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Financial transaction tax and banking margins: An empirical note for Colombia[☆]



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ABSTRACT

Taxes on financial transactions have been especially controversial because of their potential effects on banking disintermediation. A modality of such taxes (Bank Debit Tax, BDT) was introduced in Colombia since the late nineties. Using monthly panel data from 1996 to 2014 for the major depository institutions, this paper provides evidence on the effects of the BDT on bank intermediation spread. For the total sample (thirteen banks), results suggest that nowadays the hypothetical elimination of the BDT would reduce spreads in 60 basis points, i.e. from 7.7% to levels close to 7.1%. The results do not provide clear evidence of differential impacts by bank size. Additional instruments of the financial repression as well as other determinants of banking spreads confirm the expected effects.

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Gravamen a los movimientos financieros y márgenes bancarios: una nota empírica para Colombia

RESUMEN

Los impuestos sobre las transacciones financieras han sido controversiales, especialmente por sus posibles efectos en la desintermediación bancaria. Desde finales de los años noventa se introdujo en Colombia una modalidad de estos impuestos (el Gravamen sobre los Movimientos Financieros [GMF]). Utilizando datos mensuales desde 1996 a 2014 para los principales bancos del sistema, este documento provee evidencia sobre los efectos del GMF en los márgenes de intermediación. Para la muestra total (trece bancos), los resultados sugieren que la hipotética eliminación del GMF reduciría los márgenes hoy en día en 60 puntos básicos, es decir, del 7,7% a niveles cercanos al 7,1%. Los resultados no ofrecen evidencia clara de impactos diferenciales por tamaño del banco. El trabajo también confirma los efectos esperados de los otros instrumentos de la represión financiera y de los otros determinantes de los márgenes identificados por la literatura.

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1. Introduction

As some other Latin American Countries (LAC), Colombia adopted a financial transaction tax since the end of the last century. This tax, levied on bank debits, henceforth BDT or 4x1000, as it is commonly known, has been controversial and subject of many adjustments. It has been amended in the last eight tax reforms, after its establishment in November 1998 as a provisional contribution to alleviate the financial system crisis. The BDT has gone from temporary to permanent; its rates have been unified and increased; the tax basis has been readjusted several times; its gradual removal has been rescheduled three times; and, finally, the revenue collected has changed its purpose four times: to address the financial system crisis in 1999, for reconstruction in the aftermath of a 1999 earthquake, to fund the rainy season emergency during 2011 and to confront the agricultural sector crisis in 2013.

The main criticisms regarding the 4x1000 arise from the inefficiencies it may be generating in the financial intermediation market. On the one hand, it can increase the cost of financial repression faced by banks due to government regulation and, thereby, it could affect interest rates on deposits and loans. On the other hand, the tax represents an additional transaction cost for customers, therefore discouraging the use of bank services. The eventual increase in banking spreads as well as the higher transaction costs for the customers end up generating financial disintermediation. Additional critiques to the BDT are associated with the creation of incentives to informality and illegal activities, and changes in the usage of different means of payment.

The key objective of the majority of the financial transaction taxes adopted at the end of the nineties was to raise public revenue. In particular, revenue from the Latin American bank debit taxes has varied widely, but has typically been around 1% of the GDP. In Colombia, the 4x1000 has become one of the easiest taxes to collect and represents a non-negligible source of government funding (currently 6% of the tax revenues or 0.8% of the GDP, CEECT, 2015). A drop in productivity recorded over the last decade (from 25% to 15% between 2000 and 2009) was corrected mainly by the tax reform of 2010. Currently, the productivity of this tax has regained the levels seen 15 years ago. Finding new resources to replace those coming from 4x1000 is difficult, especially because of the falling oil revenues (MHCP, 2015). The eventual abolition of the BDT would require around a three-percentage point increase of the added value tax. Hence, its elimination remains uncertain.

Literature on financial transaction taxes is ample. Interestingly, the majority of papers were published in the subsequent years to their adoption. LAC like Argentina, Bolivia, Brazil, Ecuador, Peru, and Venezuela introduced financial transaction taxes at the beginning of this century, though some have already repealed them (Brazil, Ecuador and Venezuela). The pioneering papers characterized the taxes approved in each country and analyzed their collection and productivity. In addition, the introduction of this kind of taxes was associated with some stylized facts in the means of payment, clearing checks and monetary and financial aggregates (Arbeláez, Burman, & Zuluaga, 2006; Baca Campodonico, De Mello, & Kirilenko, 2006; Coelho, Ebrill, & Summers, 2001; Lozano & Ramos, 2000). Subsequent papers have tried to capture the expected effects of these taxes on financial disintermediation (Hernández & Zea, 2006), on the demand for cash, and on the substitution between financial instruments issued by banks (Giraldo & Buckles, 2011). The loss of efficiency caused by these taxes has been evaluated in diverse contexts (Kirilenko & Summers, 2003) and has been compared with the inefficiencies arising from other taxes (Suescun, 2004).

The BDT in Colombia is paid by depositors when they make withdrawals from their sight bank deposits. However, in the case of term deposits (CDs), banks must pay the BDT on the liquidation of

these deposits. This imposes a cost on banks that could be finally reflected in interest rate spreads (lower interest rates on deposits and/or higher interest rates on lending). In this note, we assess the effects of BDT on these spreads. The analysis is carried out on the basis of monthly panel data for the majority of banks, taken from their balance sheets for the period between 1996 and 2014. The estimation controls for additional instruments of financial repression as well as other key factors identified in the banking literature as interest spread determinants. Unlike previous studies (Galindo & Majnoni, 2006; Medellín & Díaz, 2013; Salazar, 2005), in this paper we identify the isolated impact of BDT on spreads for the aggregate banking system and for banks grouped according to their size. Following this introduction, we describe the model and data in Section 2, in Section 3 we present and analyze results and, in Section 4, some conclusions are drawn.

2. Methodology

2.1. The model

We start with a simple model for a representative bank j whose objective is to maximize profits (π_j) at each point in time t . We omit the time subscripts for simplicity. The bank produces loans (L_j) using as inputs deposits (D_j) and labor (N_j). Revenues for bank j come from the remuneration of its productive loans ($\delta_j i_{L,j} L_j$, where $\delta_j \in [0, 1]$ is the share of productive loans), while its costs are associated with the remuneration of deposits ($i_{D,j} D_j$) and labor $C_j(L_j, D_j)$, which in turn depends on the volume of loans and deposits. Interest rates on loans and deposits are denoted by i_L and i_D , respectively.

We disaggregate deposits into term deposits (CD_j) and other deposits (OD_j). A share of these deposits (E_{CD} and E_{OD}) is required by the central bank as compulsory reserves while the rest ($1 - E_{CD}$ and $1 - E_{OD}$) is available to be lent by banks. The representative bank faces additional costs generated by financial repression; in particular, we stress here those derived from the financial transaction tax on the liquidation of CDs. The problem for a bank which chooses between the two types of deposits is given by:

$$\begin{aligned} \max_{(CD, OD)} \quad & \pi_j = \delta_j i_{L,j} L_j - i_{CD,j} CD_j - i_{OD,j} OD_j - C_j(L, CD, OD) - \alpha_j CD_j (1 + i_{CD,j}) \tau \\ \text{s.t.} \quad & L_j = CD_j (1 - E_{CD}) + OD_j (1 - E_{OD}) \end{aligned} \quad (1)$$

where α is the share of CDs that reach its maturity date and are withdrawn each period and τ the financial transaction tax of flat rate (of 0.4%, hence its name 4x1000). From the two first order conditions derived from (1), we retake only the first ($\frac{\partial \pi_j}{\partial CD_j} = 0$),

$$\begin{aligned} \frac{\partial \pi_j}{\partial CD_j} = \delta_j i_{L,j} (1 - E_{CD}) - i_{CD,j} - \frac{\partial C_j}{\partial CD_j} - \frac{\partial C_j}{\partial L_j} (1 - E_{CD}) - \alpha_j (1 + i_{CD,j}) \tau = 0 \quad \text{or} \\ i_{L,j} - i_{CD,j} = i_{CD,j} \left[\frac{1 + \alpha_j \tau}{\delta_j (1 - E_{CD})} - 1 \right] + \frac{\partial C_j}{\partial CD_j} \frac{1}{\delta_j (1 - E_{CD})} + \frac{\partial C_j}{\partial L_j} \frac{1}{\delta_j} + \frac{\alpha_j \tau}{\delta_j (1 - E_{CD})} \end{aligned} \quad (2)$$

Note that left side of (2) represents the banking spread defined as the difference between the interest rate received from loans and the interest rate paid on CDs. Clearly, the interest rate spreads will be positively affected by the financial transaction tax as long as $\alpha_j \frac{(i_{CD,j} + 1)}{\delta_j (1 - E_{CD})} > 0$.

We want to emphasize some potential alternatives employed by banks to compensate, via interest rates, the cost generated by the financial transaction tax. Following (1) and (2), the bank j may react by increasing the loan interest rates and/or by reducing the interest rates on deposits, both on CD's and/or on other deposits. For this decision, banks should take into account, among others, the price elasticity of each one. In practice, either option should ultimately influence the banking margins, as it will be examined below.

In order to run the estimations, the reduced form of the model is used to guide the econometric specification with some extensions. Firstly, we include additional sources of financial repression, which

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