

Using AI to Characterize Financing Between Related Parties

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Benjamin Alarie



Bettina Xue Griffin



Abdi Aidid

Benjamin Alarie is co-founder and CEO at Blue J Legal and a professor at the University of Toronto. Bettina Xue Griffin is a legal research associate and Abdi Aidid is the VP of Legal Research at Blue J Legal.

In this article, the authors examine machine learning and the common law factors

that affect the debt-versus-equity analysis by examining the effect of these key factors on a subset of court cases.

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The law is full of gray areas. Rules can be complex and invite small-scale disputes over interpretation and application. Standards are naturally broader and inescapably involve gray areas. Tax law exhibits gray areas in detailed rules in which there is often a disagreement over whether a particular definition applies, as well

as in the high-level application of specific standards (for example, “capital versus income” or “debt versus equity”).

Technological advancements in the last 10 years have made it possible to explore the application of data-driven tools to the legal field. But how do these data-driven tools help tax practitioners better understand the rules and standards developed by the courts?

By applying machine learning (the use of algorithms and statistical models to learn from data without explicit programming) to analyze the facts and circumstances of past situations on the one hand and the outcomes in those cases on the other, it is possible to uncover hidden patterns in the existing publicly available data to predict the outcome of new scenarios. Tax practitioners can leverage these patterns to better understand the amorphous standards enunciated by the courts. The application of machine learning can bring clarity to deeply textured common law principles so that tax practitioners can deliver better and more nuanced advice.

Take, for example, the question of whether funds supplied to a business are best characterized as giving rise to a debt or equity interest. This question has a range of important implications including the tax treatment of a reimbursement, the deductibility of interest payments on purported debt, and the availability of the bad debt deduction. The characterization exercise can be complex and depends on the extent to which the transaction complies with arm’s-length standards and normal business practices. In many cases, assessing the substance of a particular transaction requires a subtle and detailed examination of more than a dozen different factors.

Further, the issue of whether a transfer constitutes a debt obligation or equity contribution between related parties is frequently litigated and attracts close scrutiny from the IRS and the courts.¹ We examined a subset of cases that have a debt or equity determination based on the merits of the case as opposed to cases that were resolved on other grounds. Of the 259 debt-versus-equity cases we have examined, 196 cases (76 percent) were in the context of a related-party transaction. Advising on the transfer of property between related parties warrants careful consideration.

Also, when we examine these related-party transaction cases, a clear pattern emerges. Of these cases, only 48 (24 percent) of the situations were found by the court to constitute a debt obligation as opposed to 148 cases (76 percent) that were found to constitute an equity interest. Further, for cases involving closely held corporations, only five cases (12 percent) constituted a debt, as opposed to the 38 cases (88 percent) of equity. We can conclude that in the vast majority of cases in which the issuer and holder are related parties, the transfer will be considered a contribution for equity rather than a contribution for a debt obligation. Contrast this with cases that did not involve related parties, and it appears that transfers between related parties have a higher probability of being classified as an equity interest. Of the 63 cases involving transfers between non-related parties, 25 cases (40 percent) were characterized as a debt by the court, as opposed to the 38 cases (60 percent) of equity.

Over the past four years, there have been significant changes to the regulations that affect the debt-versus-equity question, with the most recent change effective as of November 4, 2019. These changes make it even more important to gain a clear understanding of the relevant common law factors that affect the debt-versus-equity analysis. Our discussion will explore this effect with specific key factors in the debt-versus-equity analysis by examining the effect of these key factors on a set of 259 court cases.

¹ *Rogers v. Commissioner*, T.C. Memo. 2018-53; *Fin Hay Realty Co. v. Commissioner*, 398 F.2d 694, 697 (3d Cir. 1968).

The Common Law Test for Debt Versus Equity

The debt-versus-equity question is largely relegated to the common law.² The central inquiry is the “extent to which the transaction complies with arm’s length standards and normal business practice.”³ The courts have established a list of recurring factors to determine whether a transfer should be characterized as a debt interest between the contributing party (the lender) and the receiving business (the borrower) or whether the transfer resulted in an equity interest between the contributing party (the holder) and the receiving corporation (the issuer).⁴

The courts have further expanded on this list of factors to carefully scrutinize transactions between closely held corporations.⁵ Whether a transfer is characterized as a debt interest between the contributing party (the lender) and the receiving business (the borrower) depends on a variety of factors developed through the common law. Some of the factors considered include (1) the labels given to the transfer by the parties and the nature of the written instruments (if any) evidencing the transfer and indebtedness; (2) the presence or absence of a fixed maturity date and the right to enforce payments; (3) the “thinness” of the capital structure in relation to the debt, that is, the debt-to-equity ratio; (4) the failure of the debtor to repay; and several other, less significant, factors.⁶

The existence or absence of any single factor is not determinative.⁷ These factors are aids to evaluate the ultimate question: “Was there a genuine intention to create a debt, with a reasonable expectation of repayment, and did that intention comport with the economic reality of creating a debtor-creditor relationship?”⁸

² Note that obligations issued by large multinational enterprises are now subject to complex regulations under section 385.

³ *Estate of Mixon v. United States*, 464 F.2d 394, 402 (5th Cir. 1972).

⁴ *Busch v. Commissioner*, 728 F.2d 945, 948 (7th Cir. 1984), *aff’d* T.C. Memo. 1983-98.

⁵ *Rogers*, T.C. Memo. 2018-53.

⁶ *Busch*, 728 F.2d 945, 948, *aff’d* T.C. Memo. 1983-98.

⁷ *Fin Hay Realty*, 398 F.2d 694.

⁸ *Litton Business Systems Inc. v. Commissioner*, 61 T.C. 367, 377 (1973).

The Changes to the Regulations

On November 4, 2019, reg. section 1.385-2 was eliminated.⁹ These regulations established a minimum threshold of documentation in order for a purported debt obligation among related parties to be treated as debt for federal income tax purposes (the “documentation regulations”). The documentation regulations were intended to impose discipline on related parties by requiring timely documentation and financial analysis similar to the documentation and analysis created when transfers are made between unrelated parties.¹⁰

The documentation regulations required a minimum of documentary evidence of four key characteristics of indebtedness: (1) a legally binding obligation to pay; (2) creditors’ rights to enforce the obligation; (3) a reasonable expectation of repayment at the time the interest is created; and (4) an ongoing relationship during the life of the interest consistent with arm’s-length relationships between unrelated debtors and creditors.¹¹ These characteristics are drawn from the case law.

The elimination of the documentation regulations was a shift away from codified minimum thresholds back to the standards established by the common law. Accordingly, it is more important than ever for practitioners to understand each factor of the common law test to accurately evaluate transfers between related parties.

Applying Machine Learning

It is possible to identify patterns within a dataset of past debt-versus-equity cases by applying machine learning algorithms. For exposition purposes, we will examine the factors that pertain to the central question whether the transaction “complies with arm’s length standards.” In other words, would a neutral arm’s-length party have also entered into the same transaction with this particular

issuing corporation and would they have conducted themselves the same way? If so, the concerns about the fact that the transaction is between related parties are largely assuaged.

The factors we will examine are:

- the presence of conventional indicia of a debt;
- the right to enforce payments; and
- the history of repayment.

When we examine some of these common law factors more closely and then apply machine learning algorithms to analyze the patterns in the data, we can observe the following:

- conventional indicia of a debt, such as the existence of a loan document, are relatively weak factors in affecting the overall outcome;
- the right to enforce payments is a relatively stronger factor affecting the overall outcome; and
- the actual history of repayment can be a strong factor affecting the overall outcome.

To demonstrate these findings, we can compare two recent cases involving related-party transactions. The first case, *Ferguson*,¹² contains many hallmarks of an equity transaction. The second, *Illinois Tool Works*,¹³ contains many hallmarks of a debt transaction.

Ferguson

In *Ferguson*, the petitioner was an individual who operated a custom home construction business. The petitioner was also the majority shareholder of multiple corporations through which he operated his business. Unfortunately for the petitioner, various homeowners commenced legal action against him and his corporations alleging negligent work. As part of the settlement with the homeowners, the petitioner transferred nine parcels of real estate to them and provided them with a check. One of his closely held corporations, Pinnacle Precast Co. (Pinnacle), which was also named in the

⁹T.D. 9880.

¹⁰*Id.*

¹¹REG-108060-15.

¹²*Ferguson v. Commissioner*, T.C. Memo. 2019-40.

¹³*Illinois Tool Works Inc. v. Commissioner*, T.C. Memo. 2018-121.

lawsuit, recorded the fair market value of the real estate and the check as a loan from the petitioner. No written loan documents were prepared, and no interest was accrued on the loan. A year later, the petitioner ceased operating Pinnacle and essentially relieved Pinnacle of the obligation to repay.

Despite the petitioner's attempt at classifying the transfer as a loan, the court concluded that this transaction lacked many of the hallmarks of a debt obligation. If we input the facts of *Ferguson* into our machine learning algorithm, it correctly predicted a finding of equity with more than 93 percent confidence.

Illinois Tool Works

In *Illinois Tool Works*, the petitioner, Illinois Tool Works Inc., was a corporation with many domestic and foreign subsidiaries. Through a series of transfers, one of Illinois Tool Works' controlled foreign corporations transferred money to another one of Illinois Tool Works' CFCs, making this a related-party transaction. The parties entered into a loan agreement that required payment of interest and repayment of principal at fixed maturity dates. Each year, the CFC receiving the financing made interest payments that were recorded on both parties' books.

The IRS assessed the transaction as a disguised dividend and not a bona fide loan. The Tax Court applied the factors established by the Seventh Circuit in *Busch* and found that "at the time of the withdrawals, the taxpayer intended to repay them" and thus found a debt obligation existed.¹⁴ The machine learning algorithm trained on the dataset of debt — versus-equity cases correctly predicted a finding of debt with a confidence of 89 percent.

The Significance of Conventional Indicia of a Debt

Some conventional indicators of a debt are: The obligation is documented; the obligation has a fixed maturity date or the obligation is payable on demand; and the obligation specifies an interest rate. In *Ferguson*, the

machine learning algorithm trained on the dataset of debt-versus-equity cases correctly predicted the outcome would be equity with a confidence of 93 percent. The transaction in *Ferguson* lacked all these aforementioned conventional indicia of a debt.

But how might the outcome have changed if some of the conventional indicia of a debt were present? If we alter some of the facts to include the existence of a loan document, with a fixed maturity date and a set amount of interest, the outcome would still be equity with a confidence of 92 percent. Despite the formal indicia of a debt, the transaction in question in substance still more likely resulted in an equity interest.

In our second case, *Illinois Tool Works*, the machine learning algorithm correctly predicted the outcome would be debt with confidence of 89 percent. The transaction in *Illinois Tool Works* did have many of the formal indicia of a debt. However, after altering some of the facts to remove the existence of a loan document, with a fixed maturity date and a set amount of interest, the outcome would still be debt with confidence of 86 percent.

For related parties, creating the formal indicia of a debt by papering the transaction like a debt may not be enough to outweigh other indicators that point toward an equity transaction in substance. This makes sense as related parties could easily paper the transaction one way but still operate outside of that agreement. Again, courts will closely scrutinize the substance of the transaction and the true intent of the parties when they are related.

The Significance of the Right to Enforce Payment

The right to enforce payment can manifest in different ways such as through the existence of a security, guarantee, an acceleration clause, or a sinking fund. When we alter the facts of *Ferguson* to include the right to enforce payment and include the fact that the obligation for repayment is not dependent solely on the profitability of the issuer, the machine learning algorithm predicted an equity outcome with a confidence of 89 percent. That represents a

¹⁴ Citing *Busch*, 728 F.2d 945, 948, *aff'g* T.C. Memo. 1983-98.

change of +4 percent of confidence in the equity outcome.

When we alter the facts of *Illinois Tool Works* to reduce the ability of the holder to enforce payment, the machine learning algorithm predicts a debt outcome with a confidence of 81 percent. That represents a change of -8 percent of confidence in the debt outcome.

The right to enforce payment is thus a slightly stronger indicator of the outcome. As the Seventh Circuit has stated, “Whether withdrawals by a shareholder from a corporation are treated for tax purposes as loans or dividend turns on whether, at the time of the withdrawals, the taxpayer intended to repay them.”¹⁵ This intent can be evidenced by enforcement rights given at the time the advances were made.¹⁶ A lack of enforcement rights can thus indicate a lack of intent to repay the advances because without those rights, the lender has limited recourse upon default.

The Significance of Actual Repayment

Whether the issuer actually made regular payments is an even stronger indicator of the outcome. Repayment of the principal or regular payments of interest on that principal demonstrates that the parties behaved as though the advances were a debt obligation. Further, the inverse also holds true. If the holder acquiesced in the nonpayment, this behavior demonstrates that the parties did not truly consider the advances a bona fide debt.

When we alter the facts of *Ferguson* so that the issuer made payments to the principal and made regular payments of interest and included the fact that the holder never acquiesced to nonpayment, the machine learning algorithm predicted an equity outcome with a confidence of 84 percent. That represents a -8 percent change from its previous equity prediction.

Even more illuminating, when we alter the facts of *Illinois Tool Works* to remove the fact that the issuer made regular payments and then include the fact that the holder acquiesced in

the nonpayment, our machine learning algorithm predicted an equity outcome with 52 percent confidence. That represents a change of -41 percent from a previous debt prediction. Also, a confidence of 52 percent indicates this is a borderline case, meaning a court could just as likely find for either outcome.

The strong significance of the repayment history aligns with legal intuition. When it comes to closely held corporations or other related parties, the actual behavior of the parties after the advances are made is highly indicative of the parties’ true intent and whether that intent comports with “the economic reality of creating a debtor-creditor relationship.” Often in related-party cases, the economic reality is determined by observing how the parties actually conducted themselves and then comparing that to whether an unrelated party would have done the same.¹⁷

Conclusion

Unlike the codification of the economic substance doctrine through statutory enactment,¹⁸ the determination of whether a capital contribution to a corporation results in a debt obligation or an equity interest is still largely left to the common law. Particularly with the elimination of the documentation regulations, it is even more important to understand the significance of each of the common law factors.

The vast majority of debt-versus-equity cases are litigated within the context of a related-party transaction. Sometimes the parties are a shareholder and their closely held corporation. In these situations, both the IRS and the courts will closely scrutinize the transaction to ensure that the objective hallmarks of a debt transaction actually comport with the parties’ subjective intention.

By comparing two recent decisions involving related parties, one with a debt outcome and the other an equity outcome, we have been able to interrogate and illustrate the

¹⁵ *Busch*, 728 F.2d 945, 948, *aff’d* T.C. Memo. 1983-98; *Illinois Tool Works*, T.C. Memo. 2018-121.

¹⁶ *Illinois Tool Works*, T.C. Memo. 2018-121.

¹⁷ See, e.g., when the courts discuss whether an unrelated party would have entered into the same transaction: *Rogers*, T.C. Memo. 2018-53.

¹⁸ Christopher Yan, “Economic Substance: A Machine Learning Perspective on the Multi-Factorial Analysis,” *Blue J Legal*.

relative significance of various factors as they pertain to related parties.

As we saw, the presence of formal indicia of a debt such as a loan document is not significant in relation to other factors that address the substance of the transaction as opposed to the way it was papered. The existence of enforcement rights is slightly more significant, but how the parties behaved in terms of any repayment is the most significant out of the three.

Machine-learning-powered systems would allow lawyers to make more confident and efficient predictions based on all the relevant information. And while there remains some anxiety about the disruptive potential of artificial intelligence for the legal field, it is important to recognize that machine learning is not a replacement for the judgment of human lawyers. Instead, it is a powerful new tool to augment their professional knowledge and instincts. ■

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