Do interest rate controls work? Evidence from Kenya

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Abstract
This paper reviews the impact of interest rate controls in Kenya, introduced in September 2016. The intent of the controls was to reduce the cost of borrowing, expand access to credit, and increase the return on savings. However, we find that the law on interest rate controls has had the opposite effect of what was intended. Specifically, it has led to a collapse of credit to micro-, small-, and medium-sized enterprises; shrinking of the loan book of the small banks; and reduced financial intermediation. Because of their adverse effects on bank lending, we estimate that the interest rate controls have reduced economic growth by ¼–¾ percentage points on an annual basis. We also show that interest rate caps reduced the signaling effects of monetary policy. These suggest that (1) the adverse effects could largely be avoided if the ceiling was high enough to facilitate lending to higher-risk borrowers and (2) alternative policies could be preferable to address concerns about the high cost of credit.

Keywords
Africa, deposit floor, interest rate caps, Kenya, monetary policy

JEL Classification
E43; E52; G21
1 | INTRODUCTION

High interest rates on loans from the banking sector have been a frequent frustration of policymakers in developing countries. These high rates are considered an obstacle to greater investment, financial inclusion, and economic growth. High spreads between deposit and lending rates, in the absence of effective competition, can also lead to above-normal profits. The handsome profits of the banking system in some countries also make them a frequent target of populist ire, provoking calls to regulate borrowing costs by controlling interest rates.

In Kenya, proposals to control interest rates have emerged from time to time over the past two decades. In September 2016, a law on interest rate controls—which imposed a ceiling for lending rates for loans of all maturities at 4 percentage points per annum above a “reference rate” and a floor on the interest rate for time deposits at 70% of the “reference rate” (the floor did not apply to demand deposits)—received unanimous support from Parliament. The reference rate was subsequently clarified to be the Central Bank Policy Rate (CBR). At the time of their introduction, Kenya’s interest rate controls affected more than half of all existing loans and time deposits. As such, they were among the most drastic ever imposed and provide a fascinating case study with lessons for many developing countries.

Studies assessing the actual effect of lending rate ceilings, including usury laws, on consumer financial markets are relatively sparse, despite the prevalence of such controls across the world. Early literature, documented by Villegas (1989), looked at the economic rationale of usury laws in the USA (Blitz & Long, 1965), focusing on two main issues: whether interest rate ceilings under such laws reduce the quantity of credit to risky borrowers and whether they reduce the interest rates paid by successful borrowers. On the first hypothesis, an empirical analysis based on the US data suggests that poorer households received lower point-of-sale credit in the states that implemented usury laws. Villegas (1982), using auto loan market data in the USA, estimates interest rates paid for motor vehicle loans and identifies potential borrowers most likely to be rationed out by the imposition of rate ceilings. However, Peterson (1983) argues, based on the evidence from Arkansas, that consumers are able to circumvent restrictive usury laws by engaging in non-point-of-sale credit obligations including credit cards. On the second hypothesis, using data from the USA, Villegas (1989) finds no evidence that successful loan applicants in states with usury laws enjoy reduced cost of financing relative to loan applicants in other states.

In cross-country studies, ZEW (2010) provides a comprehensive inventory of the types of interest rate restrictions in the EU member states and argues that interest ceilings lead to alternative forms of credit outside banking systems. Elison and Forster (2008) consider descriptive evidence on the impact of interest ceilings from various regulatory approaches in France, Germany, Italy, Japan, the UK, and the USA and conclude that interest rate ceilings are ineffective in addressing overindebtedness, crowd out low-income borrowers, and lead to the market entry of unlicensed lenders with predatory pricing. Helms and Reille (2004) assess the impact of interest rate ceilings on microfinance institutions (MFIs) using a descriptive approach for 40 developing and transitional countries. They find that such ceilings generally hurt the poor as they discourage the provision of small loans by making it impossible to recover the high administrative cost of lending. Using high-quality financial data from 29 institutions in seven Latin American and Caribbean countries over a period of 4 years and drawing on information from field visits with clients, Campion, Ekka, and Wenner (2010) explore patterns of cost and efficiency in MFIs and find that interest rate caps reduce the outreach of these institutions to the poor, women, and rural clients. Mbengue (2013) notes the increasing use of interest rate ceilings in sub-Saharan Africa. Maimbo and Henriquez Gallegos (2014) provide a literature survey on interest rate caps and suggest that they create several problems, including reduced financial intermediation, increased predatory lending, reduced transparency, and elevated risks to financial stability.
More recent country-specific studies include Hawkins and Khalil (2015) on the application of interest rate caps in Zambia in 2013, Heng (2015) on the impact of the 2013 financial services law in Bolivia, and Madeira (2019) on the 2013 interest rate legislation in Chile.

1. Hawkins and Khalil argue that following the imposition of interest rate caps in Zambia, their effect on reducing the effective lending rate has been offset, in many instances, by higher fees; the caps have curtailed lending to small and medium-sized enterprises (SMEs) and led to consolidation in the nonbank sector; and transparency in loan pricing has been undermined.

2. Heng (2015) documents that following the adoption of the law, credit to “targeted” sectors grew as intended. At the same time, the increase in the average loan size provided by MFIs and the declining number of borrowers point to potentially adverse effects of the interest rate caps on financial inclusion.

3. Using a representative sample of households that matches the survey data and banking loan records, Madeira (2019) compares consumers with risk-adjusted interest rates slightly above and slightly below the legal interest rate ceiling—two groups with similar characteristics but given different treatment under the 2013 legislation in Chile. After accounting for both macroeconomic shocks and unobserved household heterogeneity, Madeira shows that being above the interest rate cap reduces the probability of credit access by 8.7%. A counterfactual exercise also shows that the new legislation excluded 9.7% of borrowers from consumer loans. The law’s impact was strongest on the youngest, least educated, and poorest families.

This paper seeks to add to this literature with the use of a novel data set from two bank-level surveys conducted by the Kenya Bankers Association (KBA). The first was conducted immediately before the implementation of the interest rate controls in August 2016, and the second, 1 year after their introduction. Together with Central Bank Monetary Survey Data, these data sets allow us to assess the impact of interest rate controls on loans and time deposits by the type of bank, borrower, and depositor, and also to assess the relative importance of factors driving bank intermediation spreads. Several important findings emerge. By lowering the lending rate spreads, the law on interest rate controls seems to have had the opposite effect of what the lawmakers intended. These include the collapse of bank credit to micro-, small-, and medium-sized enterprises (MSMEs); the shrinking of the loan book of small banks; and an overall adverse impact on financial intermediation as commercial bank credit shifted away from the private sector and toward the public sector. We also show that interest rate caps reduced the signaling effects of monetary policy. These findings suggest that (1) the adverse effects could largely be avoided if the ceiling was high enough to facilitate lending to higher-risk borrowers and (2) alternative policies could be preferred to address concerns about the high cost of credit.

The rest of this paper is structured as follows. First, we describe the international experience with lending rate ceilings (Section 2). Second, we discuss the nature of interest rate controls in Kenya (Section 3). Third, we describe the impact of the controls in Kenya (Section 4). Finally, we offer concluding remarks (Section 5).

2 INTERNATIONAL EXPERIENCE WITH INTEREST RATE CONTROLS

Floors on deposit rates are very rare and, in any event, are usually not combined with caps on lending rates.2 As for ceilings on lending rates, many countries still use some form of a maximum level of lending rates, including many advanced economies. Over the past several decades, however, caps on
lending rates have been relaxed in most countries, and nowadays, they generally target predatory lending practices or provide support to a specific industry to address a perceived market failure. Maimbo and Henriquez Gallegos (2014) and Ferrari, Masetti, and Ren (2018) provide specific country examples of how these problems manifest themselves:

1. **Reduced financial intermediation.** Loans to small borrowers (e.g., small farmers, SMEs, and individuals) tend to be riskier and are more expensive to manage. Banks are likely to offer less credit to these borrowers when interest rate caps are imposed. Instead, financial institutions reallocate their lending toward the government and large private sector borrowers (e.g., Bolivia, Chile, Colombia, the Dominican Republic, Ecuador, Haiti, Nicaragua, Peru, Poland, Zambia, and WAEMU countries). An increase in average loan size reflects lower access for small borrowers and larger loans to more established firms after the imposition of the caps (e.g., Bolivia, Ecuador, South Africa, and Zambia).

2. **More, not less predatory lending.** As the access to bank credit is curtailed, potential borrowers may be forced to turn to informal lenders that charge much higher rates and are not subject to supervision. This can lead to lower banking sector intermediation, decreased diversity of products for low-income households (e.g., France and Germany), and an increase in illegal lending (e.g., Japan and the USA).

3. **Reduced transparency.** Lenders may institute noninterest charges, such as fees, to compensate for lower income from loans. This makes it more complicated for customers to understand the total cost of borrowing and more difficult to make well-informed borrowing decisions. (e.g., Armenia, Nicaragua, South Africa, and Zambia).

4. **Increased concentration in the banking sector.** Implementation of binding ceilings on lending rates and binding floors on deposit rates can adversely affect the viability of MFIs and small-sized banks, whose business model relies on attracting deposits at higher interest rates and lending to high-cost/high-return SMEs, forcing their exit from the market (e.g., the UK, and Zambia).

### 3 | INTEREST RATE CONTROLS IN KENYA

The law on interest rates, which was sponsored by a group of lawmakers and received unanimous support from parliament, became effective in September 2016. Similar attempts in the past to impose interest rate controls (in 2001 and 2011) had failed. The law imposed (1) a ceiling on lending rates by “banks or financial institutions” at 4% above a “reference rate” and (2) a floor on interest rates for time deposits, equal to 70% of the “reference rate.” Both the Central Bank of Kenya (CBK) and the Treasury had come out publicly against the bill when it was approved by Parliament in late July 2016. While signing the law “as is,” the president also made explicit his reservations that the law could push some lending back into the informal market.

The CBK issued a circular in September 2016, setting the policy rate (CBR) as the reference rate for the purposes of this law. When the law became effective, the CBR was 10.5%, implying a deposit rate floor of 7.35% and a lending rate cap of 14.5%.

The lawmakers’ objective in setting interest rate controls was to expand access to credit and increase the return on savings. High lending rates were viewed as a source of excess profits for banks, while also harming the economy by stifling investment and putting borrowing out of reach for many consumers (e.g., for mortgages and consumer loans).

At the onset of the interest rate controls, macroeconomic conditions were favorable with steady and robust economic growth (around 6%) and single-digit inflation. There had been no significant
regulatory changes or any market developments around that period with any material impact on access to credit. While bank credit growth was slowing down, this was in line with regional developments (Figure 1).

In addition, interest rate spreads were trending downward and broadly aligned with Kenya’s peers selected from a group of 53 lower-middle-income countries when the interest rate controls were introduced (Figure 2, panel A). However, the profitability of Kenyan banks, as measured by the return on equity (RoE), remained above the 75th percentile of the lower-middle-income countries although it was also trending downward before interest rate controls (Figure 2, panel B).

High profitability did not seem to reflect a lack of competition. The level of concentration in Kenya’s banking sector, as measured by the Herfindahl–Hirschman index (a commonly used indicator of the degree of competition), was less than 0.1 and the lowest in Africa at the time controls were introduced.

To assess the factors driving the decline in interest rate spreads, we conduct an accounting decomposition exercise to assess the relative importance of different factors (Table 1). Using bank balance sheets and income statements, the average intermediation spread between effective deposit and lending rates is decomposed into: (1) the interest paid to recover the interest costs of funds deposited as required reserves, (2) loan loss provisions, (3) operating costs allocated based on the share of loans in total assets, and (4) pretax profit margins on private sector lending. The results indicate that the average intermediation spread declined from 14.9% in 2002 to 8.3% in 2015. In addition, while overhead costs—of which 40% are personnel costs—are an important contributor to intermediation spreads, and increased slightly between 2002 and 2015, profit margins dropped.

The survey data from the KBA at the onset of interest rate controls, based on August 2016 data, provide important insights into the structure of the banking sector and how the controls would affect the industry (Table 2). More specifically:

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**FIGURE 1** Credit to the private sector (annual percentage change) [Colour figure can be viewed at wileyonlinelibrary.com]
1. On average, about 60% of outstanding loans were at interest rates above the lending rate ceiling. The share was roughly uniform across different bank size groups.

2. The share of bank loans to MSMEs—higher-risk borrowers—that account for about three-fourths of total employment in Kenya was significantly higher for small banks. The overall share of banking sector loans to SMEs was about 18%. However, the share for small banks (39%) was significantly higher than that for large banks (11%). The large-sized banks’ loan portfolio was concentrated in corporate and consumer (payroll-secured) loans.

**FIGURE 2** Selected banking sector indicators (in percent) in lower-middle-income countries. Source: World Bank Financial Sector Indicators database 2018, Kenyan authorities, and authors’ calculations [Colour figure can be viewed at wileyonlinelibrary.com]
TABLE 1  Decomposition of interest spreads: 2002 and 2015

| Period | 2002 | 2015 |
|--------|------|------|
| No. of banks | (43) | (40) |
| Interest earned on loans | 18.3 | 15.3 |
| Interest paid on customer deposits | 3.4 | 7.0 |
| **Spread** | **14.9** | **8.3** |
| Interest paid to cover required reserves | 0.3 | 0.3 |
| Loan loss provisions/loans | 2.5 | 1.5 |
| Operating costs/loans | **5.9** | **6.1** |
| Pre-tax profit | 6.2 | 0.4 |

**Memorandum items:**

- Return on assets (after tax) | 1.4 | 1.6 |
- Personnel costs (% of operational costs) | – | 40.4 |

*Note:* Data for 2002 from Beck and Fuchs (2004). The decomposition is similar to Cihak and Podpiero (2005). Simple averages based on end period data for 2014–2015.

Asset size weighted averages would result in intermediation spread of 9.3 in 2015.

Further details available at Appendix 1.

*Sources:* Central Bank of Kenya and authors’ calculations.

TABLE 2  Kenya: KBA survey results for bank loans to private sector prior to interest rate controls (August 2016)

| | SME loans | | Consumer loans | | Share of loans with int. over 14.5% (%) |
|---|---|---|---|---|---|
| | Share (%) | Avg. int. (%) | Share (%) | Avg. int. (%) | |
| Bank size | | | | | |
| Large | 11 | 19 | 22 | 18 | 59 |
| Medium | 21 | 17 | 13 | 16 | 65 |
| Small | 39 | 17 | 8 | 16 | 55 |
| Averagea | 17 | 18 | 18 | 17 | 61 |

*aAverages weighted by market share of each bank.

TABLE 3  Kenya: KBA survey results on bank deposits prior to interest rate controls (August 2016)

| | Savings deposits | | Share of deposits with interest less than 7.35% (%) |
|---|---|---|---|
| | Share (%) | Avg. int. (%) | |
| Bank size | | | |
| Large | 57 | 6.6 | 55 |
| Medium | 71 | 7.0 | 54 |
| Small | 70 | 8.4 | 30 |
| Averagea | 63 | 6.9 | 53 |

*aAverages weighted by market share of each bank.
3. The average lending rate to SMEs was broadly uniform across bank groups. This is somewhat surprising, as large banks have lower costs than small banks, yet charge similar interest rates. This may have reflected the market power of the large banks.

4. The share of consumer loans was higher for large banks. This possibly reflects the preference of large banks to provide low-risk, payroll-backed personal loans. Similar to the pattern on loans to SMEs, rates for consumer loans were roughly uniform across banks of different sizes.

Similarly, more than half of outstanding saving deposits carried an interest rate below the floor set by the law. However, there were significant differences across banks, with small banks relying more heavily on interest-earning deposits and paying a higher interest rate at the time of the adoption of the law relative to medium and large banks (Table 3). Specifically, the deposit rate floor affected (on average) over half of the bank deposits, but only about one-third of deposits in small banks. This reflected the business model of small banks, that is, relying on higher-cost funding to lend to high-risk/high-return borrowers such as SMEs.

4 | THE IMPACT OF INTEREST RATE CONTROLS IN KENYA

A survey was conducted by the CBK 1 year after the introduction of the interest rate controls to assess their impact. A total of 32 banks participated in the survey, representing over 80% of the banking sector in Kenya, covering data through September 2017 (1 year since the introduction of the controls). In summary, the survey results showed a number of adverse effects. These included a sharp decline in bank credit to SMEs (especially in trade and agriculture), as well as a disproportionate hit on the lending activity and profitability of small banks. In addition, as discussed in the following text, the controls reduced the signaling role of the policy rate, thus complicating the communication of monetary policy by the CBK.

4.1 | Credit developments: Adverse effects on SMEs and small banks

The lending caps seem to have contributed to substantial changes in the lending behavior of banks:

1. Collapse of bank credit to SMEs. The stock of credit to SMEs dropped by around 10% in just 1 year (Figure 3, panel A). In contrast, lending to other types of borrowers (e.g., households or large corporates) continued to increase at a rate similar to the one prevailing before the introduction of the caps.

2. Shrinking of the loan book of small banks. On the one hand, the outstanding stock of credit of small banks declined by about 5% in the 12 months to September 2017 (Figure 3, panel B). On the other hand, medium- and large-sized banks continued to achieve moderate credit growth. While the slowdown of credit started about a year before the introduction of lending caps, it was broadly shared across all bank groups. One explanation for why small banks have been disproportionately hit since the caps is their different business model: they rely more strongly on higher-risk/higher-return borrowers, such as SMEs. With most of the lending to this segment at rates above the ceiling on the lending rate (see Table 2), small banks seem to have restricted credit to these borrowers.

3. A shift of credit away from the private and toward the public sector. Overall credit to the private sector has grown very slowly in nominal terms (growth of 2% y/y as of end-October 2017),
**FIGURE 3** Selected financial indicators. Source: Survey of Kenyan banks conducted by the Central Bank of Kenya and authors’ calculations [Colour figure can be viewed at wileyonlinelibrary.com]
resulting in a sharp decline in real terms and as a share of gross domestic product (GDP). At the same time, lending to the public sector has increased sharply (growth of over 25% in nominal terms during the same period), helping finance a larger fiscal deficit (Figure 3, panel C). These developments reflect reduced financial intermediation rather than a crowding out story, given that T-bill rates remained broadly unchanged following the implementation of interest controls.

A simple empirical analysis confirms the apparent structural breaks in the share of credit to SMEs, lending by small banks and the relative shares of credit extended to the private and public sectors following the implementation of interest rate controls in September 2016. The results summarized in

**TABLE 4**  Short-term trend reversal following interest rate controls\(^a\) (Quarterly, December 2014–September 2017)

|                                      | Pre-controls\(^b\) | Post-controls\(^b\) | Difference     |
|--------------------------------------|--------------------|---------------------|----------------|
| Credit to MSMEs relative to corporate sector | 0.23**             | −0.59**             | −0.82**        |
| Small banks’ credit relative to large banks’ credit | 0.02**             | −0.23**             | −0.25**        |
| Public sector credit relative to deposits\(^c\) | 0.11*              | 0.22**              | 0.12**         |
| Private sector credit relative to deposits\(^c\) | 0.37**             | 0.28**              | −0.09**        |
| Private sector credit growth\(^c\) | 0.06**             | 0.00                | −0.07**        |

*Note: MSMEs, micro-, small-, and medium-sized enterprises.*

\(^a\)Based on regressing each variable on a constant, a time trend, and the time multiplied by a dummy variable that takes the value of one from 2016Q4 onward. Post-controls trend coefficient is calculated as the sum of the two coefficients on the trend terms.

\(^b\)Implementation starts from 2016Q4.

\(^c\)Estimation for 2003Q1-2018Q1.

*Denotes significance at 5% level based on Newey–West standard errors.

**Denotes significance at 1% level based on Newey–West standard errors.

*Sources: CBK and authors’ calculations.*
Table 4 shows the significant trend reversal in the share of credit extended to SMEs and by small banks. In addition, bank lending to the public sector (as a share of total deposits) increased significantly, whereas the growth of private sector credit, as a share of deposits, was dampened. Private sector credit growth, as a whole, has also been notably slower in the post-controls era.

Across sectors, the reduction in private credit has affected mainly agriculture, trade, and financial services (Figure 4). The stock of credit to the trade sector—which is the second-largest sector in terms of borrowing and accounts for about a fifth of total credit to the private sector—dropped by about 3%. Other small sectors, such as agriculture and financial services (which, combined, account for about 7% of outstanding bank credit), also experienced a decline. Meanwhile, credit to the construction sector continued to grow at a very rapid pace.

The controls have also had an adverse impact on the population’s access to bank credit. The caps have contributed to a reduction in the number of borrowers since the introduction of the lending caps (by about 27%), whereas the average loan size has increased (by about 47%). There is no evidence that the high-risk borrowers that have been cut off by the banks have been able to find alternative sources of finance during the period covered by this paper, as the growth of lending by institutions that are not subject to interest caps (e.g., MFIs and SACCOs) remained broadly unchanged through end-September 2017. The number and value of mobile loans have continued to increase, but at a slower pace than before the introduction of the caps.

Trends in the growth of bank credit and deposits have diverged since the introduction of interest rate controls (Figure 5). Starting in mid-2014, the growth of both deposits and lending by banks began to slow. The two have generally comoved in recent years. But while deposits have staged a rebound since early 2017, credit to the nominal private sector has remained broadly unchanged, growing at about 2% y/y over the past several months.

There has been a significant shift in deposits away from time and toward demand deposits (as the latter are not affected by the floor set by Parliament) and a shortening of the maturity of new loans. The floor on the interest rate for time deposits was intended to increase the return on savings. But, instead, it has prompted a sharp and immediate decline in time deposits and a commensurate increase

**FIGURE 5**  Trends in private credit and deposits (y/y growth, %). Source: Central Bank of Kenya and authors’ calculations [Colour figure can be viewed at wileyonlinelibrary.com]
in demand deposits that are not remunerated. As a result, the ratio of time deposits to demand deposits declined by 30 percentage points (from 130% at the end of July 2016 to less than 100% in October 2016). The average maturity of new loans has also declined due to the lending caps.

4.2 | Bank profitability: A disproportionate hit on small banks

The law on interest rate controls has forced banks to adjust to a new environment of smaller interest margins. Bank profits are increasingly coming from noninterest income (e.g., fees and charges) and lending to the government and less from interest income on private sector lending (Figure 6). In a situation where the lending rate has been capped at 13%–14%, investing in long-term government securities yields similar returns and has several additional advantages over lending to the private sector: (1) higher creditworthiness and lower risk relative to average private sector borrowers; (2) no need for borrower screening; (3) no administrative costs for loan servicing; (4) no requirement for additional capital for nonperforming loans; and (5) the ability to easily sell government securities in the market (a liquidity premium). The migration from lending to the private sector to investment in government securities is similar across the different bank groups. High government budget deficits and borrowing requirements, together with the floor on deposit rates (which was in effect until September 2018), have kept interest rates on government paper elevated, further aggravating the effect of the interest rate ceiling on private sector borrowing.

Amid a deterioration of income and an increase in nonperforming loans, the RoE for banks declined in 2017 relative to 2016. While all three bank tiers have suffered significant drops in RoE, the controls have again been particularly damaging for the small banks, whose profits were already below the industry average. Banks have made several adjustments to their business models to adapt to the new environment. They have cut staff (by over 15% during 2016–2018, accelerating a trend that started in 2015). Banks are also relying more on digital channels to reduce costs and overhead.
Many of these findings are supported by an accounting decomposition exercise of intermediation spreads for 2017 relative to 2015 (Table 5). Specifically, average commercial bank intermediation spreads declined from 830 basis points in 2015 to 660 basis points in 2017. The decline was broadly uniform between large and small banks. While average effective lending rates also declined, contrary to the intention of the law, average deposit rates also declined, owing to the shift from time deposits to demand deposits. Average operating costs remained broadly stable, while average profit margins on private sector lending activities declined further and turned negative.

### TABLE 5  Decomposition of interest spreads: 2015 and 2017 (annual basis)

| Size          | Total | 2015 | 2017 | Large | 2015 | 2017 | Small | 2015 | 2017 |
|---------------|-------|------|------|-------|------|------|-------|------|------|
| No. of banks  | 40    | 40   | 6    | 6     | 20   | 20   |       |      |      |
| Interest earned on loans | 15.3  | 11.8 | 13.7 | 11.6  | 14.8 | 11.6 |       |      |      |
| Interest paid on customer deposits | 7.0   | 5.2  | 3.6  | 3.1   | 7.7  | 5.9  |       |      |      |
| Spread        | 8.3   | 6.6  | 10.0 | 8.5   | 7.1  | 5.7  |       |      |      |
| Interest paid to cover required reserves | 0.3   | 0.2  | 0.2  | 0.2   | 0.4  | 0.3  |       |      |      |
| Loan loss provisions/loans | 1.5   | 2.0  | 1.5  | 1.8   | 1.5  | 2.2  |       |      |      |
| Operating costs/loans | 6.1   | 6.1  | 5.9  | 5.4   | 7.0  | 11.0 |       |      |      |
| Pre-tax profit | 0.4   | −1.8 | 2.4  | 1.1   | −1.8 | −7.9 |       |      |      |
| **Memorandum items:** |       |      |      |       |      |      |       |      |      |
| Return on assets (after tax) | 1.6   | 0.5  | 3.3  | 3.0   | 0.8  | −2.1 |       |      |      |
| Personnel costs (% of operational costs) | 40.4  | 38.8 | 41.8 | 40.1  | 41.2 | 40.3 |       |      |      |

**Note:** The decomposition is similar to Cihak and Podpiero (2005). Simple averages across banks are reported based on end-period data for 2014–2017. Further details are available in Appendix 1.

**Source:** Central Bank of Kenya and authors’ staff calculations.

4.3 | Reduced monetary policy effectiveness

The introduction of interest rate controls has constrained the ability of the CBK to adjust the policy rate in response to economic developments. Prior to the introduction of interest rate controls, the CBK had been changing the CBR in response to developments in inflation and growth. Specifically, it appears to have increased the policy rate when core inflation moved above the midpoint of the inflation target range (5% ± 2.5%) and/or growth accelerated above potential and lowered the policy rate when core inflation and growth moved in the opposite direction. After the introduction of the caps, however, the CBK kept the policy rate unchanged at 10% (until March 2018), despite lower growth and a reduction in core inflation in 2017. One concern was that a lower policy rate could potentially ration a greater share of high-risk/high-return borrowers, exacerbating the credit constraints on this group of borrowers, thus ending up tightening (rather than loosening) credit conditions.

While these concerns help explain why the CBK kept the policy rate unchanged in the aftermath of the controls, the stance of monetary policy was, in fact, looser after the implementation of the interest...
rate controls. Specifically, average interbank interest rates have been consistently and significantly below the policy rate (averaging about 6\% during 2017–2018 or 400 basis points lower than the policy rate). This stands in contrast to the pre-control period when interbank rates moved around the policy rate (Figure 7). Excess liquidity has kept 91-day treasury bill rates between 150 and 250 basis points below the overnight policy rate since September 2016. The interbank rate has also been very volatile during this period, ranging between 2.5\% and 11\% (Figure 7).

The significant difference between the policy rate and interbank interest rate, as well as the high volatility of the latter, has undermined the signaling role of the policy rate.\textsuperscript{11} The implementation of a forward-looking monetary policy framework requires that the central bank sets the policy rate to signal the stance of monetary policy, and intervene as necessary, to keep the interbank rate within a narrow corridor around the policy rate. In the presence of interest rate controls, however, steps to realign the interbank and policy rates at the current juncture would have likely resulted in a premature tightening of monetary policy in Kenya.

4.4 | Gauging the impact on growth

Assessing the impact of the interest rate controls on economic growth is challenging because of the endogeneity between credit and GDP. While credit growth and financial development, in general, support economic growth through financial inclusion, higher investment, and consumption, economic growth also increases credit growth through improving creditworthiness and raising collateral values. Recently, several empirical studies find that credit and economic growth are positively correlated, and the direction of causation is from credit growth to economic growth. Garcia-Escribano and Han (2015), for example, report a positive and significant effect of credit growth (corporate, consumer, and housing credit) on output growth in emerging market economies. They find the response of GDP growth to a 1 percentage point increase in private credit growth
ranging from about 0.03 percentage points for corporate credit to about 0.075 percentage points for consumer credit.

Assessing the effect of the interest rate controls on economic growth in Kenya is also difficult as the controls were in place for a relatively short period of time. In this light, empirical estimates of the effect of the controls on growth should be interpreted with caution. Keeping this caveat in mind, empirical estimates based on a quarterly VAR from 2000Q1 to 2018Q1, including control variables, suggest that the real GDP growth response to a 1 percentage point change in real private credit growth lies between 0.07 and 0.15, pointing to a fairly wide range.\textsuperscript{12,13} With nominal quarterly private credit growth at about 3.7\% y/y as of end-June 2018 (compared to an average of about 20\% between March 2008 and June 2016), annual economic growth would, based on the aforementioned elasticities, be lower by \(\frac{3}{4}-\frac{5}{4}\) percentage points. However, not all this difference can be attributed to the caps on banks’ lending rates, given that credit growth in Kenya had been slowing down since September 2014, well before the introduction of the interest rate controls.

Another approach is to look at the decline in credit to SMEs, which, as discussed earlier, is clearly related to interest rate controls. Specifically, credit to SMEs, which accounted for about 17\% of overall bank credit to the private sector in Kenya (Table 1), has declined by about 10\% in the 12 months since the introduction of interest rate controls (Figure 2). This compares to a growth of about 5\% y/y before the introduction of interest rate controls. Using the same range of elasticities of credit growth on GDP growth as above, a “normal” credit growth to SMEs would have implied a higher GDP growth of about \(\frac{1}{4}-\frac{1}{2}\) percentage points on an annual basis. This is similar to the estimate of Central Bank of Kenya (2018), which finds that rationing out MSMEs from the credit market by the commercial banks is estimated to have lowered growth in 2017 by 0.4 percentage points.

5 | CONCLUDING REMARKS

Kenya’s interest rate controls introduced in September 2016 were among the most drastic ever imposed. Two aspects stand out. First, no country, at least to our knowledge, has imposed a floor on the interest rate for all time deposits, the majority of which carried an interest rate below the established floor (the floor on deposit rates was removed effective September 2018). Second, no country—at least in recent experience—has imposed a cap on lending rates that is as stringent as the one applied in Kenya. Over the past several decades, interest rate controls have been relaxed in most countries and now focus mainly on protecting vulnerable borrowers from predatory lending practices. In contrast, about 60\% of loans in Kenya at the time of the law on interest rate controls were above the cap set by the law.

Our analysis in this paper suggests that interest rate controls in Kenya have had an overall negative impact. This reflects the fact that such controls are generally a bad policy, rather than the way the policy was implemented in Kenya. By reducing lending rate spreads, the Kenyan lawmakers intended to increase access to bank credit and boost the return on savings. However, the controls seem to have had the opposite effect. The analysis in this paper shows that since the introduction of interest rate controls there has been (1) a sharp decline in bank credit to SMEs, especially in trade and agriculture; (2) a disproportional hit on lending activity and the profitability of small banks; and (3) reduced financial intermediation, with commercial bank credit shifting away from the private sector and toward the public sector.

These are adverse for both growth and equity as they have curtailed access to credit from the banking sector. The analysis in this paper suggests that interest rate controls may indeed have had an adverse impact on GDP growth by depressing the growth of credit. The paper also showed the increased divergence of interbank rates from the policy rates following the implementation of the interest rate...
controls. This reduced the signaling effect of the policy rate as an indicator of the monetary policy stance.

One possible way to reduce the adverse effects of the controls would be to put the ceiling at a rate high enough to facilitate lending to higher-risk borrowers. Setting the lending ceiling in this manner (as done in many advanced economies) would stop the most egregious forms of predatory lending, by providing a ceiling, but still provide sufficient margin to compensate for risks. One option could be to set the ceiling at the average of past monthly rates plus a margin. This margin would, however, need to be substantial (in the double digits) to avoid rationing out high-risk borrowers. In addition, consideration could be given to using other policy instruments, instead of interest rate controls, to increase financial access and address equity concerns related to the high profits of the banking sector. For example, more progressive taxation, both personal income and excess corporate profits, could help avoid the distortions caused by the interest rate controls while dampening inequality.

DATA AVAILABILITY STATEMENT
Data available upon reasonable request to the authors, except for the data from the Kenyan Banking Sector Association, which were shared on the understanding that these data would not be disseminated beyond the authors.

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ENDNOTES
1 The floor on time deposits was removed in September 2018. In March 2019, Kenya’s high court ruled that the interest rate controls were unconstitutional but also ruled that the controls remain in place for 12 months to allow time for parliament to amend the irregular clauses in the Banking Act that introduced the controls. Subsequent to this, the President proposed—and Parliament ratified—the elimination of the controls in November 2019.
2 Indeed, a Google Scholar search with “lending rate ceiling” deposit returned 14 results, whereas “deposit rate ceiling” lending returned 429 results in July 2018.
3 Microcredit costs are high because of the greater delivery costs of small-scale transactions that require face-to-face interaction. In effect, MFIs use personal contact as a substitute for formal collateral or information from credit bureaus (see Helms & Reille, 2004; Mbengue, 2013; Rosenberg, Gaul, Ford, & Tomilova, 2013).
4 The law does not apply to non-deposit taking MFIs, Savings Credit Cooperatives (SACCOs), microfinance banks, and mobile money-related financial transactions.
5 See, for example, Njoroge (2016).
6 For the spread accounting data definitions, see description in Appendix I.
7 See, for example, Beck and Fuchs (2004) and Cihak and Podpiera (2005).
8 The survey covered 28 of the 40 commercial banks. The responders accounted for about 73% of the banking sector in Kenya and were representative across the various banking groups (small, medium, and large), covering at least two-thirds of banks in each group size.
9 Safavian and Zia (2018) also confirm this result.
10 The methodology of the decomposition is described in Appendix I.
11 See Alper, Morales, and Yang (2017) on the interaction between overnight interbank rates and the policy rate in Kenya.
12 Estimation results are available from the authors upon request. Estimation results including Granger causality test results are similar when only the pre-interest rate caps implementation period is used.
13 The analysis done by the Central Bank of Kenya suggests a similar response range (between 0.11 and 0.17). See Central Bank of Kenya (2018).
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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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