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Proactive Supervisory Policy: Short-term Pain and Long-term Gain

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Proactive Supervisory Policy: Short-term Pain and Long-term Gain

The Bank of Russia's policy for banking sector rehabilitation and clearance of nonviable and mala-fide players is continuously in the focus of public and expert community attention. Although it is obvious that the objective of supervision is to safeguard depositors and creditors' rights, experts regularly raise the issue about the impact of license revocation on competition in the banking system and that the proactive supervisory policy might benefit major, mainly state-owned, banks and squeeze small and medium-sized bona-fide banks out of the market.

The study below answers these questions, demonstrating long- and short-term effects of proactive supervisory policy on various types of banks.

Our study reveals that, in the mid-term, such a policy reduces monopolism and raises efficiency of the banking system, though adversely affecting small and medium-sized banks in the short term. All in all, the long-term benefits of proactive supervisory policy might significantly outweigh the short-term negative effects from a temporary increase in banking business concentration.

Basing on the banking sector model, we compare the short- and long-term effects of two supervisory policies with different degrees of stringency. The results show that in the short-term a stringent supervisory policy adversely affects small and medium-sized banks, including those that comply with supervisory requirements.

Yet, as the banking sector rehabilitates, the benefits from increasing trust in such banks and the banking system in general outweigh the short-term losses. The share of small and medium-sized banks in loans and deposits markets turns out to be greater compared to the period prior to the supervisory policy being made stricter.

Monopolism in the banking sector is reduced and price competition improved. The banking system efficiently creates credit and gets rid of the excessive risk of individual and systemic sustainability, while preserving the average credit risk of borrowers. At that, financial sustainability of small and medium-sized banks is increased.

Criticism of a proactive supervisory policy

The Bank of Russia's proactive policy on banking system rehabilitation and clearance from mala-fide players initiated in 2013 resulted in revocation of 332 licenses by June 2017. For reference, the number licenses withdrawn in 2002–2012 was about 390. The Deposits Insurance Agency payments to depositors grew from 0.02% GDP in 2012 to 0.7% GDP in 2015.

The proactive supervisory policy pursued by the Bank of Russia generally contributed to a reduction in banking system vulnerability. As a result, the banking sector demonstrated sufficient resilience to negative external shocks in 2014–2015. On the back of stiffening regulatory requirements, improvement of bank risk management systems and toughening of requirements on borrowers, the new credits issued since 2016 have predictably demonstrated higher quality. The banks' indicators of capital adequacy are at a comfortable level (as of 1 April 2017, the aggregate capital adequacy was 13.4%). The banking system is functioning efficiently and has started to build up its credit portfolio with the recovery of economic activity in 2017.

Meanwhile, some experts also indicate certain negative consequences of the proactive supervisory policy. In general, the criticism boils down to four key points associated with both short- and long-term consequences of license revocation:

1. Large-scale, in the critics' view, revocation of licenses results in depositors draining to major banks and banks with state participation. Minor and regional, however bonafide, banks suffer from this process. Increasing flight of depositors has a negative effect on the system in general.

2. A reduction in the number of banks will have negative consequences for banking sector competition in the long run. Since the ones that lose licenses are mainly private banks, there is a risk of increasing disproportion towards state-owned banks, which might start dictating their terms to depositors and borrowers, thus providing services from monopolistic positions at higher prices (higher credit rates and lower deposit rates).

3. In addition, it is believed that a predominance of state-owned banks will make the banking system more vulnerable to future crises. According to this vision, state-owned banks are less adaptive to shocks but tend to assume greater risks, as they realize they will be rescued anyway, so the banking system exposure to crises is thus increased.

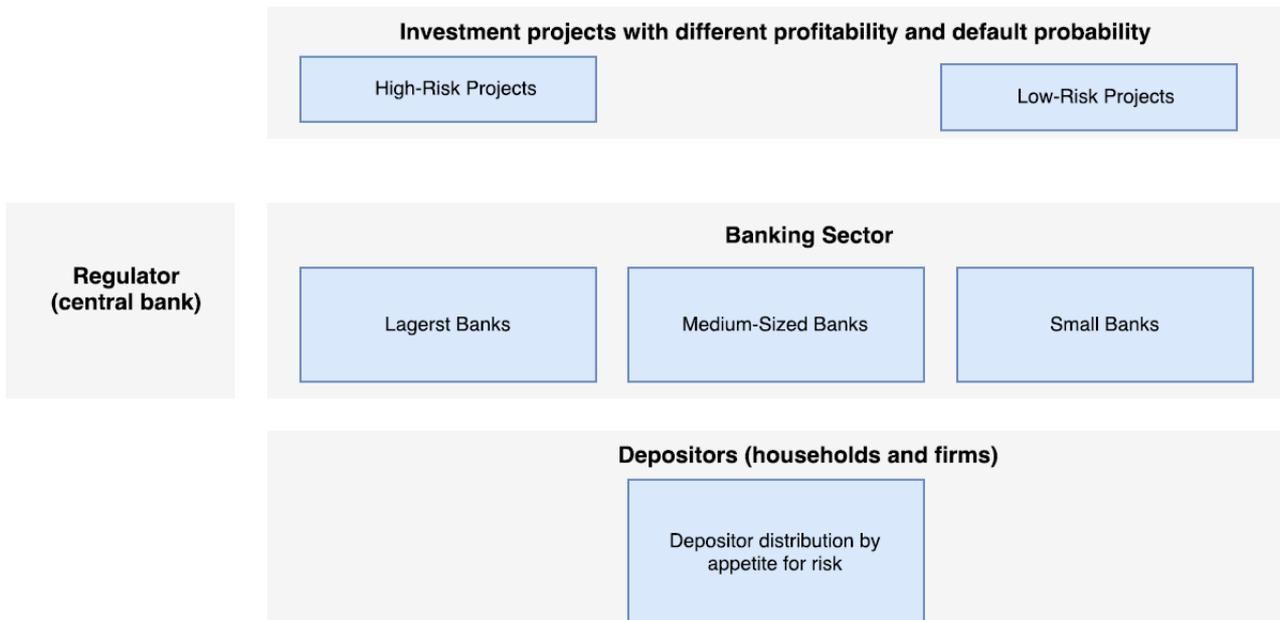
4. It is argued that the efficiency of the banking system's functioning in terms of ensuring credit availability will go down in the long term. Reduction of banking system tiers and the number of market niches where investment projects (borrowers) of different risk levels can find their creditors will result in insufficient credit creation .

Economic science still has no clear judgment on the negative consequences of reducing the number of banks on competition in the banking sector, just as on the optimal level of competition in the sector. In order to analyze the pros and cons of the proactive supervisory policy in Russia, we used a formal behavioural banking sector model where every bank seeks to maximize its profit. It is underpinned by the agent-based modelling approach that has been gaining popularity in economics and central bank policy analysis recently.

Brief description of the model

This section provides just a very brief description of the model logic and structure.

Agent-based models explain the behaviour of a system by simulating the behaviour of each individual 'agent' within it. In our case these are households and firms choosing banks for opening accounts and banks deciding whether or not to extend credits.. The agents themselves vary in behaviour parameters, so heterogeneity of agents is modelled.. The behavioural patterns are explored through a large number of simulations where the law of large numbers comes in. Figure 1 shows the overall design of the model.

Figure 1. Banking sector agent-based model flow chart

Labeling of bank groups is illustrative. Banks from different groups vary in their readiness to credit borrowers with high default probability and in their adherence to the capital adequacy requirement. It was assumed that, initially, Group 3 banks (that pursue the most risky crediting policy and do not seek to maintain capital adequacy) are smaller in size. Yet, over time, the size of banks in all groups might change.

The key block of the model is represented by the **banks** receiving deposits from households and firms and issuing credits to companies at different interest rates and with appropriate default probability. We identify two sources of bank profits in the model: deposits at a rate below the key interest rate and credits at a rate above the key interest one. Meanwhile, liability management decisions in the model are generally independent from the banks' asset management decisions. The only limitation for banks in expanding credit issue if such new credits meet the bank's credit policy in terms of risk level is compliance with the capital requirements (H1 analogue). This way, we abstract from the issues of liquidity management.

Banks vary in the size of capital (and hence assets) and the type of credit policy pursued. It is presumed that, initially, the Small Banks Group has the softest crediting terms. These banks provide loans to highly risky projects and keep issuing them even when the capital adequacy rate is not observed.

On the liability side, banks compete for depositors, trying to attract them by more favourable interest rates (as long as the rates remain below the key interest rate). The **depositors** themselves vary in their appetite for risk. Risk-tolerant depositors have more modest requirements in terms of bank size (as an observable indicator of risk for deposits with a bank) compared to more risk-intolerant depositors. A key characteristic of depositors is that news about bankruptcy of a bank (its license revocation) results in an increase in the requirements on bank size and a decline of trust in the banking system. Thus, license revocation contributes not only to deposit migration to other banks but also to deposit flight from the banking system, if the minimal bank size requirements rise enough.

On the asset side of the balance sheet, banks decide to accept or reject the received loan requests from projects with various profitability and a relevant risk level. For simplification purposes, it is assumed that all banks have adequate risk assessment. The credits issued by banks turn into deposits or cash.

Finally, there is a **central bank** in the model, which exercises bank inspections with a predetermined probability. It is assumed that the regulator withdraws the bank's license where a negative capital rate is identified. A small number of banks emerge in the system every moment. When setting up a new bank, its organizer realizes that the stiffer the regulator's policy, the shorter the bank's life cycle will be if it fails to adhere to the capital adequacy requirement. Consequently, in the proactive supervision scenario, the chance of spawning the Group 3 bank (the worst type) is smaller.

We have calibrated the model using the Russian banking system data so that it reflects the degree of concentration (in the Herfindahl index terms) on the deposits and loans markets prior to supervisory policy activation in mid-2013.

Since the model is stochastic (i.e., probabilistic), the results of different calculations of its dynamics will vary. However, according to the law of large numbers, with a great number of calculations, the systemic outcome is observable by averaging various random effects. It is the comparison of such averaged systemic effects under two supervisory policy scenarios that will constitute our results.

As a result of calculations in such a calibrated model, we have compared the key characteristics of banking system balance under two central bank policy scenarios: 1) proactive rehabilitation of the banking sector with subsequent pursuance of a proactive supervisory policy and stiff requirements on compliance with rates, and 2) preservation of a 'soft' supervisory policy. Special attention was paid to competition and banking sector efficiency characteristics.

Short-term loss and long-term gain: which is greater?

Appendix Figures 2–11 depict averaged developments of key banking system indicators prior to launch of proactive banking sector rehabilitation and the dynamics of those indicators after introduction of the proactive policy. The results of model simulations without any change in supervisory policy stringency are shown in blue, while with the results with the changed policy are shown in red.

Short-term consequences. More active supervision (Figures 2 and 3) leads to rather quick clearance of the banking system of mala-fide banks, in our case – banks with negative capital. Perceived risks of keeping deposits in all small and medium-sized banks grow in the short term, as do the requirements on bank size as an observable and simple indicator of bank bankruptcy risk. This results in a migration of deposits to larger banks and, to some extent, even funds drain from the banking system, for instance, into cash or foreign currency. As a consequence of this, the average deposit rate on the balance of small and medium-sized banks goes up, which reduces the profit of such banks. Reduced profit results in a lower capital of small and medium-sized banks, which, in the model, generally also pursue a more risky policy compared to larger banks, so this group becomes altogether more financially vulnerable in the short term. The opposite is observed with larger banks, which build up their profits and capital and can afford to expand their loans.

Eventually, the share of major banks in aggregate banking system deposits (Figure 4) and in aggregate credits (Figure 5) is projected to increase. Greater concentration is also registered by the growing Herfindahl index often used to measure it – Figures 6–7 for deposit and loan markets. Reduced competition for depositors is expressed in a lower deposit rate in the banking system – Figure 8. Reduced competition in the banking sector first leads to some upsurge in heterogeneity (variation by banks) of deposit rates – Figure 9. Higher variation of rates reflects heterogeneity of banks in terms of their competitive positions on the deposits market. Thanks to the inflow of depositors, major banks can afford to set lower deposit rates compared to others. Small banks facing an outflow of depositors, on the contrary, are constrained to offer higher rates to compensate for risk. As a result of the increasing role of bank size, price competition falls by the wayside, while major banks earn additional profits on the back of abundant and cheap liabilities. This profit actually shifts to them from smaller banks and from depositors. Lack of homogeneity is indicative of some other factors in the banking system, apart from price factors (the deposit rate), that drive the depositors' preferences. In a competitive banking system, the role of such non-price factors (such as difference in bank size) should be moderate.

The other short-term effect of proactive supervision is less availability of loans for borrowers with relatively high risk of default, expressed in a reduction of the average credit risk assumed by banks (Figure 10) and the maximum risk of approved loans (Figure 11). The reduction of maximum risk is driven by the 'wash-out' of the group of mala-fide banks that used to pursue an extremely soft credit policy. Average risk reduction is also caused by the inability of medium-sized bona-fide banks targeting this segment to provide loans owing to problems with capital induced by depositor outflow. Meanwhile major banks (according to the modelling assumptions) are less inclined to credit risky projects despite the growing capitalization.

Long-term consequences. In the long run, the regulator's proactive supervisory policy in all key areas improves the banking sector parameters compared to the situation without a rehabilitation policy. The fact that, in the long term, after the banking system is cleared of mala-fide players, the share of banks subject to license revocation falls virtually to zero, as opposed to the preservation of a stable share in the event of an unchanged soft policy (Figure 2), is an important result of proactive supervisory policy.

Key results:

A. Deposit base of small and medium-sized banks expands compared to the equilibrium values prior to the tightening of the supervisory policy . The share of deposits in major banks not only comes back to the levels prior to the system sanitation, but even goes below that – the depositor inflow into small and medium-sized banks is increased in the long term compared to the equilibrium in the event of a soft regulator's policy (Figure 4). This is driven by the fact that the smaller number of banks with negative capital and the decreased number of license revocations enhance depositors' trust in small and medium-sized banks and the banking system in general. By becoming generally safer and getting rid of the ballast of 'bad' banks, small and medium-sized banks become more attractive in the eyes of potential depositors than they could be without the banking system sanitation by the regulator.

B. Medium and small banks reinforce their positions in terms of capital, which allows them to expand their loan provision activity. The share of small and medium-sized banks in credit creation is growing. As a side effect of depositors returning to small and medium-sized banks, these banks build up their profits and increase capital

levels. The increased capability of medium-sized banks to earn on liabilities translates into development of their capability to profit on the assets side. This enables small and medium-sized banks to build up loans provision (as they are less constrained by capital requirements). **As in the case of deposits, capital and credit creation by small and medium-sized banks is higher in the new equilibrium** (Figure 5).

C. As opposed to the period of ‘soft’ supervisory policy, profits shift from major banks to small and medium-sized ones. The long-term growth of trust in small and medium-sized banks in case of proactive banking system sanitation results in a decreased role of bank size as a critical factor of depositors’ choice of bank for placing their deposits. Price competition, coupled with competition in service quality, moves to the forefront. Engagement of small and medium-sized banks in such competition for depositors on a par with major banks leads to escalation of competition and consequently an increase in the average deposit rates in the banking system (Figure 8) in the first place, and, second, greater homogeneity of those rates. Reduction of deposit rate variation between banks becomes pronounced – Figure 9. The deposit spreads halve. Such homogeneity is a good indicator of price competition fierceness, since it reflects low significance of other factors that give advantages to certain (major) banks in terms of the cost of attracting deposits. The upsurge in deposit rates together with the growth of rate homogeneity means that the extra (monopolistic) profit of major banks after introduction of a proactive supervisory policy is redistributed to small and medium-sized banks. The Herfindahl indices of deposit and credit market concentration halve – Figures 6-7.

D. Credit availability for borrowers is not going down (the average credit risk of the system remains unchanged). The maximum risk assumed by banks (maximum default probability of all projects approved by banks) remains at a lower level in the long-term balance – Figure 11. This is indicative of the fact that the banking system still refrains from assuming excessive risks after the elimination of the banks that pursued such a policy. Conventional banks worldwide do not constitute any significant sources of high-risk project loans provision (venture financing), so our results are rather realistic in this context. That said, in the long term, the average risk assumed by banks (weighted average default probability of approved investment projects) recovers to the level recorded prior to introduction of the proactive supervisory policy – Figure 10. On the back of the reduced maximum assumed risk, the rise in the average risk level reflects an increase in the unit weight of medium-sized banks in crediting. In our model, those banks generally pursue a milder crediting policy compared to major banks. In a system like that, not only the initiatives with minimal risk usually dedicated to major investment projects become eligible to crediting.

E. Financial sustainability of the Small and Medium Banks Group is improved. In the long term, the share of banks with negative capital sets to zero, while without a sanitation policy it remains unchanged – Figure 3. The formerly permanent ‘share of bad banks posing the threat of a domino effect and large-scale crisis of trust in bona-fide banks and the entire banking system is eliminated. Medium and small banks reinforce their positions in terms of capital, obtain fairer (more competitive) access to deposit and credit markets. The overall system becomes healthier.

Conclusions

The license revocation policy generates a wide range of significant positive long-term benefits. It promotes competition and ultimately benefits bona-fide banks by improving their financial sustainability. It is a win-win for both depositors and borrowers, especially small and medium-sized business.

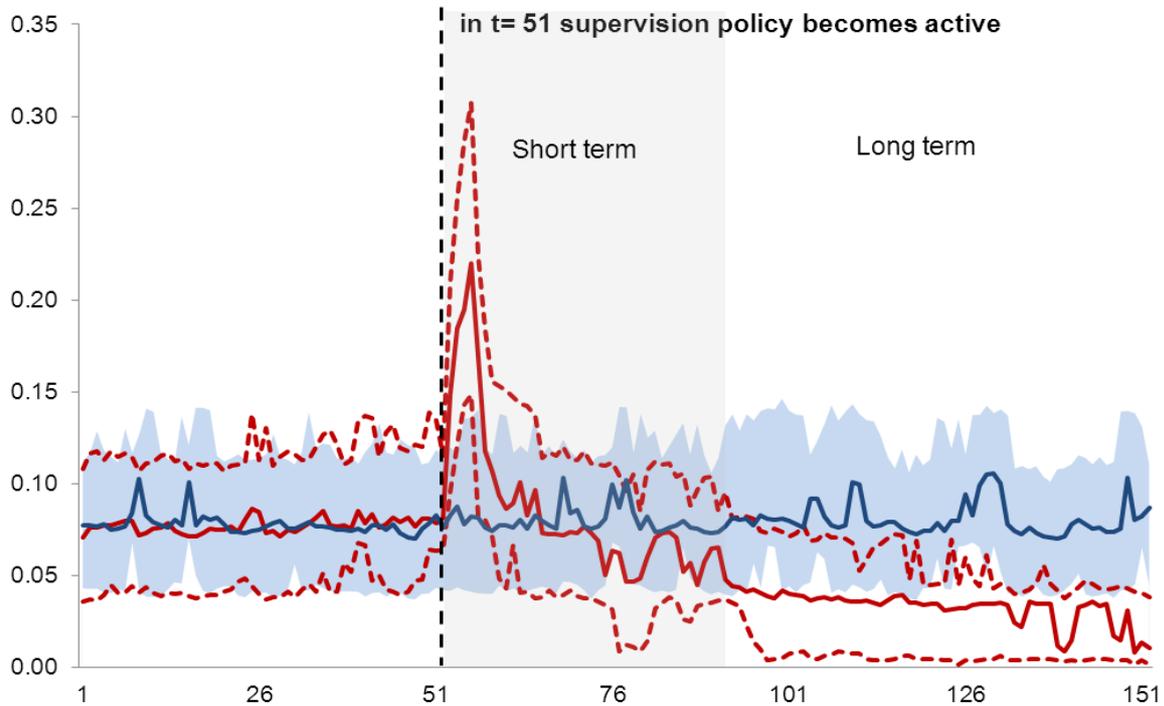
In order to mitigate short-term negative consequences, it is necessary to contain the negative impact of banks on one another. It is critical to determine the optimal speed of banking system sanitation.

In light of the results obtained, it is very important for small and medium-sized banks during active system sanitation to make it obvious to their customers that their bank is a 'good', not 'bad', mala-fide one. This can, in particular, result in greater information disclosure by bona-fide banks, their striving for openness and transparency, primarily as far as the capital rate observance is concerned, as well as in engagement of real economy crediting.

Since greater openness does not eliminate the problem of false information disclosure by mala-fide market players, there should be increasing requirements on bank rating in terms of reporting quality, including by the regulator, with subsequent public disclosure of rating results. The priority in this should be providing the public with fair and unbiased information about credit institutions without fear that such information disclosure might create problems for the banking system or for specific banks and induce 'depositor flight'.

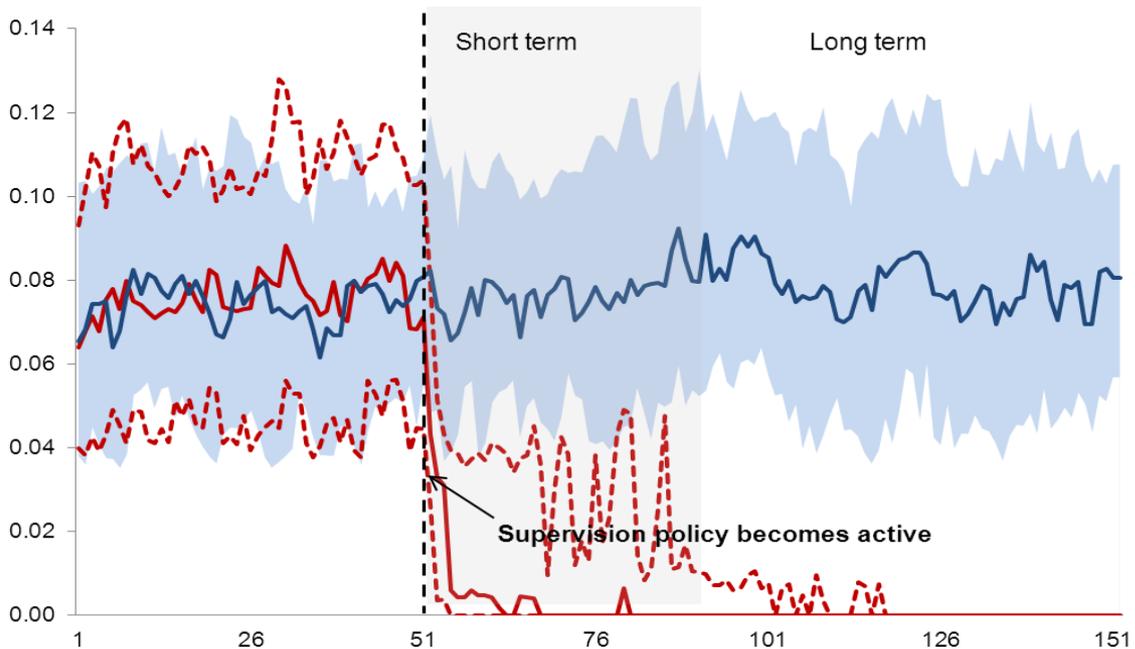
Annex

Figure 2. Share of banks with revoked licenses over four periods in the total number of banks since the start



Source: hereinafter, authors' calculations

Figure 3. Share of banks with negative capital



Note: equilibrium share of 8% is the model assessment. It indicates that there are around 8% of banks with negative capital in the system at any one time, but those are not necessarily the same banks in two different instances.

Figure 4. Share of deposits in Group 1 Banks (Major Banks)

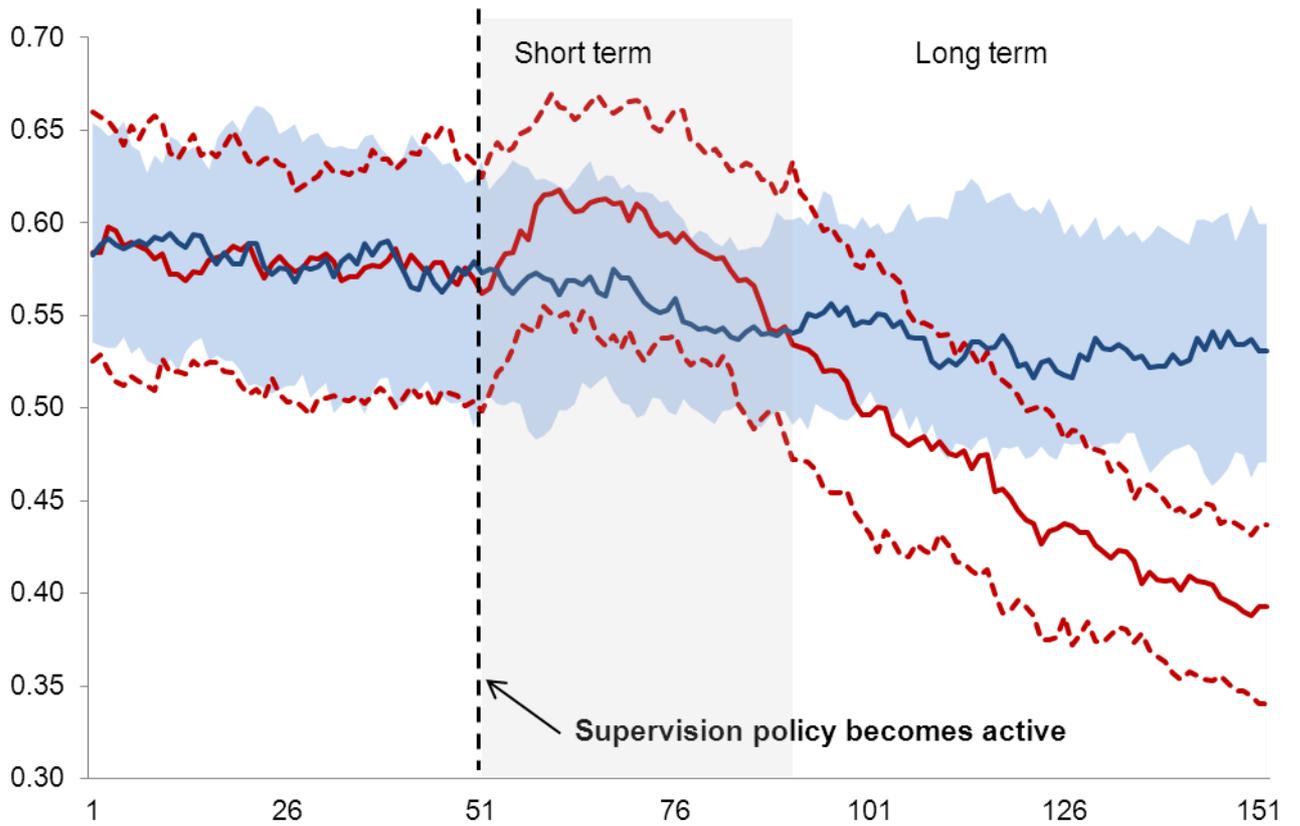


Figure 5. Share of loans of Group 1 Banks (Major Banks)

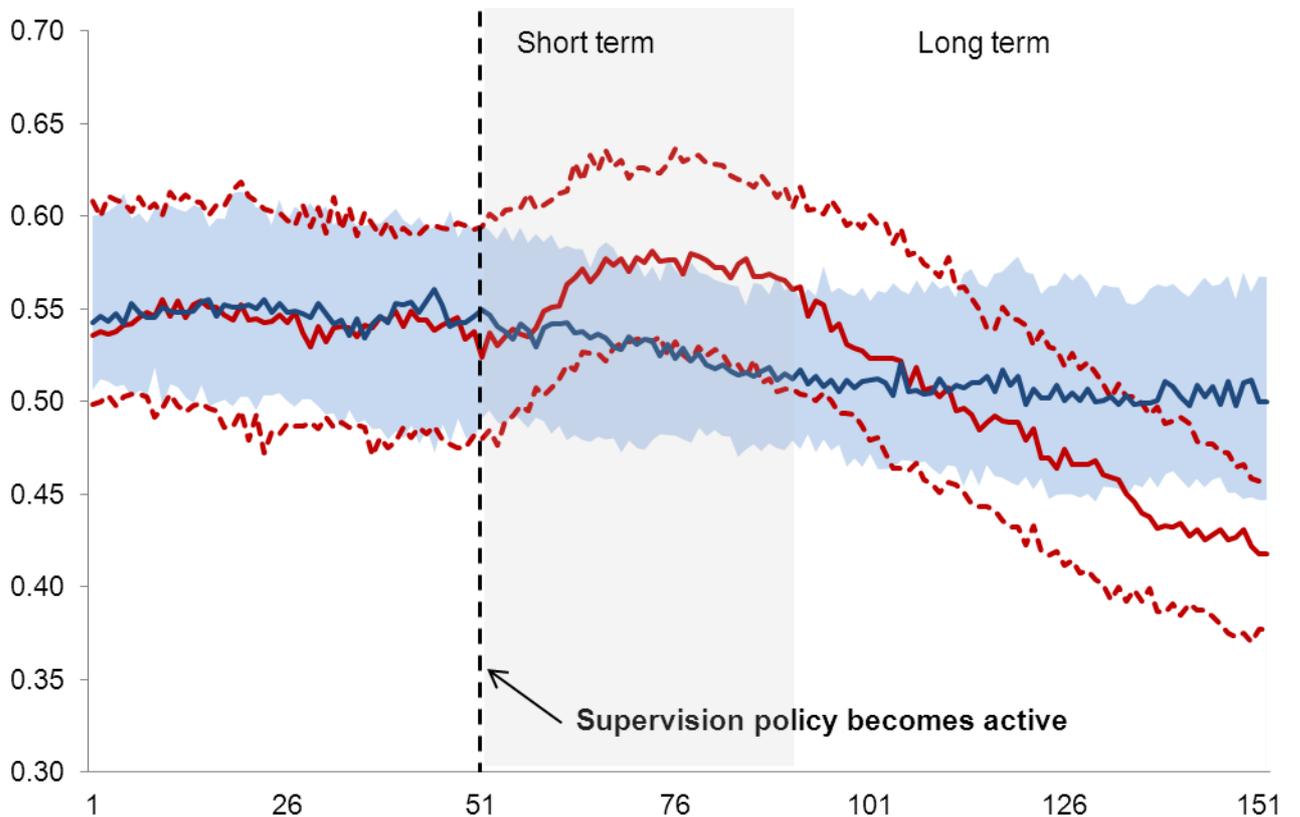


Figure 6. Herfindahl index for the deposit market

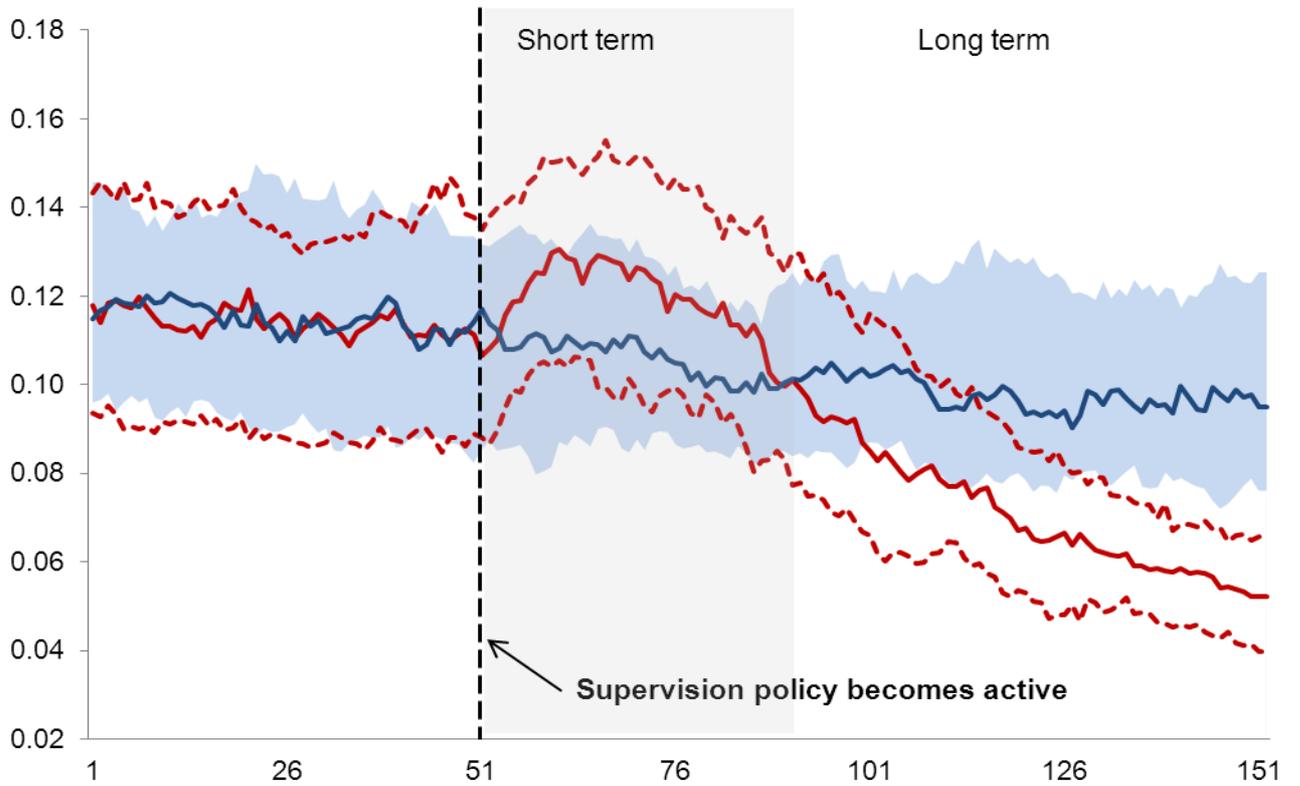


Figure 7. Herfindahl index for the credit market

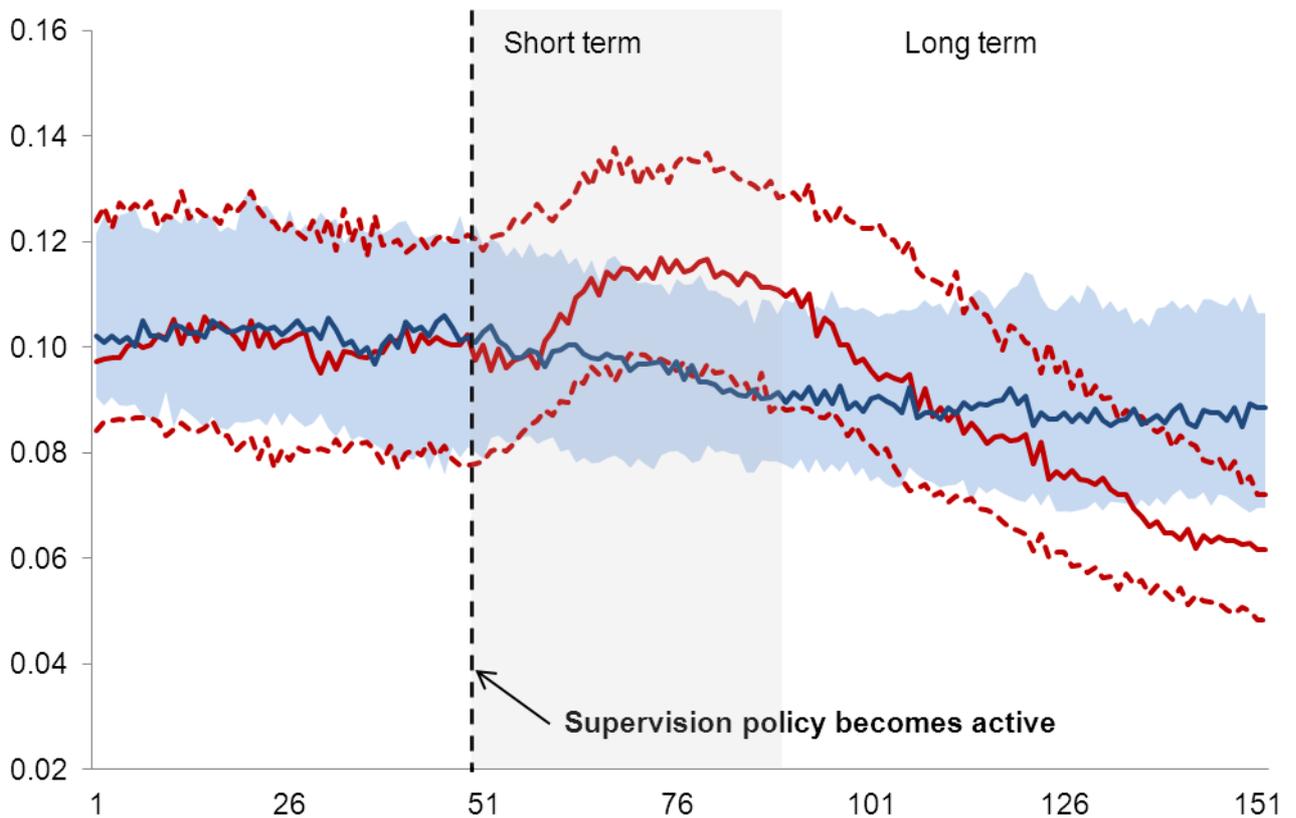


Figure 8. Average deposit rate in the banking system, % per annum

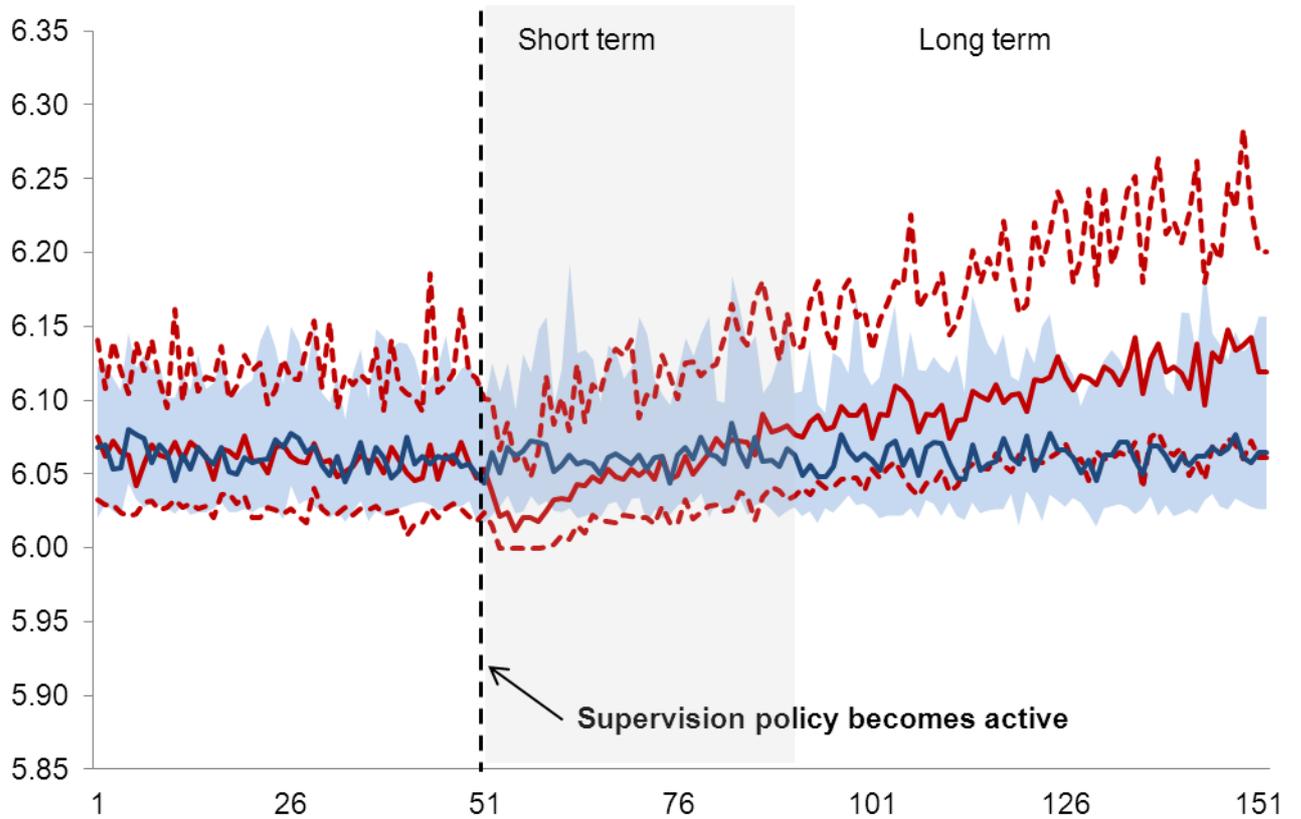


Figure 9. Variation (standard deviation) of bank deposit rates, p.p.

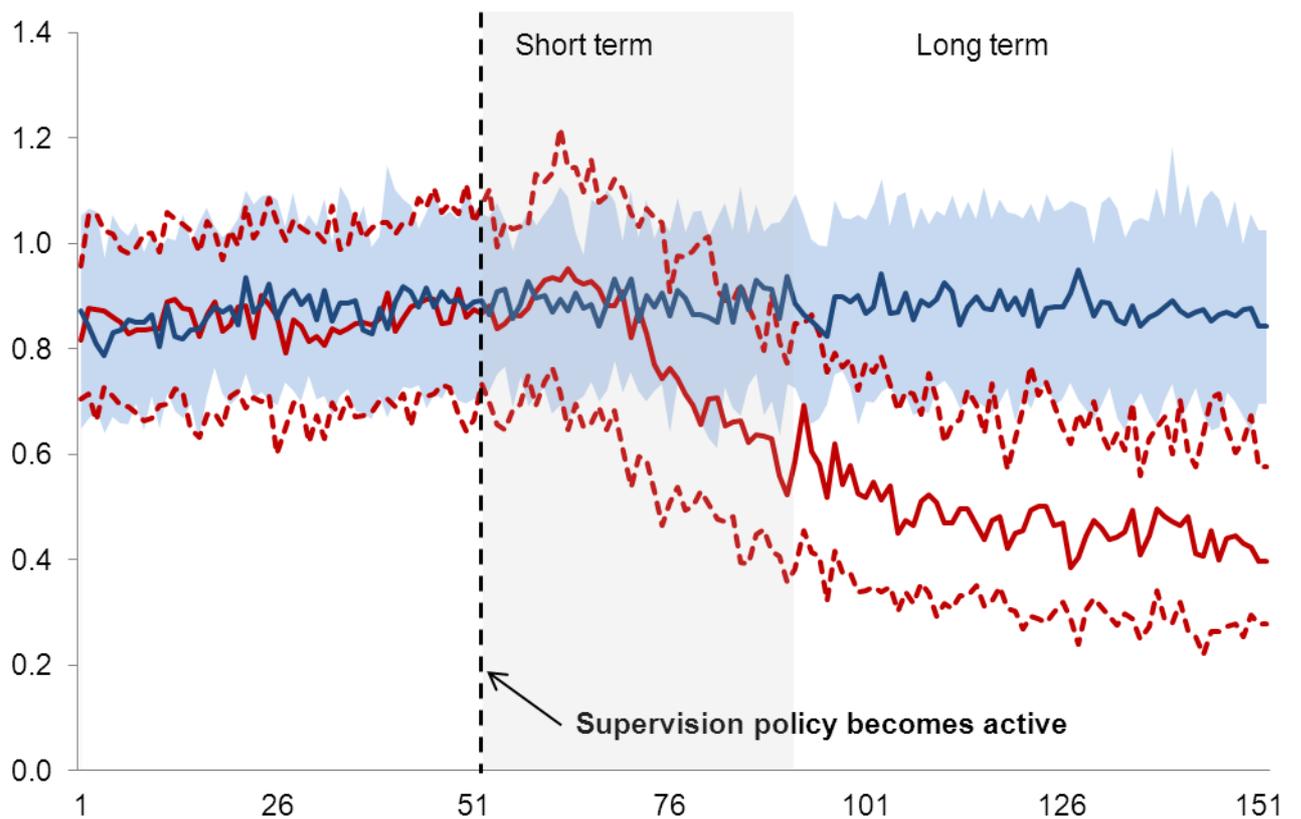


Figure 10. Average risk of credit default

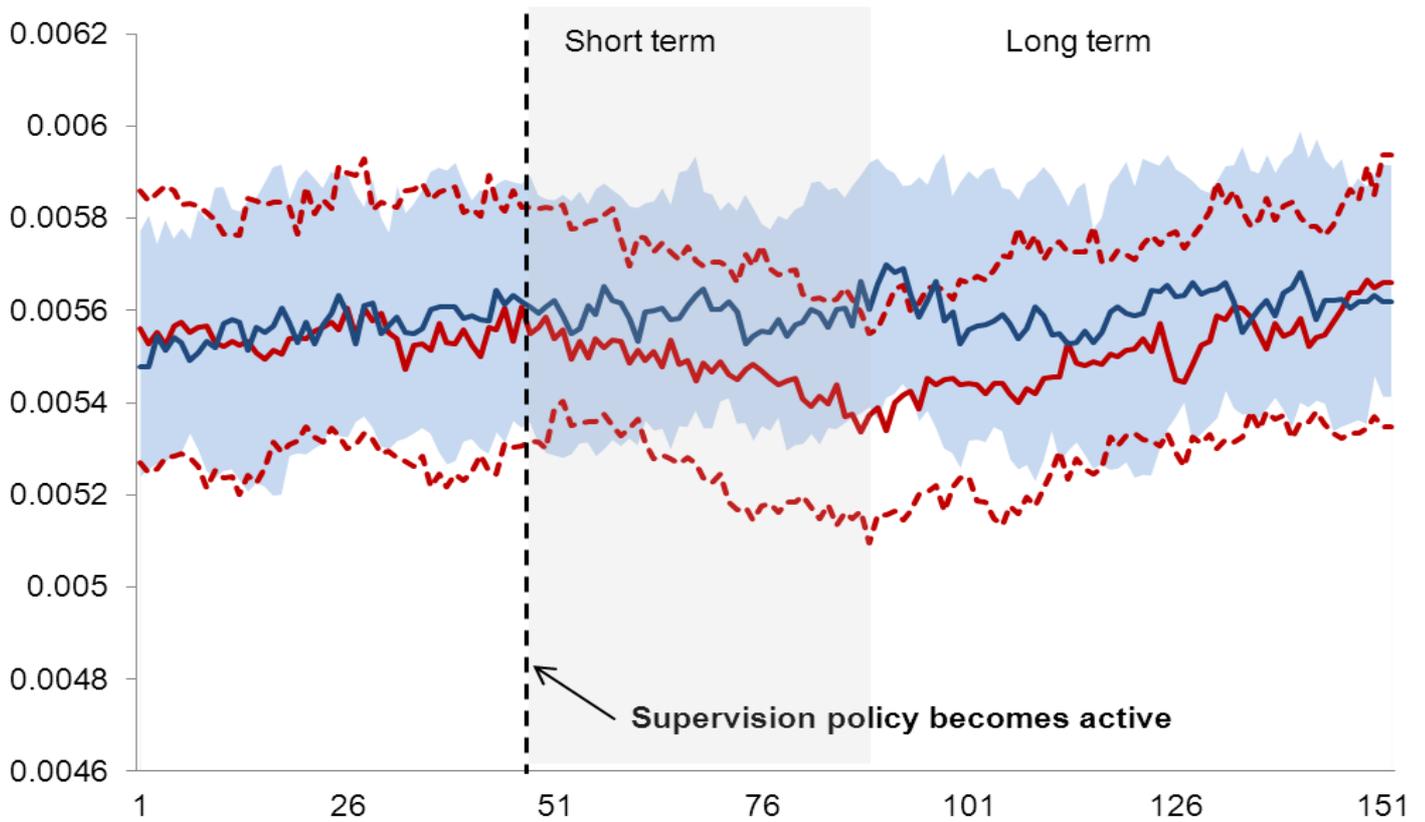
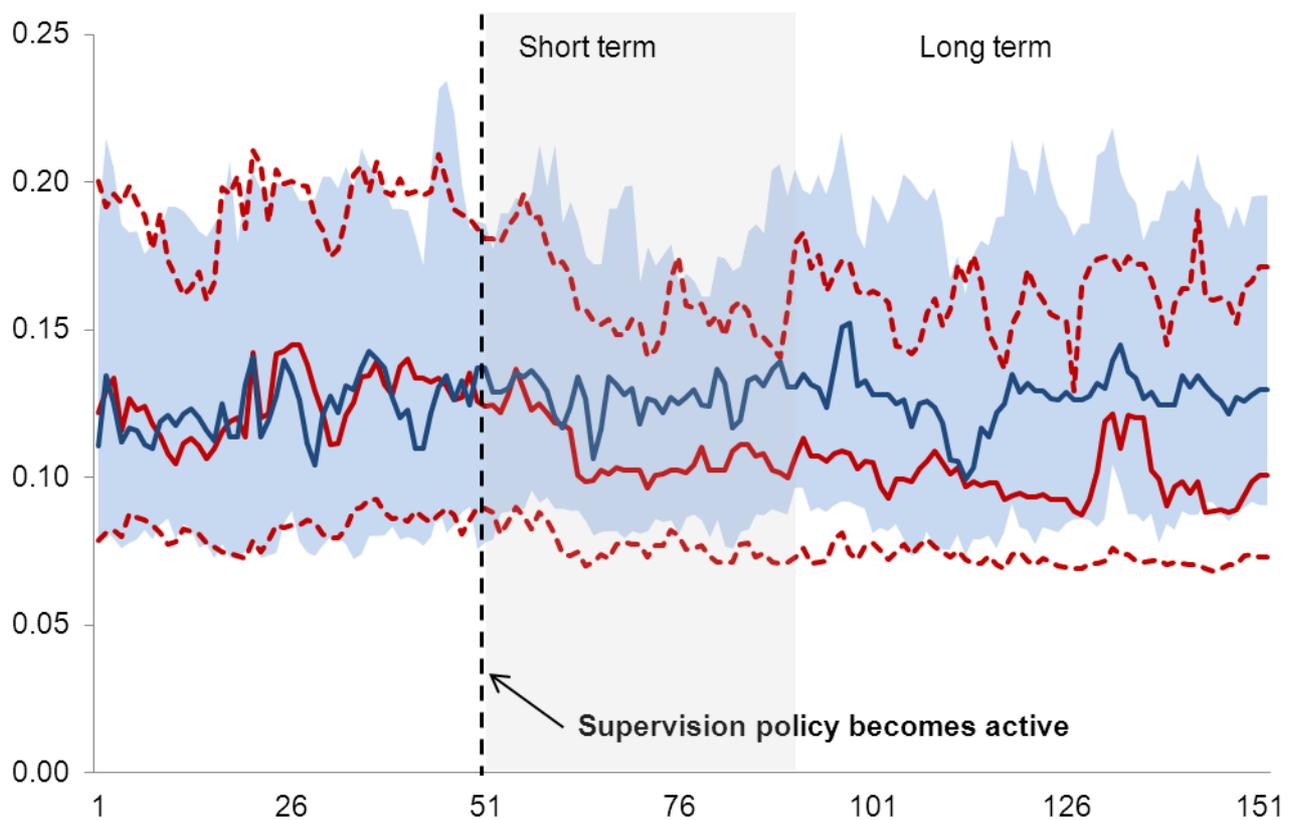


Figure 11. Maximum risk of credit default



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