The Market for Record-Date Ownership

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ABSTRACT

The Market for Record-Date Ownership

A share’s ownership of record can trade separately from its beneficial ownership, through equity loans. In a year of transactions by a major lender, we analyze the market for ownership of record on dates when this ownership is important: the record dates of votes, when loans transfer votes, and of distributions, when loans determine the direct recipient of the distributions. On voting record dates, the lender’s loan volume is high relative to surrounding days, particularly so for proposals related to lagging firms and of those, especially the proposals with close votes. Loan volume associates with greater support for shareholder proposals, and weaker support for management proposals. We also find substantial lending on dividend record dates of firms with reinvestment discounts and loan pricing that is low but increasing with the implied profit. On the record dates of Canadian firms’ dividends we find that U.S. investors subject to withholding can reclaim 95% of the marginal unit of dividend yield using equity loans. We also find that, consistent with the Canadian dividend tax credit, the stock market capitalizes this marginal unit at more than its full cash value. For the cross section of Canadian firms these findings predict, and portfolio data confirm, that dividends reduce investment by U.S., relative to Canadian, institutions. JEL G35, G34, G15
The beneficial owner of a share is the investor of the asset-pricing literature, the investor whose wealth varies with the share’s total returns. The owner of record is the direct recipient of its distributions and votes. The distinction is important because investors can demand one type of ownership more than the other, and because the ownership types can trade separately. Whether these separate demands are met can have important implications for the control and valuation of publicly-traded firms. This paper addresses these issues with an empirical investigation into the separate trading of ownership of record, as revealed by a year of transactions by one of the major traders.

The transactions we analyze are equity loans, one year of loans by one of the most active lenders. Equity loans separate beneficial ownership from ownership of record because they transfer ownership of record while obliging the borrower to reimburse distributions the lender missed by not being the owner of record. Thus, the lender retains beneficial ownership; the reimbursements and the shares’ eventual return synthesize the economic experience of investors who do not loan. So $A$ can sell a share’s ownership of record, but retain its beneficial ownership, by lending the share to $B$. It might seem that $B$’s reimbursements to $A$ make this transaction a wash, but there are benefits specific to ownership of record that survive reimbursement, three of which are the focus of this study.

The first benefit is votes. Votes are not reimbursed, so in the example above, $B$ and not $A$ gets the share’s vote for any proposal with a record date during the term of the loan. “One share – One Vote” is often assumed to apply to beneficial ownership, i.e. that

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1 The ownership enjoyed by an equity lender is often referred to as beneficial, the term we use throughout this paper. The precise terminology is, however, not a settled question. See Apfel et al. (2001) for a detailed discussion.
someone with beneficial ownership of \( n \) of a company’s \( S \) shares gets \( n/S \) of the votes, but record date loans unbundle votes from economic exposure. This is similar to the observation of Bethel and Gillan (2002) that broker votes on routine proposals give brokers votes beyond their economic exposure, and similar to their finding that broker votes are significant to voting outcomes, we find that loan volume, by our data provider, is significantly greater on voting record dates than on other days. We follow up this finding with data on the topics and outcomes of nonroutine proposals, and in the cross section of these proposals we find more of this vote transfer for lagging companies, and among the proposals of lagging companies, more vote transfer when the vote is close, and also more when the vote is on a management proposal regarding compensation. Record-date lending correlates (with mixed significance) with lower support for management proposals, and higher support for shareholder proposals. What we do not find is a price effect; loans on voting record dates cost about the same as loans on other dates. Put together, these results indicate two groups of investors, one interested in beneficial ownership but not votes, and the other interested in voting power, especially in situations where the marginal value of a vote is intuitively higher.

The next benefit is international tax arbitrage. There is a long literature on the differential taxation of dividends, depending on the domicile and other characteristics of the owner of record (for example McDonald (2001), Boyd and Jagannathan (1994), Brown and Clarke (1993), Bell and Jenkinson (2002)). McDonald (2001) characterizes the taxation of dividends on German stocks, focusing on the dividend tax credit that accrues to the owner of record \( if \) he is a taxpaying German, and therefore encourages a transfer of German shares to Germans on dividend record dates. Our data is rich in
Canadian firms so we focus on Canadian trades, where we find equity loans recovering about 10% of the marginal unit of dividend yield, less than the 15% that non-Canadians can lose to withholding. We also find that the marginal unit of dividend yield is capitalized into share prices at more than 100% of its cash value, indicating some incidence of the Canadian dividend tax credit. These findings suggest that the relative demand by Canadians, compared to non-Canadians, for Canadian stocks should increase as dividend yield increases, and this is the pattern we confirm in 13(f) portfolio disclosures by U.S. and Canadian institutions.

The final benefit derives from the difference, explored by Scholes and Wolfson (1989), between the actual and cash value of dividends created by dividend-reinvestment plans (DRIPs) with discounts. When a DRIP-discount stock pays a dividend, the recipient can take the dividend cash amount or an amount of shares worth more, at current transaction prices, than the cash amount. If the recipient borrowed the shares, he must reimburse the cash amount to the beneficial owner, so there is a potential arbitrage if a willing lender can be located. Transactions costs aside, any lender could take the same profit himself, so willing lenders could be scarce. What we find is substantial lending volume on DRIP-discount dividend record dates, where the pricing of these loans shows that lenders trade 100% of the paper profit for 10% cash.

The rest of the paper is in five sections. Section I gives the necessary background on equity loans and the database, Section II covers voting, Section III covers Canadian dividends, Section IV covers DRIP discounts, and Section V summarizes and concludes.
I. Background and Data Description

This section covers the aspects of the equity-loan market that are relevant to the market for legal ownership. For a more complete description of the market and the governing regulation, readers are referred to Geczy, Musto and Reed (2002) and D’Avolio (2002). A short sale by investor $A$ to investor $B$ of $n$ shares of XYZ Corp on trading day $t$ obliges $A$ to deliver $n$ shares of XYZ to $B$ on $t+3$. These shares are acquired through a day $t+3$ equity loan, say from $C$, and this loan is usually collateralized with 102% cash. That is, if the shares are worth $1$MM, then $A$ delivers $1.02$MM to $C$ when $C$ delivers the shares to $B$. If the record date of a distribution passes while the loan is outstanding, then $A$ must reimburse to $C$ the distribution $C$ would have received. Eventually $A$ closes out the loan by purchasing $n$ shares and delivering them to $C$, who then returns the cash.

While the loan is outstanding, $C$ rebates to $A$ some of the interest earned on the cash; the shortfall of this rebate rate from the market overnight rate is the lender’s profit and borrower’s opportunity cost, and therefore the implicit price of the loan. The rebate rate for non-scarce stocks, known as general collateral or GC stocks, is a few basis points (basis point = 1/100 of 1%) below the Federal Funds Effective Rate, and is known as the GC rate. Stocks that trade at lower rebates are known as specials, and the difference between a special’s rebate and the GC rate is known as its specialness.

The database contains the rebate rate, start and termination date and a few other statistics of all loans, about a quarter million, of U.S.-listed equities made by a large custodian bank, acting as lending agent for its custodial clients, between November 1998 (11/98) and 10/99. This is the same database used in Reed (2002) and Geczy, Musto and
Reed (2002), where it is described in more detail. For our purposes here the important database-specific facts are that the specialness implicit in a loan is observable only if the data provider considers the loan to be Medium or Large, rather than Small, and that the rebates are wholesale rates charged to brokers, as opposed to the retail rates the brokers charge their customers. So we do not observe the complete cross section of specialness every day – on the typical day, we observe the specialness of about 3,200 stocks – and what we observe is a lower bound on the cost to the end-user, most representative of the cost to major investors such as large hedge funds. Similarly, it is an upper bound on the revenue accruing to the loaned shares’ beneficial owner. Specialness is quoted as an annual interest rate. For example if the specialness of a stock is 3%, and an investor borrows $1MM worth of it for 5 calendar days, then his specialness cost (with 102% collateral) is \((3/100)(5/360)($1MM)(1.02) = $425\).

In the example above, A borrows the shares but B, to whom A shorted, becomes the owner of record. The intuitive way for A, rather than someone else, to gain the ownership of record would be to simply borrow the shares without having shorted. But U.S. investors cannot do this; they must have a “permitted purpose” to borrow, where a permitted purpose is a short sale or failed delivery (12 CFR 220.10(a), and see also Fabozzi (1997), pp 104-5). What they can do instead is short to themselves, i.e., set up two brokerage accounts and short from one to the other, thereby equating A and B in our example. Another tactic is non-standard settlement: A shorts to B with regular \(t+3\)

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2 See Evans, Geczy, Musto and Reed (2002) for a discussion of what happens if A fails to deliver.
3 The specialness implicit in a cash-collateral loan is defined as the GC rate for the loan’s size minus the loan’s rebate rate (annualized), if the loan is Medium or Large. If the loan is Small, it is not used for calculating specialness. For non-cash-collateral loans the specialness is defined as the lending fee minus 20bp. The specialness of a stock on a given day is the value-weighted average of the specialness of all Medium and Large loans of the stock that day. These calculations are identical to those in Geczy, Musto and Reed (2002); see that paper and Reed (2002) for more discussion.
settlement, while $B$ simultaneously shorts to $A$ with $t+2$ settlement. So $B$ borrows shares at $t+2$ to settle his short, $A$ gives them back at $t+3$ to settle his, then $B$ delivers them back to his lender.$^4$ $A$ and $B$ would presumably have worked this out in advance. Loans of non-U.S. securities, including those traded in the U.S., to non-U.S. investors have been specifically exempt from the permitted purpose rule since April 1, 1998 (Federal Reserve System (1998)). Thus to effect the Canadian dividend arbitrage described below, a Canadian investor could have simply borrowed from our data provider. Our database shows only the loans, not the associated transactions, so we do not know which way the borrowers arranged to acquire the lenders’ ownership of record.

II. Votes

For any particular vote there is a voting record date; an investor may vote as many shares as he was owner of record of on this date. If he acquires $n$ shares for the record date through a securities loan then he has $n$ more shares to vote, with no additional economic exposure, whereas the lender has $n$ fewer shares to vote and no less economic exposure.$^5$ Is this voting-rights consideration important to the equity-loan market? Or more to the point, does the equity-loan market host a voting-rights market? The goal of this section is to answer these questions by relating our database of equity-loan information to a database of votes.

Our first objective is to establish whether lending activity interacts with voting record dates. To this end we take the list of all voting record dates of all stocks in the sample period, as compiled by the Investor Responsibility Research Center (IRRC), and

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$^4$ See Critchley (1997) for a discussion of transactions like this.
measure aggregate loan volume on voting record dates and also over the ten trading days before and after. The empirical question is whether loan volume is significantly different on the record date relative to the 20 surrounding trading days.

The IRRC data list 16,961 pairs of CUSIPs and voting record dates from 11/98 through 10/99. Of these, 6,186 are both in the CRSP data and covered by ten trading days before and after within the sample period. For each record date/CUSIP pair we retrieve the number of shares outstanding from CRSP, and calculate the number of shares loaned by our data provider divided by shares outstanding from event day –10 to event day 10, where event day 0 is the record date. Then for each of the 21 event days we average across the 6,186 observations. The result is plotted as Figure 1.

The plot shows a large and easily significant loan-volume spike on voting record dates. On average, our data provider loans 0.21% of a firm’s shares on the twenty surrounding days, but 0.26% on the record date itself. The standard deviation of the twenty surrounding observations is 0.004% so this 0.05% spike, representing a 22% increase in loan volume, is statistically significant at the standard cutoffs. Our data provider’s loan volume does in fact relate to voting record dates, and since loans separate beneficial ownership from control rights one might have expected less borrowing, but we find more. The extra borrowing may be to boost voting power beyond economic exposure (e.g. an investor with 100 shares borrowing another 100 to vote 200) or to restore voting power (e.g. a broker who loaned 100 of a clients’ shares, and prefers not to call in the original loan); either way, it indicates an active market for voting rights.

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See Apfel et al. (2001) for an exposition of the complicated, and not entirely consistent, legislation regarding the voting rights of lenders and of the practices brokerages have adapted to the legislation.
Our goal is to learn from the record-date spike at our data provider about the economy-wide market for votes. Our data provider is a substantial part of the economy-wide market; D’Avolio (2002) reports the average open short interest across all investors, and therefore the approximate aggregate lending across all lenders, to be 1.4% of market value, so judging from the 0.21% average on the typical day, from Figure 1, our data provider is about 15% of the market. This suggests that the spike on voting record dates across all lenders is about 1/0.15 times the 0.05% spike at our data provider, which would be about 1/3 of 1% of all votes. Custodian banks such our data provider may, however, not be representative of other loan sources, notably brokers’ margin accounts, so the lending spike may reflect a stable aggregate loan volume being reallocated toward custodian banks by other lenders’ demand for votes. But whether the expansion of custodial lending is at the intensive or extensive margin, the variation of this expansion across votes reflects the variation of demand across votes, and the supply of votes is fixed, so we can use the cross section of abnormal record-date lending to learn about the demand for votes.

Loan quantity responds on voting record dates; how about price? We cannot observe price as readily as quantity, since price is observable only when quantity is sufficiently large, but it is worth checking for a price effect because it helps characterize this market for votes. The lending market for most stocks clears in a flat region of the share supply curve on the typical day (e.g. D’Avolio (2002)) so demand spikes do not necessarily cause price spikes. If sufficiently many beneficial owners value their shares’ votes there will be higher loan pricing on voting record dates, relative to nearby dates when loans do not convey votes but if the supply of beneficial owners who do not value
their votes exceeds the demand spike, we should expect no price effect.

To test for a price effect, we calculate for each stock its specialness (as defined above) on the record date, and also its average specialness over the twenty surrounding days, where days with missing specialness are removed. So for example if a stock’s specialness is observable on three of the twenty days, we average across those three observations. There are 2,019 voting record dates such that we observe the stock’s specialness on the record date and on at least one of the twenty surrounding dates. Across these 2,019, the average record-date specialness is 18.1bp, and the average of the average non-record-date specialness observations is 17.5bp. The standard error of the 0.6bp difference is 0.4bp, so it is not significantly greater than zero, and we can reject that the true difference is greater than 2bp, which itself would be trivial (note that these are annualized rates, so extra specialness of 2bp for one day implies $0.56 less interest income on $1MM of collateral). So to a close approximation, loans that convey votes cost the same as loans that do not, which implies that the lenders are investors who are not selling their votes, but rather just do not care about them. Because the price effect is trivial and also because we lose many observations of quantity if we require simultaneous observations of price, we focus the remainder of the analysis on quantity alone.

Having established the existence of vote-driven borrowing on average across votes, our next goal is to explain the cross section. For what types of proposals, and for what types of companies, do investors acquire additional votes? Across companies, the intuitive measure is poor performance, either by accounting ratios (Karpoff, Malatesta and Walkling (1996)) or by relative stock return (Pozen (1994)). Across proposals, one obvious candidate is closeness: everything else equal, demand for votes should be
stronger when the vote is close.

For our cross sectional tests we combine the CRSP and Compustat data with the IRRC’s database of voting outcomes for the same period. The voting-outcomes data cover 1,886 nonroutine proposals submitted to shareholders of the largest firms, reporting the vote for and against, as well as the vote necessary for passage. Note that because these proposals are nonroutine, their outcomes do not include broker votes (Bethel and Gillan (2002)). We use this data to flag close votes; if the vote for proposal $i$ is within 5% (on either side) of the vote necessary, then $CLOSE_i$ is 1, and otherwise it is 0. By this rule, 88 of the 1,886 votes are close. With the CRSP data we define the relative underperformance for proposal $i$, $UPERF_i$, to be 1 if the total return of the associated stock from 11/97 to 10/98 (i.e. the year just before our sample period) is less than return of its industry (i.e. the equal-weighted average return of all stocks with the same two-digit SIC code), and 0 otherwise. We have $UPERF$ observations for 1,734 proposals. From Compustat we take the long-term senior bond rating from the most recent fiscal quarter-end as of 9/98; if this is below the median for the company’s industry then the relative rating $URATE_i$ is 1, and otherwise it is zero. This statistic is available for 848 proposals. So both $UPERF$ and $URATE$ indicate lagging firms, the former by reference to stock performance and the latter by reference to bond ratings, which are generally associated with accounting ratios.

We test whether $CLOSE$, $UPERF$ and $URATE$ relate positively to vote-driven borrowing by means of dummy-variable regressions, where the dependent variable $XLOAN$ is the loan volume on the record date minus the average loan volume over the twenty surrounding days. We first run simple regressions on the three explanatory
variables separately, then we run multiple regressions that interact \textit{CLOSE} with \textit{UPERF}, and then with \textit{URATE}. The multiple regressions allow the effect of a close vote to be different for lagging vs. leading firms. Results are collected in Panel A of Table I.

The simple regressions show lagging firms’ proposals attracting significantly more record-date borrowing, by either the stock-return or bond-rating measure. Closeness is not significant unconditionally, but it is for votes of less creditworthy firms, and at lower significance, lower-return firms. At the point of means, the effect on vote-borrowing for proposals of lagging firms is large, from 0.12\% to 0.20\% for firms with lagging stock returns, and from 0.16\% to 0.28\% for firms with lagging default risk.

The magnitude of vote transfer relates intuitively to the operating history of the firm associated with the proposal, and conditionally to the closeness of the eventual tally. We can also measure its relation to the type of proposal at stake. Intuitively, investors care more about some issues than others, and they care who made the proposal; we can test for whether the cross-section of issues and proposers influences the cross section of demand for votes by first grouping proposals into the major categories, and then regressing \textit{XLOAN} on indicators for those categories.

For the purpose of categorization we have a brief description of each proposal in the IRRC database, and also who proposed it. One straightforward grouping is into shareholder proposals on the one hand, and management proposals on the other. Indeed, there are several studies, Karpoff, Malatesta, and Walkling (1996), Gordon and Pound (1993), Gillan and Starks (2000) and Wahal (1996), that analyze shareholder proposals separately from management proposals. So all proposals are first sorted by their proposers into one group of 212 shareholder proposals, and 1606 management proposals.
Next, following Karpoff, Malatesta, and Walkling (1996) we group proposals by their descriptions into three subsets: External, Internal, and Compensation. External proposals refer to the company’s interactions with other companies, such as mergers and acquisitions, poison pills, spin-offs, supermajority provisions and the sale of the firm. Internal proposals relate to the internal operations of the company, such as elections of directors or board members, amendments to governance procedures and changes to voting rights of directors/board members or to committee structure or composition. Compensation proposals are those related to payments to directors or executives, such as adopting a bonus plan or amending a stock option/award/bonus plan, excluding stock option plans for employees in general. The only difference between our classification and that used in Karpoff, Malatesta, and Walkling (1996) is the inclusion of spin-offs and firm sell-offs as external issues. This classification also reflects the factors Pozen (1994) highlights as influencing institutional activism: antitakeover measures, executive compensation, and governance structures.

We run two cross-sectional regressions, one for shareholder proposals and one for management proposals. In both cases the dependent variable is $XLOAN$ and the independent variables are $EXTERN$, $INTERN$ and $COMP$ which are 1 for External, Internal and Compensation proposals, respectively, and 0 otherwise. Proposals that did not fall into exactly one category score zero on all three, and are captured by the intercept. Results are in Panel B of Table I.

The categorization does not pick up a significant variation across shareholder proposals. But among those from management, there is a significant effect of compensation proposals. When management submits a proposal related to compensation,
we find a significant increase in the number of votes acquired through the lending market, consistent with a strong interest among motivated investors to vote on – vote against, presumably – such plans.

As the last results indicate, the economically important ramification of vote borrowing is its effect on outcomes. If investors borrow to boost their voting power against a type of proposal, then other things equal we should see less support for those proposals, within the type, that coincide with more borrowing. To measure the relationship between outcome and vote-borrowing we define $FOR_i$ to be the percentage vote for proposal $i$ and we regress it first on just $XLOAN$, and then to allow the relation to differ across categories, we regress it on the category indicators and $XLOAN_i$ interacted with the category indicators, and also with the dummy $OTHER$ which indicates proposals that do not fall in the three categories. There are two regressions for shareholder proposals and two for management proposals; results are in Table II.

In the simple regressions we find a significant positive relation between lending and the vote outcome across shareholder proposals, but we find no significant relation across management proposals. In the shareholder-proposal multiple regression, three of four proposal types come in positive, with External proposals showing a statistically significant relation. In the management-proposal multiple regression, three of four proposal types come in negative, including compensation proposals, with internal proposals entering significantly. These results associate vote-borrowing with a particular side of the vote, the positive side for proposals by shareholders, and the negative for proposals by management. This is the opposite side of the vote from that associated with broker votes (Bethel and Gillan (2002)).
To summarize, equity loans on voting record dates separate votes from economic exposure, and on these dates we find that our data provider loans not just some shares but in fact more shares loaned than on the typical day. There is no meaningful effect on loan pricing but the volume of vote transfer shows variation in the cross section that indicates more demand for the intuitively more valuable votes. More votes are borrowed when the firm is underperforming, and among these votes of underperformers, more when the tally turns out to be close. Volume is also higher for management proposals regarding compensation, and it relates generally negatively, with mixed significance, to support for management proposals, and positively to support for shareholder proposals. So equity loans convey votes from investors who do not value them to investors who do.

III. Canadian Dividends

A company’s distributions go to its shareholders of record on the distributions’ record dates, and the taxation of the distributions can depend on where these shareholders live. Consequently, investors can benefit from selling ownership of record on dividend record dates. For two reasons, the usual direction of this trade is toward investors residing in the same country as the firm paying the dividend. The first reason is that firms in most countries are obliged to withhold a fraction of dividends from investors in other countries. Some investors can reclaim the withheld amount and some others can be exempted from withholding, but some can simply not get it back. And in any case, the reclamation process is an extra transaction cost imposed on shareholders. The second reason is that many countries provide tax credits for dividend income from domestic firms (see McDonald (2001) for a discussion of both points).
One way for tax-disfavored investors to claim some of the extra valuation of tax-favored investors is simply to sell *cum*-dividend and buy back *ex*-dividend. If the marginal investor gets better tax treatment, then the expected *ex*-dividend-day price drop could exceed what the investor would get post-tax from the dividend. On the other hand, the investor loses a day of exposure to the stock, and pays round-trip transaction costs that could easily exceed the fraction of the dividend that represents his gross profit. Another way is to simply lend the stock to the tax-favored investor, splitting the surplus *via* the specialness. This way, the investor retains his exposure and pays no spread. Much is known about the stock-trading strategy; our opportunity is to provide the first study of the stock-*lending* strategy with data that go right to the question of what the beneficial owner gets. Because our data cover U.S.-listed firms and because many Canadian stocks trade in the U.S., this study focuses on Canada. We first cover the relevant parts of the tax code, then conduct the empirical tests.

**III.A Background on relevant taxes**

As is standard between major industrialized nations, dividend payments across the U.S./Canadian border are governed by a Tax Convention that mandates withholding in most circumstances. Pursuant to the Convention, firms in one country withhold 15% from dividend payments to accounts in the other country. Taxable accounts can reclaim the tax as a credit (for example, on line 43 of the 2001 U.S. form 1040, and line 431 on Schedule 1 of the 2000 Canadian form T1), but tax-free accounts cannot. The recourses for non-taxable accounts such as pension funds are to apply *ex ante* to the firm not to be withheld, or to apply *ex post* to the foreign government for reimbursement.

The withholding law creates an interesting quandary for U.S. mutual funds.
Consider the situation of a fund holding one share of a Canadian firm that pays a $1/share dividend. A mutual fund is not among the investor types listed in the Convention as eligible for exemption from withholding, so it receives $0.85, and its taxable accounts can reclaim the withheld $0.15. Its non-taxable accounts cannot reclaim the $0.15, so the dividend is worth just $0.85 to them. An alternative is to lend the share to a Canadian, who gets the full $1 and who both reimburses the fund the $0.85 payment it would have received and pays an amount $x$ in addition, via the negotiated specialness of the loan. The fund may find the alternative preferable, even with $x<0.15$, because $0.85+x$ is an improvement for the non-taxable accounts (though not the taxable accounts), and because the fund’s total return, as calculated and advertised, is higher this way. That is, only the $0.85$ goes into the calculated total return when the fund takes the dividend directly, but $0.85+x$ goes into the calculated total return when the fund takes the reimbursement and the specialness.

Canadian individual investors bring an additional advantage, which is their access to a dividend tax credit. As we describe in the appendix, this credit can boost the value of a $1 dividend to about $1.15, when Federal and Provincial taxes are combined. That is, a taxable Canadian individual reduces his taxes by about $0.15 when he borrows the share

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6 All figures in this section are converted to $US.
7 It does not work to lend to a taxable U.S. investor for this purpose, because the U.S. tax code no longer allows investors to claim a foreign tax credit on shares they have held for less than 16 days.
8 We are assuming here that the rebated dividend, which is not in our data, is 85%, and that the borrower shares the arbitrage profit through the specialness, which is in our data. In principle the rebated dividend could be different from 85%, but our data provider reports that they leave it at 85%. Also, the fund managers we have spoken with say they always leave the rebated dividend at 85% and negotiate the interest rebate (or the lending fee, if it is non-cash collateral) in accordance with their view that the income in excess of the 85% they would normally receive is more properly accounted for, due to tax and other considerations, as security lending rather than dividend income.
9 For example, the 2000 Annual Report for the Vanguard International Value Fund notes that the $20.053MM of reported dividend income is net of $1.603MM of foreign withholding taxes.
10 The specialness, $x$ in the example, can itself be subject to withholding (260(8)(b) of the Income Tax Act), in which case the net post-withholding effect of lending is to reduce the withholding from 15% to 15% of $x$. 

and reimburses $1 to the lender. This credit is the focus of Booth (1987, 2000), which derives the after-tax dividends for different clientele, and of Lakonishok and Vermaelen (1983), which compares the capitalization of dividends in 1972, the credit’s first year, to the capitalization in 1971, finding very low numbers in both years (ex-day price changes around 30% of dividends) and actually lower numbers for 1972 than 1971.

To summarize, the 15% withholding tax encourages U.S. mutual funds to lend their Canadian shares to Canadians on dividend record dates, and the surplus to be shared through loan pricing is at least the 15% of the dividend. There could also be more surplus depending on the availability of individuals, as opposed to institutions, as borrowers. To ascertain what actually occurs, we collect the dividend record dates of all Canadian firms on CRSP (note that Canadian firms trade in the U.S. just as they do in Canada, and not as ADRs), and analyze the pricing of loans originated on these dates.

III.B Empirical Tests on Loan Pricing

The trading of 106 Canadian firms on American exchanges during the sample period is covered by the CRSP data. Among these firms we find 130 record dates of regular cash dividends in the sample period. The significance of record-date lending is apparent in Figure 2, which is the same as Figure 1 except that voting record dates are replaced by Canadian dividend record dates (there are 121 record dates represented in the graph, since we require loan data from day –10 to day 10). It is interesting that, while record-date volume is about twice as high as on days –10 through –2 and days 2 through 10, volume is over three times as high on days –1 and 1. The higher volume on the adjacent days is an intriguing mystery which is not explored further here.11

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11 One possibility is that some Canadian custodial clients usually lend but want their shares back for day 0, while some non-Canadian clients do not usually lend but want to recapture withholding by lending, where
For each record date we want the cost of borrowing shares for just that date. For this purpose we use the value-weighted average specialness on the record date of all loans originated on that date. As Figure 2 suggests, this policy excludes some pre-existing loans. Some of these pre-existing loans probably relate to the dividend but we cannot sort them from the unrelated loans (except by pricing, which would ruin the test) so to be conservative we exclude them all. We end up with specialness numbers for 34 of the record dates. For each date $i$ let $COST_i = (s/100)(n/360)(1.02)$, where $s$ is specialness and $n$ is the number of calendar days from the record date to the next trading date, and let $YLD_i = d/S$, where $d$ is the per-share dividend and $S$ is the closing share price before the record date. This way, $COST$ is the specialness cost per dollar value of shares borrowed (i.e. the cost to the borrower and the revenue to the lender), and $YLD$ is the dividend income per dollar of shares borrowed. We use the closing share price before the record date (which, with three-day settlement, is the trading day after the ex-dividend day) because for collateral calculation our data provider uses the closing price from the day before the loan is originated.

The average of $COST / YLD$ is 3.8%, so on average about $\frac{1}{4}$ of the withheld 15% was reclaimed through lending, and the borrower got the remaining $\frac{3}{4}$. We can establish the statistical significance of the relation between $COST$ and $YLD$, and also decompose the relation into a transactions cost and a marginal effect, with a regression:

---

some of this lending starts on day -1 because some borrowers want to take possession in advance of day 0. These borrowers may be concerned that the shares will be unavailable if they wait until day 0, or that delivery problems will delay the transfer of ownership of record.

12 We are assuming here that the loans come from accounts that are not exempt from withholding, and are therefore reimbursed 85% of the dividend. We do not know the lenders of the loans in our data, only the lending agent, and some of the agent’s clients may be exempt; our assumption is based on our discussions with market participants who report that 85% accounts are the major lenders. Also, if 100% accounts are enjoying specialness income then their borrowers are reimbursing more than 100% of the dividend, so 85% accounts should get more than 15% of the dividend. But the highest percentage we ever see is below 12.
The high $R^2$ indicates a strong relation between the two; the dividend yield explains most of the variation in the cost of borrowing. The model predicts negative specialness for yields below 30bp, which of course does not happen; Figure 3 plots the 34 $(YLD,COST)$ pairs, showing zero specialness for the three datapoints below 30bp. As in McDonald (2001), the -3bp intercept can be interpreted as a transactions cost charged by the borrower, which is on top of any other transactions cost borne by the lender, and 10% is the fraction of the marginal unit of dividend yield that the lender can reclaim. As the yield grows large, the lender’s share of the withheld portion approaches $10/15 = 2/3$.

### III.C Market Value of the Marginal Unit of Dividend Yield

The regression result shows that an American investor who must reclaim withholding through lending gets $0.85 YLD + (-3bp + 0.1 YLD) = 0.95 YLD - 3bp$, so the value to him of a Canadian dividend goes up, as a fraction of its gross cash value, as the yield goes up, but it increases less than 1:1 with the yield. The value to a taxable Canadian investor can be *more* than 1:1, up to 115% of the dividend. So what is the market’s valuation? Lakonishok and Vermaelen (1983) and Booth and Johnston (1984) find low valuations of the average unit of dividend yield, but do not address the marginal unit. The test design of McDonald (2001), regressing price returns on yields, performs this task by decomposing the return into a transactions cost and the marginal valuation.

To run this test, we collect all Canadian ex-dates covered by CRSP going back to 1972, and for each dividend $i$ we let $RETX_i$ be the ex-date price return, and $YLD_i$ be the
dividend divided by the cum-date price. We regress \( REX \) on \( YLD \) and test whether the slope is less than \(-1\). The fitted model is (\textit{standard errors} in italics):

\[
RETX_i = 0.0022 - 1.1317YLD_i \\
.0008 \quad 0.08159
\]

\( R^2 = 10.8\% \)

\( N(\text{obs}) = 1596 \)

The slope coefficient is significantly less than \(-1\) at the 5% level, so we do in fact see the marginal unit of yield valued more than \(1 \cdot 1\). At the point of means, the price drop is 85% of the yield at 77bp, and 100% at 166bp, near the high end of the sample (95\textsuperscript{th} percentile of \( YLD \) is 179bp). The 22bp intercept is significantly lower than the analogous 56bp estimate for Germany in McDonald (2001), which may reflect the liquidity difference between the largest Canadian stocks and the average German stock, and the capitalization of dividends is in general much higher than Lakonishok and Vermaelen (1983) find in 1972. This may partly reflect the higher liquidity (and therefore less stale pricing, which can muddle the test; see McDonald (2001)) of later years and larger stocks.

To summarize, U.S. investors who cannot get the 15% withholding back can instead lend to Canadians who are not withheld. There may be more than 15% surplus to share, since borrowers who are taxable individuals have access to the dividend tax credit. We find that record-date loans reclaim 10% at the margin, so the loans are useful but they do not reclaim all the 15% withholding, let alone the credit. Therefore these investors receive less than 100% of the marginal unit of dividend yield, whereas we find, presumably due to the credit, that the marginal unit is capitalized into prices at \textit{more} than 100% of its cash value. These findings suggest that, relative to Canadian investors, U.S. investors prefer relatively lower dividend yields. The next subsection uses portfolio holdings data to test whether this relative preference shows up in relative demand.
III.D Effect of Yield on U.S. Demand

Everything else equal, the demand for Canadian stocks by non-Canadians should decrease as yield goes up. Do non-Canadian portfolio managers adapt by avoiding high-yield Canadian stocks? The quarterly 13(f) institutional portfolio disclosures present an opportunity to find out.

From Thomson Financial we have the CDA/Spectrum Institutional 13(f) Common Stock Holdings database, which lists the calendar-quarter-end holdings of managers required to file 13(f), and also the official list of stocks that must be disclosed, Securities Exchange Commission (2000). The non-U.S. managers required to file 13(f) are essentially those doing business in the U.S. and handling at least $100M in U.S.-listed equities,\(^\text{13}\) so we do not see all Canadian portfolios but we can expect to see the big ones, and the stocks that must be disclosed are essentially all stocks traded in the U.S., so we see holdings of the Canadian stocks listed in the U.S. The empirical question is whether the U.S. managers hold relatively less of a Canadian stock, compared to the Canadian managers, when the stock has a higher dividend yield. We address this question by comparing their holdings on the most recent available disclosure date, 12/30/00.

For this test we need the dividend yield for all Canadian stocks on CRSP as of 12/30/00. We identify the most recent regular dividend as of 12/30/00, multiply it by its frequency (e.g. quarterly dividends by four), and then divide by the 12/30/00 stock price. If the time elapsed between the dividend and 12/30/00 is longer than twice its stated frequency, indicating that the dividend has been discontinued, or if we find no regular

\(^{13}\) Every investment manager, U.S. or otherwise, that “(1) use[s] any means or instrumentality of United States interstate commerce in the course of [its] business; and (2) exercise[s] investment discretion over $100 million or more in Section 13(f) securities” must disclose its quarter-end holdings of 13(f) securities
dividend, then the dividend yield is zero. There are 92 Canadian stocks on both CRSP and the 12/30/00 official list; the yield of stock \( s \) is \( Y_s \), which has a maximum of 6.9% and a mean of 0.9% (49, or over half, have yields of zero). The Thomson data shows holdings of these stocks by 12 Canadian and 1149 U.S. management companies. For each stock \( s \) we calculate \( USOWN_s = \frac{(\# \text{ shares owned by U.S. managers})}{(\# \text{ shares outstanding})} \) and \( CDNOWN_s = \frac{(\# \text{ shares owned by Canadian managers})}{(\# \text{ shares outstanding})} \) by summing over these managers’ disclosed portfolios. The prediction is that \( USOWN_s \) declines relative to \( CDNOWN_s \) as the dividend of stock \( s \) goes up; the evidence is presented graphically as Figure 5, which has ranges of \( Y_s \) on the horizontal axis, and the averages of \( USOWN \) and \( CDNOWN \) over stocks with yields in those ranges on the vertical axis.

The holding results are strong in the predicted direction. The ratio of U.S. to Canadian holdings is over six for zero-yield stocks, but under two for the high-yield stocks. To establish the statistical significance of this pattern, we regress the holdings difference \( CDNOWN_s - USOWN_s \) on \( Y_s \) (t-statistics in parentheses):

\[
CDNOWN_s - USOWN_s = -0.147 + 2.505 Y_s
\]

\[
(-7.7) \quad (2.28)
\]

\[R^2 = 5.4\% \]

\[N(\text{obs}) = 92\]

The relation is significantly positive, so we conclude that dividends reduce the attractiveness of Canadian stocks to U.S., relative to Canadian, money managers.

We find an active market for lending Canadian firms on their record dates, and we find that the pricing gives, at the margin, about 2/3 of the 15% withholding applied to

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14 We exclude one stock, Enerplus Resources Fund, because it is a closed-end fund, and two more stocks, Boardwalk Equities and Bracknell Corp, because they are not on the official list. Presumably they were not
U.S. investors. We also find that the marginal unit of dividend yield is capitalized at more than its cash value, indicating some effect of Canada’s dividend tax credit. U.S. demand for Canadian stocks should decline, relative to Canadian demand, as the yield increases, and we find that U.S. investment does in fact shrink relative to Canadian investment, as represented by 13(f) filings, as the yield goes up.

IV. DRIP-Discount Arbitrage

In this section we explore the feasibility and cost of an arbitrage trade in DRIP-discount stocks. The trade is to borrow the shares for a dividend record date, take the dividend in shares and reimburse the cash dividend. The point of the trade is to capture (before the transactions cost of selling the shares) the DRIP-discount profit documented by Scholes and Wolfson (1989) with no risk, and only one day’s use of capital. Since any potential lender can earn the profit, on paper at least, by simply not lending and taking the shares himself, the relevant empirical question is whether the shares can be borrowed at a price that splits the profit with the borrower.

When a stock has a DRIP discount of $x$, what that means is that the investor can elect to take his dividends in shares, where the effective purchase price is $(1-x)$ times the market price per share. So if the market price is $S$ and the cash dividend is $d$ per share, then the investor can elect to take $d/[(1-x)S]$ shares with market value of $d/(1-x)$. If the investor borrowed the shares then he must reimburse the $d$ to the lender, so his profit, gross of borrowing expense, is $d/(1-x) - d = (xd)/(1-x)$. Borrowing the share requires collateral of $(1.02)S$, so the gross profit per dollar of collateral is $(1/1.02)[x/(1-x)](d/S)$. If

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included because the list was compiled 12/15/00, but Boardwalk and Bracknell commenced U.S. trading on 12/19/00 and 12/26/00, respectively. No U.S. or Canadian manager reported any holding of either.
the stock’s specialness is \( s\% \) and the holding period for a record-date loan is \( n \) calendar days, then \((s/100)(n/360)\) is the specialness cost per dollar of collateral. The empirical question is how these two quantities compare.

For our tests we use a list of stocks, compiled by DRIP Investor,\(^{15}\) which had DRIP discount programs during our sample period. There are 90 stocks on the list, but one – TransCanada Pipelines – is removed because it is Canadian, and therefore also subject to the Canadian dividend arbitrage explored above. For most stocks the DRIP discount is a fixed percentage (usually 3 to 5%); for the 11 stocks which report a discount “up to” \( x \), we take the discount to be \( x \). We identify 205 dividend record dates of these stocks from 11/98 through 10/99; Figure 4 is a graph of loan volume around the record date, analogous to Figures 1 and 2 (the graph represents the 188 record dates with ten trading days on either side within the sample). Loan volume spikes over 100% for the one day, so the interaction between lending and record dates is easily significant. Specialness is observable, due to at least one Medium or Large loan, on 105 of the 205 record dates.

For each of the 105 record dates \( i \) we calculate two statistics: \( PROFIT_i \), which is 

\[
\frac{1}{1.02} \left[ \frac{x}{1-x} \right] \left( \frac{d}{S} \right) 
\]

from above, using the closing stock price before the record date for \( S \), and \( COST_i \), which is \((s/100)(n/360)\), where \( n \) is the number of calendar days from the record date to the next trading date. The average of \( PROFIT \) is 5bp, the average of \( COST \) is 0.34bp, and the average of \( COST/PROFIT \) is 5%. Regressing one on the other, we get

\[
COST_i = -0.00001 +0.103PROFIT_i \quad R^2=23.6\% \quad N=105
\]

\(^{15}\) Thanks to Chuck Carlson for providing this list.
The relation is strong and positive; the cost goes up significantly but slowly with the profit, giving a tenth of the marginal unit of gross profit to the lender.

The big picture is that the crucial piece of the arbitrage, the equity loan, is feasible and the wholesale price leaves plenty of room for a retail markup and a net profit. What the data cannot tell us is why the shares loan out in the first place. The custodial clients could be simply unaware, or they could be aware but prefer or need to take cash over shares worth more on paper, perhaps due to trade-execution or tax problems. They may also be tracking an index including the stock, and therefore wary of temporary over weighting from taking and later selling the shares. In any case, their willingness to lend at the prices we observe creates a modest but dependable profit opportunity.

V. Summary and Conclusion

Equity loans unbundle ownership of record from beneficial ownership. The record dates of corporate events are when this matters, so they are the moments when the role of the equity-loan market as a market for ownership of record competes with its usual role as a facilitator of short sales. With a year of transactions by a major lender, we characterize the market for ownership of record on three categories of record dates: those of votes, those of dividends from Canadian firms and those of dividends with reinvestment discounts. We summarize the results and offer some interpretations.

V.A Votes

A loan on a voting record conveys votes. We find abnormally large loan volume on voting record dates, relative to surrounding days, and we find the excess volume to be particularly high for proposals of lagging firms, especially those with close votes, and for
management proposals related to compensation. Loan volume correlates with more support for shareholder proposals, and less support for management proposals. The surge in loan volume does not, however, correspond to a loan-price increase.

The high record-date loan volume and the cross-sectional relations indicate an active market for voting rights, with demand increasing when the marginal value of a vote would intuitively be higher, and with positive correlation to support for proposals that shareholders would presumably support more, and negative correlation to support for proposals they would support less. Considering the absence of a price effect, it appears that the lenders are not so much selling their votes as indifferent to them. Like the broker votes in Bethel and Gillan (2002), this market for voting rights moves the economy away from the one share/one vote economies explored in the theoretical corporate-control literature (e.g. Grossman and Hart (1980), Shleifer and Vishny (1986)), and toward an economy where investors exercise control and expose their wealth according to separate demands. Theoretical modeling of this expanded strategic environment is a promising area for further research.

V.B Canadian Dividend Arbitrage

The transactions in our database show lenders claiming 2/3 of the 15% withholding from the marginal unit of dividend yield. Ex-day price returns show the market capitalizing the marginal unit of dividend yield at more than its cash value, showing some incidence of the Canadian dividend tax credit. The reclamation and the market capitalization results predict that Canadian investors’ demand for Canadian stocks increases, relative to the demand of U.S. investors, as the yield goes up. We confirm this prediction in the disclosed holdings of U.S. and Canadian money managers. So a
Canadian firm’s dividend decision affects the international distribution of its shares; the
economic significance of this effect is another interesting topic for future work. One
potentially interesting angle is the effect of consolidating dividends in fewer payments;
we find reclamation for dividends above 30bp but not below, so a Canadian firm that
finds a 100bp annual yield optimal may be more attractive to U.S. investors if it makes
one annual payment of 100bp, rather than four quarterly payments of 25bp.

V.C Reinvestment Discounts

The existence of DRIP-discount profit opportunities is demonstrated by Scholes
and Wolfson (1989). What we add is direct evidence that most of the paper profits are
available, net of loan costs, with no risk. An investor who borrows a DRIP-discount
stock for a dividend record date chooses whether to take the cash or the shares, and must
reimburse the cash. There is consequently a gross profit in taking the shares, where the
cost of the arbitrage is the pricing of the loan. We find that loan volume of these stocks is
more than double on dividend record dates from their levels on surrounding dates. We
also find that loan pricing increases with the profit implied by the dividend yield and the
discount, but at a rate that gives only 10% of the marginal unit of profit to the lender.
Scholes and Wolfson (1989) view the DRIP discount as a mechanism for “decentralized
investment banking;” one perspective on our results is that the lending market allows a
DRIP-discount stock’s investors to pass this underwriting along, at low transactions cost,
to other investors who are better at it. Why the lenders’ cut is so small is another puzzle
for future research.
References


Appendix: Canadian Dividend Tax Credit

This is the calculation of the marginal tax rate on dividends from Canadian corporations referred to in the text. To match the sample period we use Federal and Ontario tax schedules and rates that applied to calendar-year 1999. The investor is assumed to have borrowed a share paying a $1 dividend for the record date of the dividend, and is obliged to reimburse the $1 to the lender. The investor is also assumed to be taxed at the highest marginal rates.

1. Line 120 of Form T1: For $1.00 of dividends one would add $1.25 increasing taxable income by $1.25.
2. Line 221 of Form T1: Allows deduction of “Carrying Charges and interest expenses.” At this point, one deducts $1.00 if you borrowed the shares and had to reimburse the $1.00 dividend to the lender.
3. On Line 236 of Form T1, the net effect of the dividend by this point is that your taxable income is higher by $0.25.
4. On Line 12 of Schedule 1, your federal total tax bill is (0.29)($0.25) = $0.0725.
5. On Line 30 of Schedule 1 using Method B, you still get a credit of (0.13333)($1.25) = $0.1667.
6. On Line 33 of Schedule 1, the net effect on your tax bill is $0.0725 - $0.1666 = -$0.0942.
7. On Line 39 of Schedule 1, the federal surtax of 5% would make a total federal tax of 1.05*(-0.0942) = $0.09891 entered on line 419 of the T1 Form.
8. On Line 3 of the Ontario tax form T1C(ONT) TC-1999, you would take the amount on Line 33 of Schedule 1, -$0.0942, and multiply by 39.5% or -$0.0372.
9. Line 5 of T1C(ONT), Ontario has a surtax of 36%, 0.36*(-0.0372) = -$0.0134.
10. Line 428 of the Federal T1 Form includes the Ontario provincial tax ($0.0134 + $0.0372 = -$0.0506).
11. Line 484 of T1 would give the tax refund of the provincial and federal taxes, Line 419 plus Line 428, $0.0506 + $0.09891 = $0.14951.

So you get $1 from the dividend and reimburse it to the lender, implying no net inflow at that point. But when you pay your taxes, the net effect is you get 14.951 cents for every dollar of dividends on shares you borrowed.
Figure 1. Average of (Shares loaned by our data provider)/(Shares outstanding) around all 6186 voting record dates that have ten trading days on either side within our sample period of 11/1/98 through 10/31/99.

Figure 2. Average of (Shares loaned by our data provider)/(Shares outstanding) around all 121 record dates of regular cash dividends by Canadian firms in the CRSP data that have ten trading days on either side within our sample period of 11/1/98 through 10/31/99.
Figure 3. Specialness cost of loan of Canadian firms on dividend record dates plotted against the dividend divided by the share price.

Figure 4. Average of (Shares loaned by our data provider)/(Shares outstanding) around all 188 record dates of regular cash dividends by firms with DRIP discounts that have ten trading days on either side within our sample period of 11/1/98 through 10/31/99.
Figure 5. Holdings of Canadian firms by U.S. and Canadian institutions as of 12/30/00, sorted by dividend yield. Holdings data are from 13f filings reported by Thomson Financial.
Table I
Dependent Variable is Excess Vote-Day Loan Volume

The sample is all nonroutine proposals of large firms, as defined and collected by the Investor Responsibility Research Center, such that there are 10 trading days before and after the record date of the proposal within the period 11/1/98 through 10/31/99. In each regression the dependent variable is $X_{LOAN}$, defined as the number of shares loaned on the record date of a proposal minus the average number of shares loaned over the ten trading days before and the ten trading days after, divided by the number of shares of the firm outstanding, and multiplied by 100 (i.e. in percentage terms). $UPERF$ is 1 if the firm’s total stock return for the year ending 10/31/98 was below the average total return of stocks with the same two-digit SIC code, and is 0 otherwise. $URATE$ is 1 if the firm’s long-term senior bond rating, as of 9/30/98, was below the median rating for firms with the same two-digit SIC code. $CLOSE$ is 1 if the vote for the proposal was within 5% of the vote required for passage, and is 0 otherwise. $EXTERNAL$, $INTERNAL$ and $COMP$ are 1 if the proposal is an External, Internal or Compensation issue (as defined in the text), respectively, and are 0 otherwise. T-statistics are below, in italics.

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*Significantly positive at the 5% level
#Significantly positive at the 10% level

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*Significantly different from 0 at the 5% level
**Table II**  
**Dependent Variable is Vote in favor of the proposal**

The sample is all nonroutine proposals of large firms, as defined and collected by the Investor Responsibility Research Center, such that there are 10 trading days before and after the record date of the proposal within the period 11/1/98 through 10/31/99. In each regression the dependent variable is FOR, defined as the percentage vote for the proposal. \( XLOAN \) is defined as the number of shares loaned on the record date of a proposal minus the average number of shares loaned over the ten trading days before and the ten trading days after, divided by the number of shares of the firm outstanding, and multiplied by 100 (i.e. in percentage terms). \( EXTERNAL, INTERNAL \) and \( COMP \) are 1 if the proposal is an External, Internal or Compensation issue (as defined in the text), respectively, and are 0 otherwise. There are also three interaction variables included which multiply \( EXTERNAL, INTERNAL \) and \( COMP \) by \( XLOAN \). T-statistics are below, in italics.

Depvar is FOR

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