Journal of Banking & Finance 33 (2009) 2253–2266

Contents lists available at ScienceDirect

Journal of Banking & Finance

journal homepage: www.elsevier.com/locate/jbf

Announcements and the effectiveness of monetary policy: A view from the US prime rate

Teruyoshi Kobayashi *

Department of Economics, Chukyo University, 101-2 Yagoto-honmachi, Showa-ku, Nagoya 466-8666, Japan

ARTICLE INFO

Article history:
Received 31 August 2008
Accepted 2 June 2009
Available online 7 June 2009

JEL classification:
E44
E52
E58

Keywords:
Prime rate
Federal funds rate
Policy transmission
Transparency
Menu costs

ABSTRACT

Until 1994, the US prime rate was said to be sticky because of its irresponsiveness to short-term interest rates. After the Fed started the practice of announcing its intended funds rate in 1994, however, the prime rate has come to react immediately to shifts in the target rate. This paper attempts to explain how the Fed's policy announcements changed the behavior of the prime rate by using a simple menu cost model. It shows that an increase in the expected duration of funds rate targets was essential to the improvement in the target rate pass-through.

1. Introduction

In the 80s and the early 90s, a lot of attention was paid to the prime rate stickiness in the US. At that time, the US prime rate was considered to be determined based upon various market interest rates such as the Federal funds rate, CD rates, and T-bill rates. Many empirical studies were conducted in an attempt to explain the source of sluggishness in the response of the prime rate to those market interest rates (e.g., Goldberg, 1982; Forbes and Mayne, 1989; Mester and Saunders, 1995).

Since 1994, however, adjustments of the prime rate have been synchronizing with shifts in the Federal funds target. In response to a shift in the target rate, the prime is moved in the same amount within a few days of the corresponding FOMC. This implies that policy effectiveness has greatly improved since the prime rate is used as a base rate in many of the loan contracts. The empirical models of the sticky prime rate proposed by the early studies cannot account for such one-to-one correspondence between the prime rate and the target rate. Nevertheless, to the best of my knowledge, no formal explanation was given for this phenomenon.[1]

This paper attempts to explain the reason why the prime rate has become "flexible". To this end, it should be kept in mind that there were some noticeable changes in the Fed's practice around 1994. The most obvious institutional change is the start of policy announcements, which was first made at the February 1994 meeting. Before that meeting, the FOMC did not used to disclose to the public whether the intended federal funds rate was changed or not, and because of this secrecy, the FOMC's intention was sometimes misperceived by market participants. The FOMC started announcing the change in the intended funds rate and its rationale after a meeting at which policy actions were implemented. Recently, many studies have investigated the influences of such an institutional change by closely looking at the behavior of market interest rates, such as the T-bill rates and futures rates. For instance, Lange et al. (2003), Poole and Rasche (2003) and Swanson (2006) argue that the predictability of future policy shifts that can be computed from the Federal funds futures or the euro dollar options has significantly improved since February 1994. Demiralp and Jordà (2004) also provide statistical evidence that there was a structural break in February 1994 in the response of T-bill rates to the Federal funds target.[2] Given the results of these studies, it is natural to infer that the structural change in the behavior of the prime rate that occurred in 1994 bears some relation to the start of the Fed's practice of announcing its target.

* Tel./fax: +81 52 835 7943.
E-mail address: kteru@mecl.chukyo-u.ac.jp

[1] Sellon (2002) argues that the improvement in the response of the prime rate was due to the increased competition for business loans among financial institutions or to the greater transparency of monetary policy. However, his argument is not based on a formal analysis.

[2] Goeij and Marquering (2006) also point out that there was a structural break in 1994 with regard to the volatility of the 1-year Treasury bond.

0378-4266/$ - see front matter © 2009 Elsevier B.V. All rights reserved.
doi:10.1016/j.jbankfin.2009.06.002

However, there are several other aspects that should be taken into account aside from the beginning of policy announcements. First, most of the policy shifts before 1994 were decided outside the regularly scheduled FOMC meetings. In fact, prior to 1994, only about 30% of all the policy shifts were made within 7 days of the last scheduled meeting. According to Thornton (2004a), only 27 out of 94 policy changes were made at the regularly scheduled FOMC meetings in the pre-94 period. Second, the volatility of the spread between the effective funds rate and the target rate has been significantly reduced since 1994. Although there is some debate as to whether this phenomenon is due to an advancement in the Fed's controllability ("open market operation") or to an "announcement effect" ("open mouth operation"), it should be taken into account the fact that the volatility of the spread has been largely reduced.[3] Third, the average duration of a newly changed target has been considerably increased since 1994. The average number of weeks between policy shifts was 5.8 in the pre-94 period and 13.3 in the post-94 period, as of March 2007.

The main findings are as follows: first, the response of the prime rate to the funds rate over the entire sample period can be well captured by a simple menu cost model once the abovementioned differences in the Fed's practice are taken into account. Second, according to the stochastic simulations, neither secrecy in the numerical funds rate target nor uncertainty in the timing of policy shifts was a major cause of the prime rate stickiness before 1994. Third, the volatility of the effective funds rate had a non-negligible effect on the response of the prime rate. That is, the greater the volatility of the effective rate, the less frequently commercial banks would react to shifts in the target rate. Finally, an increase in the average duration of targets seemed to have the largest influence on the improvement in the response of the prime rate. Intuitively, if the target rate after the current policy shift is expected to be kept unchanged for a sufficiently long time, then the prime rate will immediately follow the current policy shift. In contrast, if the next policy shift is expected to be carried out in the immediate future, then commercial banks will tend to hold back from reacting to the current policy shift and wait for the next policy shift.

2. The relationship between the prime rate and the Federal funds rate: Comparing the pre- and post-1994 periods

This section summarizes several features of the relationship between the Federal funds rate and the US prime rate in the pre- and post-1994 periods, respectively. I focus on the date of February 1994 because many previous studies indicate that it was the special date for the Fed's policymaking. Differences in the Fed's policy practices between the pre- and post-1994 periods are also noted.

2.1. The data

The data on the prime rate and the effective funds rate have been taken from the Federal Reserve Statistical Release: H.15 Selected Interest Rates, which are also available from the FRB St. Louis FRED data base. This is the rate posted by a majority of the top 25 (by assets in domestic offices) insured US-chartered commercial banks. While the US prime rate data is also published by the Wall Street Journal, the difference between the two is negligible.[4]

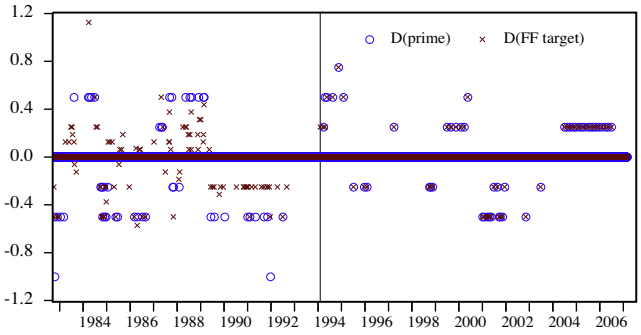

Fig. 1. Daily changes in the prime rate and the funds rate target (percentage points per annum).

Throughout the paper, the "pre-1994" period refers to the period from September 27, 1982 to January 31, 1994, and the " post-1994" period is from February 7, 1994 to February 28, 2007. February 7, 1994 is the first Monday since the February 4 meeting. The choice of the starting date of the pre-1994 period follows from Thornton (2005), who argues that the Fed has been virtually targeting the funds rate since September 1982. The FF target data before February 1994, which originated with Thornton's (2005) work, is now available from the FRED data base.

2.2. The degree of pass-through

Since 1994, the premium of the prime rate over the FF target has been kept constant at 3%. Fig. 1 illustrates daily changes in the FF target and the prime rate, and Fig. 2 shows differences in weekly changes between the prime rate and the FF rates. As is clear from these figures, the prime rate has been immediately and almost completely adjusted to shifts in the target rate since February 1994.[5] In other words, the pass-through from the target rate to the prime rate has been almost complete since February 1994.

Fact 1. *Shifts in the FF target rate have been almost completely passed through to the prime rate since February 1994.*

Not only has the response of the prime rate to the target rate improved, but the relationship between the effective rate and the prime rate has been more closely correlated since 1994 than before. In fact, the *F*-test rejects the null hypothesis that the variances of weekly differences between changes in the effective rate and the prime rate are the same between the two periods. The *F*-value is 7.46 ($p = .000$). The null hypothesis is still rejected even if large fluctuations for which the daily deviation of the effective rate from the target is greater than 1% are excluded. This fact can be summarized as follows:

Fact 2. *The relationship between the effective FF rate and the prime rate is closer after February 1994 than before.*

Next, let us look at the size of the prime rate changes. As can be seen from Fig. 1, .5% prime changes (in absolute value) were more frequently observed than .25% changes in the pre-94 period. Specifically, the ratio of the number of .25% prime rate changes to the total number of prime changes is only .213, while the ratio of the number of target changes that are less than or equal to .375% to the total number of target changes is .756. This implies that .5% prime shifts were chosen "too often". Interestingly, this phenomenon is quite consistent with what the standard menu cost model suggests.

[3] See, for example, Guthrie and Wright (2000), Taylor (2001), Demiralp and Jordà (2002), Thornton (2004b) and Nautz and Schmidt (2009).

[4] The only differences between the two data after 1982 are as follows: the prime rate data published by the Fed report that the prime was changed on February 25, 1983 (from 11% to 10.5%), June 25, 1984 (from 12.5% to 13%) and October 29, 1984 (from 12.5% to 12%), while the Wall Street Journal (WSJ) reported that the dates of the corresponding shifts were February 21, 1983, June 26, 1984 and October 24, 1984, respectively. The WSJ prime rate is changed when 23 out of 30 largest American banks have changed their prime lending rate.

[5] The only exception was April 1994, when a .25% increase in the FF target was followed by a .5% increase in the prime rate.