

**Socio-Political Determinants of Bank Spreads and Deposit Growth:
The Case of Bolivia**

by

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Abstract

Using Bolivian's experience with the announcement of the zero-coca policy in 1998, we examine the significance of this event on the determination of bank deposit growth and bid-ask spreads during 1998-2002. The results show that progress in coca eradication policy reduced bid-ask spreads, but social and political instability associated with the initiation of the zero coca policy both widened bank spreads and reduced U.S. denominated deposits. The results also show that resignation and presidential elections news moved the market significantly. These findings suggest that socio-political events can affect the dollarization process.

Key words: Bid-ask spreads; Bolivia; dollarization; social and political unrest; zero coca policy.

I. Introduction

During the 1980s, Bolivia was one of the world's largest producers of cocaine along with Colombia and Peru. Traditionally, the production of leaf of coca in Bolivia was legal and it was widely consumed and used to make cocaine. Particularly during the 1980s, it is argued that drug-lords and dealers created a large demand for coca.¹ In the 1990s, the Bolivian and U.S. governments, through the help of FELCN (the Spanish acronym for *Special Force of Fight Against Narco Trafficking*) and the Drug Enforcement Agency (DEA), initiated a program to destroy cocaine laboratories and eradicate coca plantations. The U.S. government offered substantial financial support and military advice. As part of this policy and under U.S. pressure, the Bolivian government adopted a policy of *zero coca* in the beginning of 1998. By 2002 or before, the production and commercialization of cocaine was considerably reduced and coca plantations were, for the most part, eradicated. Coca-growers witnessing a significant reduction of their plantations resisted to the zero coca policy. The forced eradication, unemployment, and a lack of alternative opportunities for coca-growers aggravated the conflict.

The coca growers union, a powerful political figure, resisted the eradication policy and encouraged new cultivations. They protested the eradication, using roadblocks and demonstrations, which resulted in violent confrontations between the protesters and police officers and/or military troops. The resistance became more intense when Evo Morales, the leader of the coca-growers, who had become a congressman in 1997, decided to run for presidency in the elections 2002. His decision, in most part, was linked to the coca war policy. He received significant support and finished the election second, behind Gonzalo

Sanchez de Lozada, the former president and a pro free-market candidate. However, because no candidate received the majority of the votes, the law required that the Congress had to make a final decision for the selection of the new president. Thus, Morales had a chance to win. All these events and then the deliberations in the Congress likely raised uncertainty in the financial markets.

The country experienced another political turmoil in 2001. During his fourth year, President Hugo Banzer was diagnosed with cancer. His health deteriorated quickly and visibly. In the first week of July 2001, he traveled to the U.S. for medical treatment. In his absence, the vice-president, Jorge Quiroga, was temporarily in charge. Due to the seriousness of the president's illness, business leaders urged him to resign. However, Banzer's immediate and negative response caused concerns. Opinions about his resignation varied in the administration; some opposed to it, while others wanted that he is replaced by the vice-president. Even some asked for early elections. During the last week of July, following some weeks of uncertainty, Banzer decided to resign, and he was replaced by the vice-president Quiroga who took office in August 7th, 2001.

These three political events, namely the coca war, Banzer's resignation after his illness, and the involvement of Morales in the 2002 presidential elections, occupied the headlines of the Bolivian media during the period from 1998 to 2002. The zero coca policy produced a sudden and dramatic four-year decline in Bolivia's illegal coca crop and hence Bolivia became a relatively small supplier of coca for cocaine. Bolivia's illegal coca production fell over the next 4 years by as much as 90%. The impact of the eradication on commercial bank business remains controversial, however, because of its impact on the

¹ For a discussion of coca and drug dealing in Bolivia, see, among others, Leons and Sanabria (1997) and Sanabria (1993).

degree of the political stability of the country as well-organized coca growers unions had resisted to the policy by blocking roads, harassing police eradicators, and using violence to protest the policy. On the one hand, “progress” on the eradication of coca would favorably affect the banking system, causing lower spreads. Yet, the increased political turmoil due to the massive eradication of coca plants and job (income) losses would hurt bank deposits and raise spreads. Hence, the net impact of the zero coca policy on deposits and spreads is an empirical issue. In this paper we investigate the effects of the zero coca policy on commercial deposit and bid-ask spread behavior in Bolivia during this four-year period (1998-2002). Changes in bank spread directly affect the cost of bank intermediation. Hence, our results have important policy implications.

The motivation of this paper is twofold. First, there is scant work linking commercial bank behavior to political risk, particularly for Latin American countries. We believe that the political events took place during the implementation of the zero coca policy during the 1998-2002 period may provide important insights on the economic significance of political factors driving commercial banking market behavior. Brock and Suarez (2000) investigate the economic determinants of banks spreads in some Latin American countries. They report that macroeconomic uncertainty raises bank spreads, which are more correlated with lending rates than those of deposit, suggesting that the changes in spreads are to a large extent driven by movements in the former, rather than fluctuations in the latter. Second, this paper extends the earlier studies regarding coca-dollars in Latin America. Melvin and Ladman (1991) model the relationship between dollarization and coca production in Bolivia and show that the seasonality of the coca harvest and cocaine production are likely to be a relevant cause for the dollar-denominated

loans in the major coca-producing region of Bolivia, the Chapare. They concluded that the illicit trade of coca, supplying an important quantity of dollars to the economy, contributes to the dollarization process in Bolivia. Melvin and Peiers (1996) report that inflow of dollars from illicit coca and cocaine trade contributed to the dollarization in Latin America. An important question we ask in this paper is whether the zero coca policy reduced the US dollar denominated deposits in Bolivia.

.In section II we describe our methodology and data used. Section III presents our key empirical findings, while section IV discusses the policy implications of the findings and concludes the paper.

II. Construction of news and methodology

We collected news related to the coca war, the illness of the former president Banzer, and the elections of 2002.² The category *coca war* contains two related events: (i) progress in eradication of coca plantations. Financial assistance from the U.S. is included as part of the progress news, because such funds have been used to assist involved government units in the form of military training and equipment in their efforts against drug dealings and, second, they also contributed to the substitution of coca for alternative crops. In the latter case, many coca-growers received financial compensation for eradicating and changing coca plantations, and (ii) socio-political violence such as protests and demonstrations, roadblocks, and violent confrontations between the police/military and the public. These two events may affect the banking sector differently. An increase in violence may be perceived as an increase in the degree of country's political instability, while

² News data are collected from the Bolivian newspaper La Razon, www.la-razon.com. To ensure reliability, event dates are cross-checked using BBC, www.bbc.com and CNN news, www.cnn.com.

progress in eradication may reduce income and hence deposits. Hence, in estimations, we divide all coca war news into *violence* and *progress* in eradication.

Presidential news regarding Banzer includes *cancer news*; the post-illness period, reflecting the leadership uncertainty, (*presidential uncertainty*), Banzer's resignation (*president resignation*); and the announcement of the vice president as the new leader (*vice-president*).

Election 2002 news is divided into four periods: *pre-election*, *election week*, *post-election period*, and a *new president in office*. The post-election period is important because the Congress had to vote for presidency as neither candidate received the majority of votes. The discussions in the Congress lasted till first week of August, following the public election, ended on the week of July 5th.

Consequently, we employ the following model in our estimations:

$$y_t^i = \beta_0 + \beta_1(\text{coca war violence})_t + \beta_2(\text{progress in eradication})_t + \beta_3(\text{cancer news})_t + \beta_4(\text{presidential uncertainty})_t + \beta_5(\text{president resignation})_t + \beta_6(\text{vice-president})_t + \beta_7(\text{pre-election})_t + \beta_8(\text{election week})_t + \beta_9(\text{post-election period})_t + \beta_{10}(\text{new president})_t + \gamma_i \sum_{j=1}^k y_{t-j}$$

Eq. (1)

where y_t^i represents the following two dependent (i=2) variables:

- Deposit growth, measured by taking the log-difference of the level of deposits expressed in US dollars: Model (1)
- Bank spread between lending (ask) and deposit (bid) interest rate in US dollars: Model (2)

We include up to four lagged dependent variables in each model to remove potential serial autocorrelation.³ Political variables take a value of 1 when there is a related event and zero otherwise. In all estimations the event week, rather than the week in which particular news is reported, is utilized.

Coca war violence, which may reduce the perceived stability of the country, is expected to raise the ask-bid spread as lenders charge a risk premium through higher lending rates. We also expect a decline in deposits due to increased instability, as investors switch to alternative investments. Progress in eradication in coca production lowers income level in the economy, which may negatively affects deposits. If investors may perceive eradication as a positive event because prospects of drug dealing and associated money laundering are expected to decline, signaling a lower perceived risk, we expect a decline in the ask-bid spread.

As far as Presidential news regarding Banzer, *cancer news*, *presidential uncertainty*, and *president* resignation are expected to cause a decline in deposits and widen the spread because they indicate macroeconomic and political uncertainty in financial markets, while the announcement of the vice president as the new leader produce higher deposits and lower spreads to the extent that such news calms markets. Regarding Election 2002 news, *pre-election*, *election week*, and *post-election period* news raise the uncertainty, causing lower deposits and higher spreads, while a *new president in office* should bring about an opposite impact.

³ This lag selection is based on both the Akaike's criteria and obtaining white noise residuals.

III. Data and empirical results

The eradication of coca plants became more intense in late 1998, due to the gradual implementation of the zero- coca policy. It is therefore important to use a sample period that capture this period. In addition, high frequency data are necessary to better capture the impact of political factors. Weekly data are available for our sample period. Due to the high dollarization of the economy, we utilize data on average deposit and lending rates, and total bank deposits all in US dollars.⁴ Data on dollar deposit rates available from January 1st of 1998, while data on bank deposits in US dollars are available from Jan 1st, 1999. Finally, data on dollar lending rates are available from October 1st of 1999. All data end on September 6th of 2002.⁵

Deposit growth

First column of Table 1 reports the results for deposit growth⁶ Out of our two coca war news, violence and progress in eradication⁷, the former is associated with a statistically negative impact on deposit growth only. When we look at the impact of Banzer news, all news variables have a statistically significant impact on deposits. Cancer news, which took place during June 30-July 6, 2001, presidential uncertainty period, which covers the period from July 7 through July 27, 2001 till the announcement of President's resignation, and resignation news (the week of July 28-August 3) all bring about a decline in deposits by about 0.29, 0.69, and 0.53 percent, respectively. News during the week of August 4-10,

⁴ According to the Bolivian Central Bank, about more than 90 % of the deposits in the banking system are held in U.S. dollars, indicating the highly dollarized nature of the economy. For earlier estimates of the stock of U.S. dollar currency held in Bolivia, see Melvin and de la Parra (1989).

⁵ All data obtained from the Bolivian Central Bank.

⁶ All estimations are based on the OLS approach with white heteroskedasticity-consistent standard errors and covariance. Unit root tests indicated that spread and deposit growth series are stationary.

⁷ There were a total of 16 "violence-related" events and 7 "progress in eradication" news.

2001 about the vice president taking a new leadership role raises deposits by close to 1.0 percent.

The 2002 elections news has the largest economic impact on deposits, compared to the rest of political news. We find that pre-election (June 7 through June 28), election week (June 29-July 5), and post-election periods (July 6-August 2) are significant and negative, bringing about a decline in deposits by about 0.89, 2.81, and 0.89 percent, respectively. We note that these variables are linked to the coca war, and the post-election period variable likely reflects the uncertainty about the winner between the leftist coca-grower leader Evo Morales and former president Gonzalo Sanchez de Lozada. These results suggest that, the unsolved coca issue continued to play an important role during 2002 elections. When the Congress finally reached a decision, deposits grew by 3.49 percent, indicating a calming effect in markets.

Finally, the estimated autoregressive (AR) coefficients are significant and negative, indicating significant dependency in deposit growth up to three weeks. The diagnostic tests indicate that the estimated model explains about 36 percent of the variation in deposits. The reported diagnostic tests show no evidence of significant serial correlation or autoregressive conditional heteroskedasticity (ARCH) effects.

Bank spreads

Second column of Table 1 reports the results for bank spreads. As discussed earlier, coca war violence may reduce the perceived stability of the country and hence bring about an increase in the ask-bid spread, reflecting a political risk premium. Progress in eradication may be perceived as a positive event, signaling less drug dealings and a decline in country

risk, causing a lower spread. Model 2 results confirm our priors: Violence widens the spread by about 0.48 %, while progress in zero coca policy reduces it by about 0.97 %.

As far as the 2001 presidential election events, only two of them are statistically significant: Resignation news widens the spread by 1.14 percent, while the appointment of the vice president lowers the spread by 0.65 percent. These results are expected because the resignation is likely to increase the market uncertainty, while news of a new leadership tends to lower it. The results for 2002 election news indicate that the spread widens by 0.98 percent, which

The estimated AR coefficients indicate significant autocorrelation in the spread. Today's spread is affected by past spreads up to 4 weeks. Finally, the diagnostic tests results show the estimated model performs well. The model explains about 48 percent of the variation in bank spreads.

IV. Conclusion

We have examined how socio-political factors affect bank spreads and deposits in Bolivia. Our results suggest that violence-related events associated with the zero coca policy caused higher spreads and lower deposits. On the other hand, the progress in eradication was associated with lower bank spreads, indicating a decline in the cost of intermediation. Election news was another important determinant of commercial bank activity in Bolivia. An important lesson for future studies is that political factors, besides economic fundamentals, should also be taken seriously when modeling the determinants of bank deposits and spreads in Bolivia. Future work should test whether the findings can be generalized to other countries in Latin America and developing countries in general as well.

References

- Brock, P. L. and Suarez, L. (2000). Understanding the behavior of bank spreads in Latin America. *Journal of Development Economics* 63(1), 113-134.
- Leons, M. B. and Sanabria, H. (1997). *Coca, cocaine, and the Bolivian reality*. Albany: State University of New York Press.
- Melvin, Michael and de la Parra, Gonzalo Afcha (1989). Dollar currency in Latin America: Bolivian application. *Economics Letters* 31(4), 393-397.
- Melvin M. and Ladman, J. (1991). Coca dollars and the dollarization of South America. *Journal of Money, Credit, and Banking* 23(4), 752-763.
- Melvin, M. and Peiers, B. (1996). Dollarization in developing countries: Rational remedy or domestic dilemma? *Contemporary Economic Policy* 14(3), 30-40.
- Sanabria, H. (1993). *The coca boom and rural social change in Bolivia*. Ann Harbor: University of Michigan Press.

Table 1**Parameter estimates for commercial deposit growth and spreads (both in US dollars)**

Variable	Deposit Growth	Ask-bid spreads
Constant	-0.0196 (0.66)	8.6951 (0.00)***
<i>Zero coca policy news</i>		
Violence	-0.3116 (0.04)**	0.4557 (0.09)*
Progress in eradication	-0.3169 (0.15)	-0.9793 (0.05)**
<i>President Banzer news</i>		
Cancer news	-0.2984 (0.05)**	-0.4852 (0.15)
Presidential uncertainty	-0.6913 (0.00)***	0.6313 (0.15)
Resignation	-0.5310 (0.09)*	1.1453 (0.09)*
Vice president	0.9672 (0.00)***	-0.6515 (0.04)**
<i>Election 2002 news</i>		
Pre-election	-0.8971 (0.00)***	0.1574 (0.58)
Election week	-2.8165 (0.00)***	0.9802 (0.01)**
Post-election uncertainty	-0.8971 (0.00)***	0.0146 (0.97)
New president in office	3.4931 (0.00)***	0.1902 (0.69)
AR(1)	-0.27013 (0.00)***	0.3358 (0.00)***
AR(2)	-0.2928 (0.00)***	0.2270 (0.05)**
AR(3)	-0.2388 (0.00)**	0.0127 (0.10)*
AR(4)	—	0.2342 (0.00)***
<u>Diagnostic tests</u>		
Adjusted R ²	0.3653	0.4779
F-test	10.83 (0.00)***	7.75 (0.00)***
Q(5) serial correlation	0.67 (0.72)	2.87 (0.12)
ARCH(5) LM test	3.25 (0.66)	9.53 (0.19)

Notes:

- (a) The White heteroskedasticity consistent standard errors are employed.
(b) p-values are in parentheses.
(c) ***, **, and * indicate significance at the 1, 5, and 10 percent level, respectively.