with more concentrated banking systems. On the other hand, Schaeck, Cihak and Wolfe (2006) and Schaeck and Cihak (2007) show that banks have higher capital ratios in more competitive environments.

Summarizing, there is no clear indication that competition is detrimental per se for bank stability or that a more concentrated banking system necessarily implies less competition. Similarly, cross-country studies have shown little effect of market structure on net interest margins, but rather highlighted the importance of a contestable and open banking market without restrictive regulatory policies (Demirguc-Kunt, Laeven and Levine, 2004). Evidence for Uganda has shown that macroeconomic policies and deficiencies in the contractual framework are the most important factors explaining high spreads and margins (Beck and Hesse, 2009). While small scale can also explain high spreads, market structure indicators are not significantly associated with bank efficiency. Overall, while larger banks might result in greater overall efficiency, the resulting higher concentration is not necessarily associated with increased or reduced efficiency. The effect of market structure on access to financial services, on the other hand, points to a potentially negative effect of a more concentrated banking system on access to loans by small firms (Beck, Demirguc-Kunt and Maksimovic, 2004) and lower geographic outreach (Beck, Demirguc-Kunt and Martinez Peria, 2008).

While the Kenyan banking sector is often seen as highly oligopolistic with remarkable features of market concentration and leadership, it is also characterized by small-sized fringe banks with very high overhead costs and weak capital bases. The capital levels of most of the banks are below \$25m which is lower than that of the smallest banks in Nigeria. The Government of Kenya, through the Finance Act, 2008, has therefore begun increasing minimum capital requirements for banks from Kshs 250m (\$3.1m) to Kshs 1bn (\$12.5) by 2012.

Cross-country evidence and the evidence across Kenyan banks presented above point to potential gains from such a consolidation on both the efficiency and stability of the financial system. On the other hand, there might be a negative impact on access, especially on customers of small niche banks. Critically, however, the impact of consolidation on efficiency, stability and access will depend on the implications of a more concentrated banking system for competition. Beyond the effect of changes in the size distribution on stability, efficiency and access, one should not forget the repercussions of ownership structures for these three dimensions of financial development.

7. Conclusion

From this overview of recent development in the Kenyan banking sector, a number of themes emerge. First, the government reform strategy has produced a number of benefits, especially with regard to soundness and stability. Reducing government borrowing and creating a stable macroeconomic environment did much to ease lending rates and reduce spreads during this period. Increasing banks' capital requirements, introducing a limited deposit insurance scheme, and provisioning aggressively against non-performing loans also contributed to greater banking sector stability. There was also improvement in the efficiency of intermediation beyond that attributable to improved government finances and a stable macroeconomic environment. In particular, banks' overhead costs declined through competition, though the results were more evident for foreign-owned banks than others. Indeed, private domestic banks saw their interest spreads increase from 2005 to 2007, and plans to force the consolidation of some of these smaller banks are being considered. Access to financial services is limited to a relatively small subset of the Kenyan population, though this is true in much of the developing world. The banks with the physical infrastructure (branches) to expand access beyond the urban areas, mostly

banks in which the government has an ownership interest, tend also to be among the least efficient. Obvious tensions therefore emerge in pursuing improvement in access, efficiency, and stability at the same time. While much has been accomplished with regard to banking reform in Kenya, there remains much left to do. Beyond maintaining macroeconomic stability and significant improvement in the contractual and informational frameworks (including the credit registry), regulatory and competition policies will play an important role. A priori, however, it is not clear that the push towards larger banks will allow Kenya to reap benefits in terms of outreach. It will be more important to focus on the ownership structure and a competitive environment for all banks to achieve the goals of Vision 2030. This would imply privatization of the remaining government-owned banks and a level regulatory playing field for all deposit-taking institutions. The latter includes effective, but not overly burdensome regulation and supervision of MFIs and SACCOs. It also implies maintaining an openness to new, even non-bank, providers of financial services, which has enabled the success of M-Pesa.

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