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FINANCIAL BENEFITS, TRAVEL COSTS,
AND BANKRUPTCY**

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ABSTRACT

We are the first to show that the cost of personal bankruptcy filers traveling to their bankruptcy trustees affects bankruptcy choices. We use detailed balance sheet, income statement, and location data from 400,000 Canadian bankruptcies. To control for endogenous trustee selection, we use the location of local government offices as an instrument for the location of bankruptcy trustees (while filers interact with trustees, and trustees interact with local government, filers do not interact with the local government). We find that increased travel costs reduce the number of filings. Furthermore, for those individuals who do file, we find that their increased travel costs need to be compensated by increased financial benefits of bankruptcy. Filers without cars (higher travel costs), as well as those with jobs (higher opportunity costs), receive larger per-kilometer financial benefits from bankruptcy.

JEL Codes: G23, G33, D14, K35

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1. Introduction

This paper examines whether distance-related costs affect the number and characteristics of individuals entering complex financial contracts. Ever since Hotelling (1929), it is well understood that parties to a transaction with higher distance-related costs will undertake that transaction only if they are compensated with some additional benefits. For example, the literature on spatial price discrimination (summarized by Varian, 1989) argues that sellers need to provide additional benefits to more distant buyers (e.g., lower prices or lower delivery fees) to induce those more-distant buyers to transact. Similarly, the very large gravity literature (summarized by Head and Mayer, 2013) has shown that larger distances between the parties will lead to fewer transactions if there is no compensating benefit to induce more trade.

We examine this hypothesis in the context of personal bankruptcy. Specifically, we examine whether the costs of a bankruptcy filer traveling to a bankruptcy trustee affects bankruptcy-related choices. Our unique Canadian data allow us to observe both the actual financial benefits and the actual financial costs from the bankruptcy transaction, in addition to being able to observe travel and distance costs. Our data thus allow us to examine the effect of distance costs on both the extensive margin and the intensive margin. The extensive margin hypothesis tests whether variation in distance costs across regions (e.g., rural versus urban) affects the aggregate quantity of individuals in the region who choose to file or not to file. The intensive margin hypothesis examines differences in distance costs across individual filers — specifically, whether filers with larger distance costs will require larger net financial benefits from the bankruptcy transaction.

Our paper is the first in the literature to show that distance costs matter in the context of personal bankruptcy. To the best of our knowledge, it is also the first to show that distance-related costs affect the net financial benefits required from complex financial transactions, such as bankruptcy filings, where the financial costs and financial benefits of the transaction can be measured only by using complete balance sheet data of the individual.

We use an extremely rich database containing full details of every bankruptcy e-filing in Canada, made available to us by the Canadian bankruptcy regulator: the Office of the Superintendent of Bankruptcy (OSB). The richness of our data flows from the fact that personal bankruptcy is one of the only times when an individual is legally required to publicly disclose full balance sheet and full income statement data. To the best of our knowledge, our Canadian

database describing the full balance sheets of almost 400,000 individual bankruptcy filings is unique in the literature.

This full balance sheet data from individual bankruptcy filings allow us to measure very precisely the various financial benefits and financial costs of entering into the personal bankruptcy transaction. The key concept of the *net financial benefits of bankruptcy* (FBB) was introduced by Fay, Hurst, and White (2002). FBB captures the various financial gains and losses to an individual when bankruptcy is declared based on bankruptcy law. Broadly speaking, under bankruptcy law, the net financial benefit to the filer is the amount of unsecured debt that is discharged in bankruptcy (which is a benefit to the filer) minus the liquidated nonexempt assets that are used to repay creditors (which the filer loses in bankruptcy).

In terms of measuring travel and distance-related costs, our tests exploit the fact that, under Canadian bankruptcy law, all bankruptcy filers are required to meet face-to-face with a bankruptcy trustee (a professional accountant, licensed by the government to make bankruptcy filings) before and during the bankruptcy process. Thus every bankruptcy filer faces the cost of physically traveling to meet his or her bankruptcy trustee. Accordingly, a potential bankrupt located in an area close to a bankruptcy trustee will face lower geographically imposed filing costs compared to a potential bankrupt who lives in an area far from a bankruptcy trustee.

The key independent variable in all our tests is distance-related costs, as measured by distances traveled between the location of the filer and the location of the trustee. The main methodological challenge we face, however, is that the distance between an individual filer and his or her trustee is not exogenous because an individual filer is able to endogenously select the trustee of his or her choice. This ability to select a trustee endogenously can lead to either or both omitted variable bias or reverse causality.

Omitted variable bias could occur if some unobserved trustee level characteristic (e.g., heterogeneous marketing effort by trustees) would cause an individual filer to endogenously select to travel farther to a trustee who has greater marketing expenditure. So, we have an omitted variable problem in that the unobserved trustee marketing variable could be correlated with both the distance traveled to the trustee (the independent variable) and the financial benefits of bankruptcy (the dependent variable in the intensive margin regression). We require an instrument for distance costs that is not correlated with the omitted trustee marketing variable.

Reverse causality is also a potential problem for our intensive margin hypothesis, where distance costs of bankruptcy are regressed on financial benefits of bankruptcy. Higher distance costs can cause the individual to file when he or she receives higher financial benefits, or, alternatively, higher financial benefits can cause the individual to accept higher distance costs of filing. However, by using a plausibly exogenous instrument for distance costs, we can examine how exogenous variation in distance costs affects the endogenously chosen financial benefits required from a bankruptcy.

The aim of our identification strategy, therefore, is to find an instrument for the distance from the filer to his or her selected trustee that reflects exogenous variation in the distance-related costs of filing. We use the distance between filers and their closest local government office as an instrument for the distance between the filers and their bankruptcy trustee. Examples of the specific local government offices we examine are the administrative offices of city managers, town managers, mayors, county supervisors, provincial premiers, etc. (as defined by SIC code 9111). The institutional justification for this instrument is that bankruptcy trustees are required to undertake significant interactions with local government officials (e.g., examining title deed documents on filers' real estate debts and determining current valuation of proximate real estate in order to determine the current market value of the filer's assets). Trustees thus have an incentive to locate in close proximity to local government offices. Our first stage evidence indeed shows that the distance from the filer to his or her bankruptcy trustee is highly correlated with the distance from the filer to his or her closest local government office.

Our identification strategy exploits the institutional facts that, while bankruptcy trustees are required to interact institutionally with local government offices and while bankruptcy filers are required to interact institutionally with bankruptcy trustees, there is no institutional need for bankruptcy filers to interact with local government offices. Our identification strategy is thus somewhat similar to the peer-to-peer approach used by authors such as De Giorgi et al. (2010), which exploits situations where Person A interacts with Person B, B interacts with C, but A does not interact with C. Our exclusion restriction is that the distance between filers and local government offices should not affect bankruptcy choices. Institutionally, there does not seem to be a systematic reason why the geographic location of local government offices relative to the location of filers should play a role in bankruptcy choices. We provide supporting evidence for this concept using our rich list of observable variables (including individual level demographics,

reasons for financial distress, and neighborhood level characteristics), all of which are uncorrelated with the distance between filers and local government offices.

Our use of the distance to the closest local government office as an instrument fits into a large literature, where distance is used as an exogenous instrument in a variety of contexts. Well-known examples include Frankel and Romer (1999), who use distance between countries as an instrument for international trade, and Card (1995), who uses distance from the closest college as an instrument for education.

The richness of our data also provides many additional measures of travel costs. Our data are similar to that used by most of the distance literature in that we can measure the physical distance (in kilometers) between the parties to a transaction (in our case, filers, trustees and local government offices). In addition, however, our detailed balance sheet and income statement data also allow us to measure other travel-related costs. First, we are able to observe whether each individual in our bankruptcy filer database owns a car, because a car is an asset that needs to be reported in the bankruptcy balance sheet. We can thus test the hypothesis that travel costs for car owners are lower than for those without cars (who will require public or other means of transport in order to undertake the bankruptcy filing transaction). Second, we are able to observe whether each individual in our database is employed or unemployed at the time of the filing, because employment income needs to be reported in the bankruptcy income statement. We can thus test the hypothesis that the higher the opportunity costs of travel from wage income forgone, the larger the financial benefits from traveling that are required to make the travel worthwhile.

For our main intensive margin results, we find that each 1-kilometer increase in trustee-to-filer distance leads to an average increase in the financial benefits of bankruptcy (net of financial costs) of \$34.¹ Furthermore, we find that those bankruptcy filers with a car (who have lower transport costs) receive fewer net financial benefits from their bankruptcy (\$19 per kilometer traveled), compared to filers without a car (\$36 per kilometer traveled). Similarly, we find that employed bankruptcy filers (who have a higher opportunity cost of travel) receive more net financial benefits from filing (\$39 per kilometer traveled) compared to filers who are unemployed (\$31 per kilometer traveled).

¹ All dollar amounts used in this paper are in Canadian dollars.

2. Relationship to the Literature

Our paper brings together two separate literatures that have not previously cited each other: 1) the literature on personal bankruptcy, and 2) the literature on finance and geography. A large number of different factors have been proposed in the literature to explain the personal bankruptcy decision (e.g., Fay, Hurst, and White, 2002; Gross and Souleles, 2002; White, 2007, 2011; Li, White, and Zhu, 2011, and many others). One important explanation for bankruptcy filing is based on the various costs of filing. Livshits, MacGee, and Tertilt (2010, p. 166), for example, argue that the “most commonly cited explanation” for the levels of bankruptcy is “the *cost of filing* for bankruptcy” (italics added). The effect on bankruptcy choices from costs related to filing fees has been discussed by Gross, Notowidigdo, and Wang (2013). The effect on bankruptcy choices from the costs of social stigma has been discussed by Gross and Souleles (2002), Fay, Hurst, and White (2002), and Scholnick (2014). The current paper thus forms part of the existing literature on bankruptcy filing costs, but it examines a new cost of filing not previously examined in the bankruptcy literature: costs related to distance and travel.

The very large finance and geography literature has tended to examine two quite separate reasons for why distance should matter in finance. Most distance-based papers in finance argue that distance matters because of issues related to asymmetric information and monitoring (i.e., where larger distances imply less information between the parties).² But some papers argue that distance matters because of the actual physical costs of moving from one point to another in order to undertake a transaction (e.g., Degryse and Ongena, 2005). Geographic distance has also been shown to affect participation in government programs with complex benefits and costs such as mortgage assistance and modifications (Russell et al., 2014). The issue of the physical costs of moving (rather than information asymmetry based costs of distance) is also central to the gravity-based literature (Head and Mayer, 2013), as well as the spatial price discrimination literature (Varian, 1989). Our paper fits into the latter category, in that a bankruptcy filing does not generally involve issues of asymmetric information and monitoring between the filer and trustee.

² Examples of this literature include papers on the monitoring of firms by investors (Loughran and Schultz, 2005, 2006; Coval and Moskowitz, 1999, 2001; Brennan and Cao, 1997; Kang and Stulz, 1997; Ivković and Weisbenner, 2005), monitoring by analysts (Malloy, 2005; Bae, Stulz, and Tan, 2008), investment by venture capital funds (Lerner, 1995; Bengtsson and Ravid, 2011), monitoring by banks of their loans (Hauswald and Marquez, 2006; Agarwal and Hauswald, 2010); information costs during corporate acquisition (Hau, 2001) and distance from headquarters (Kalnins and Lafontaine, 2013).

This is because the trustee, unlike the creditors, does not bear any financial risk from the current or future behavior of the filer.

While our extensive margin methodology is quite similar to that used in the gravity literature (i.e., where distance is predicted to affect the aggregate quantity of transactions from an area), an important innovation in this paper is our intensive margin methodology (where, for those individuals who are filers, distance is predicted to affect the net financial benefits of bankruptcy). To the best of our knowledge, no previous study has examined how the distance-related costs of entering a financial contract affects the financial benefits required from that contract, where observing the net financial benefits from the contract require data on the full balance sheet of the individual.

3. Institutional Setting: Personal Bankruptcy in Canada

3.1. Financial Benefits of Bankruptcy (Debt Discharged Minus Assets Forgone)

The idea of the net financial benefits of bankruptcy (FBB) is commonly used in the bankruptcy literature (by Fay, Hurst, and White, 2002, among others) to reflect the financial costs and financial benefits associated with filing for bankruptcy. Generally speaking, the financial benefits from bankruptcy accrue from the discharge of unsecured (e.g., credit card) debt, while the financial costs from bankruptcy include the loss of nonexempt assets that are liquidated in order to repay secured (e.g., mortgage) debt. A variety of asset exemptions can exist (e.g., homestead exemptions) specifying which assets are not lost by the filer during a bankruptcy. Table 1 provides details of these exemptions for different Canadian provinces. Ex post, bankruptcy can be thought of as a zero-sum game in that the net financial benefits to the distressed debtor will equal the net financial costs to the creditors.

Because we can observe full balance sheet data (i.e., amounts of secured and unsecured liabilities as well as amounts of exempt and nonexempt assets) for each bankruptcy filer, we can calculate the specific dollar value of the net FBB for each filer. As described in detail below, we use our complete balance sheet data to calculate FBB for all Canadian e-filers, using a methodology that is essentially the same as that used by Fay, Hurst, and White (2002).

3.2. Geographic Costs of Bankruptcy Filing: Interacting with a Trustee

A number of elements in the bankruptcy system in Canada make interaction with a trustee a particularly suitable contract for analyzing the hypothesis that distance costs matter. First, under the Canadian Bankruptcy and Insolvency Act (BIA), every insolvency case in Canada *must* be filed by a bankruptcy trustee to the Canadian bankruptcy regulator, the Office of the Superintendent of Bankruptcy (OSB). Bankruptcy trustees in Canada are accountants (Ramsay, 2003, pp. 387–391) who can become bankruptcy trustees after an extended period of training. This feature of the Canadian bankruptcy system allows us to use our data to identify precisely the universe of all bankruptcy trustees.

Second, various elements of Canadian bankruptcy law require the debtor to conduct face-to-face interactions with the bankruptcy trustee in the trustee’s office rather than over the phone or via e-mail. According to a directive from the OSB (Ramsay, 2002), before the actual filing, the debtor is required to meet the trustee to discuss the bankruptcy process. According to Ramsay (2002, p. 528), “This OSB directive was introduced in response to concerns that individuals were being processed through bankruptcy by clerical personnel in trustee firms without ... an opportunity to meet a trustee.”

Furthermore, additional face-to-face interaction is required because of mandatory credit counseling (Ramsay, 2002, p. 530). Mandatory credit counseling has to occur twice during the bankruptcy process: immediately after the declaration of bankruptcy and then shortly before the bankruptcy is discharged (usually nine months later). Ramsay (2002, p. 530) argues that “most counseling is undertaken by trustees or individual’s (estate managers) within their offices” (p. 530). In addition to these regulatory reasons, face-to-face (rather than electronic) interactions are also required to transfer original documents (e.g., title documents to assets, bank statements reflecting liabilities, etc.). In summary, a significant element of the legal bankruptcy process requires face-to-face interactions between the debtor and the trustee in the trustee’s office.

3.3. Trustees as Officers of the Court and Debtor/Creditor Bias

An important element of the legal responsibilities of Canadian bankruptcy trustees is that they are considered “officers of the court” and are thus legally required to represent the interests of *both* debtors as well as creditors in the bankruptcy process. According to the OSB website, a bankruptcy trustee “has an obligation to look after the *rights of the creditors* and to investigate

the affairs of the debtor, as required. The trustee also ensures that the *rights of the debtor* are not abused” (italics added). In other words, the bankruptcy trustee is legally obligated not to systematically favor either debtors or creditors during the bankruptcy process.

3.4. Trustee Marketing

Even though many elements of the market for bankruptcy trustees are regulated by the OSB (e.g., trustee licensing and maximum pricing), there is still considerable competition among trustees to attract potential filers. Ramsay (2003, p. 389) describes various mechanisms used by trustees to attract filers, which can include extensive advertising campaigns and price setting below the regulated price ceiling. We describe these various strategies as “marketing.” Marketing is pervasive in this industry, because a bankruptcy filing is a rare event for any potential filer, who typically does not have much information on alternate trustees prior to the decision to file for bankruptcy. In this sense, the market for bankruptcy trustees is similar to markets for other kinds of professionals such as divorce lawyers and personal injury lawyers, who use extensive marketing to attract potential clients undergoing rare events. An important constraint on trustee marketing is that, by law, the trustee is an officer of the court and, accordingly, unable to show any explicit bias between debtors and creditors. The trustee is not able, for example, to advertise that it has an explicit pro-debtor bias, e.g., by promising that it will deliver a higher FBB than other trustees. A central element of the empirical strategy used in this paper is that these marketing activities of trustees are unobservable in our data. The following section describes how we address this omitted-variable bias.

3.5. Summary Administration

According to Ramsay (1999), 98% of personal bankruptcies are filed under a process called “summary administration,” which is used for relatively simple filings. The actual process of summary administrations is described by Ramsay as “streamlined” (1999, p. 68) and “routinized” (2003, p. 388). Thus, generally speaking, the service provided by trustees to filers is generic and routine. These simple summary administration files are subject to a “fixed tariff of fees” (Ramsay, 1999, p. 68), which are set by the OSB regulator.

4. Research Design

This paper examines the effect of distance on both extensive margins (i.e., the *aggregate* quantity of bankruptcies per capita across different geographic areas) and intensive margins (i.e., the different financial benefits of bankruptcy across *individual* filers).

4.1. Extensive Margins: Aggregate Variation Across Areas

Our extensive margin hypothesis examines the effect that distance from a trustee has on the number of bankruptcies per capita in an area. This argument states that there will be more bankruptcies per capita in areas where the closest bankruptcy trustee is near (e.g., urban areas), compared to areas where the closest trustee is a greater distance away (e.g., rural areas). We test this hypothesis using models where the dependent variable is either the number of bankruptcies per capita in a geographic area (e.g., postal code), using Tobit or OLS models, or where the dependent variable is the simple count of filings in the area, using negative binomial models.

The main independent variable in all these models is the distance between the centroid of the geographic area to the geographically *closest* trustee. Because the unit of analysis in these extensive margin models is the aggregate number of filers in a geographic area, rather than the individual filer, we cannot observe individual filers or their selected trustees. We argue that the distance from the centroid of an area to the closest trustee to that area, is plausibly exogenous. This type of regression is very similar to that used in the very large gravity literature, where the dependent variable is typically the aggregate quantity of transactions from one area to another (e.g., exports or imports between counties), while the independent variable is a plausibly exogenous measure of distance between the areas (e.g., distance between the centroids of two countries, or the largest cities of two countries), rather than between specific parties.

4.2. Intensive Margins: Variation Across Individual Filers

Our intensive margin hypothesis states that an increase in the distance-related costs of a bankruptcy filing will cause an increase in the financial benefits from the bankruptcy that needs to accrue to an individual filer in order to make the bankruptcy worthwhile. For example, consider two bankruptcy filers, one who has greater distance costs of filing than the other (e.g.,

Filer A lives 10 kilometers away from his trustee, while Filer B lives 50 kilometers away from hers). Our argument is that Filer B will require larger benefits from the bankruptcy than Filer A, in order to compensate for the larger distance costs. Thus, we argue that, among a sample of filers, longer distance to the trustee should be associated with larger financial benefits.

A simple OLS model of this relationship would thus be

$$FBB_i = \alpha + \beta_1 Trustee_Distance_i + \beta_2 Controls_i + \varepsilon_i, \quad (1)$$

where FBB is the financial benefits of bankruptcy and Trustee_Distance is the distance in kilometers between the filers and their selected trustees. The coefficient on the Trustee_Distance term in (1) is predicted to be positive, because the larger the distance costs required to undertake a filing, the larger the FBB required to compensate for those travel costs (i.e., Filer B, who lives 50 kilometers away from a trustee, will require more benefits from bankruptcy than will Filer A, who lives 10 kilometers away).

Specification (1), however, is subject to both reverse causality and omitted variable bias, both of which need to be addressed with an exogenous instrument for Trustee_Distance. Reverse causality occurs because both Trustee_Distance as well as FBB in (1) can be endogenously selected by the individual filer. Thus, causality could run from either distance costs to financial benefits (the filer selects the level of FBB after selecting his or her trustee) or from financial benefits to distance costs (the filer selects the trustee after selecting the level of financial benefits at which to file).

The second reason (1) could be misspecified is because of an omitted variable. As previously described in Section 3.4, a variable reflecting the marketing effort of trustees (Marketing) is omitted in (1). Thus, a more appropriate version of (1) should look like this:

$$FBB_i = \alpha + \beta_1 Trustee_Distance_i + \beta_2 Controls_i + \beta_3 Marketing_i + \mu_i. \quad (2)$$

The coefficient on the (omitted) Marketing term in (2) is predicted to be negative because higher marketing efforts by the trustee will persuade potential filers to file even if they receive lower FBB from the filing. In other words, while greater Trustee_Distance serves as an *impediment* to filing, thus requiring greater FBB as compensation (implying a positive coefficient on Trustee_Distance in (2)), greater Marketing serves as an *inducement* to filing, requiring lower FBB as compensation (implying a negative coefficient on Marketing in (2)). Importantly, the

Trustee_Distance and (omitted) Marketing variables in (2) will be positively correlated if filers travel longer distances to those trustees who do larger amounts of marketing. So, we have an omitted variable problem and will need a plausibly exogenous instrument for Trustee_Distance in (1) that is not correlated with Marketing in (2).

4.2.1. IV Strategy

We use, as an instrument for Trustee_Distance, the distance from the individual filer to his or her closest local government office, which we label Government_Distance. Our data on the location of local government offices include all locations in Canada classified under SIC code 9111. Buildings classified under SIC code 9111 include administrative offices of city managers, town managers, mayors, county supervisors, provincial premiers, etc. Our data include the location of 1,029 separate local government offices in Canada.

We argue that bankruptcy trustees have an institutional incentive to locate within a close distance to local government offices, because much of the work of a bankruptcy trustee entails accessing documentation from local governments. For example, trustees need to provide title deed documentation for the real estate assets of bankruptcy filers. They also need to provide current market valuation of the filer's real estate assets, which could require access to data on recent house price sales that are geographically close to the filer. If trustees do indeed locate within close proximity to local government offices, then we would expect that Trustee_Distance would be correlated with Government_Distance. Our first stage IV results indicate that there is indeed a strong correlation between these two distances.

We provide a number of arguments why the distance from the filer to his or her closest local government office (Government_Distance) should be exogenous with respect to the bankruptcy filing decision. First, while the individual filer needs to interact with the trustee during the bankruptcy process and while the trustee interacts with local government offices, there is no institutional reason why the individual filer needs to interact with local government offices during the bankruptcy process. So, Government_Distance should not have any direct effect on the bankruptcy choices of the individual filer (i.e., our dependent variable). Second, we argue that there does not appear to be any reason as to why Government_Distance should be correlated with the omitted trustee marketing variable. We argue that Government_Distance is an appropriate instrument to use to correct for this omitted variable bias.

Third, we argue that the Government_Distance IV is also not affected by possible neighborhood selection issues. Neighborhood selection issues can occur if trustees endogenously decide to locate in neighborhoods that are close to potential future bankruptcies or that individuals who face potential future bankruptcy decide to endogenously locate in neighborhoods that are close to bankruptcy trustees. By using Government_Distance as an IV, however, we argue that we are able to preclude issues relating to trustees and filers endogenously affecting each other's location decisions. The Government_Distance IV does not reflect the distances between filers and any trustees, but it only captures exogenous variation in travel costs faced by filers.

In addition to our use of the Government_Distance IV to control for possible endogenous neighborhood selection, we are also able to include a large number of observables. For example, for each filer, we include the number of past bankruptcies in the filer's neighborhood. This controls for trustees locating into neighborhoods based on past bankruptcies in that neighborhood or for neighborhood spillover effects due to knowledge flows and/or stigma effects between neighbors (e.g., Fay, Hurst, and White, 2002; Gross and Souleles, 2002; Scholnick, 2014).

Our Government_Distance instrument follows the literature (e.g., Lavy (1996), Mukhopadhyay and Sahoo (2012), and Kumar, Dansereau, and Murray (2012)) in using the distance to one type of service provider (in our case, local government offices) as an instrument for distance to another type of service provider (in our case, bankruptcy trustees), based on the argument that service providers of different types tend to cluster geographically because of their need to interact with each other.

4.2.2. Direction of the Omitted-Variable Bias

In our context, the direction of the bias from omitted variables is defined (e.g., Wooldridge, 2009, p. 89–92) as the predicted sign of the correlation between Trustee_Distance and Marketing in (2) (which we argued above is positive) multiplied by the predicted sign on the Marketing term in the regression on FBB in (2) (which we argued above is negative). The correlation between Trustee_Distance and Marketing will be positive if additional marketing by a trustee causes individual filers to travel longer distances to use that trustee. The coefficient on the Marketing term in the regression on FBB in (2) will be negative if additional marketing by a trustee persuades filers to file even when their FBB from the bankruptcy is lower.

Thus in our context, the omitted-variable bias is negative, implying that the OLS estimate of the Trustee_Distance term in (1) is downward biased. In other words, we can predict that the OLS coefficient on Trustee_Distance in (1) should be lower in magnitude than the IV estimates of the coefficients on Trustee_Distance with Government_Distance serving as an instrument. We show below that this is supported by all of our results.

4.2.3. Trustee Fixed Effects

In addition to using the IV strategies described above, we also include trustee-level fixed effects in our intensive margin regressions. These fixed effects capture the effect of unobservable trustee characteristics on FBB, which may not be captured by the omitted Marketing variable in (2). An example of trustee characteristics that will affect our results is a systematic pro-creditor or pro-debtor bias on the part of individual trustees that may affect their client's FBB. Recall that trustees are legally considered to be officers of the court and thus have a legal obligation to be unbiased between debtors and creditors. It is thus illegal, for example, for a trustee to *publicly* promise (through advertising or marketing efforts) a higher FBB to potential filers compared to other trustees. However, it could be that some trustees may indeed have an *unpublicized* pro-debtor or pro-creditor bias, which will be captured by trustee-level fixed effects on the regression on FBB.

The level of effort extended by individual trustees could also be captured by the trustee-level fixed effects. Recall that individual personal bankruptcy filings were described above as “routinized” and “streamlined.” It may be that individual trustees exert more or less effort to deliver the appropriate amount of FBB for each filer, which will be captured in trustee-level fixed effects.

5. The Two OSB Databases

The OSB has provided us with two separate databases. The first includes counts of every bankruptcy filing in Canada by postal code (irrespective of whether the filing was made using paper or electronically), but it does not include detailed balance sheet and income statement data. We use these data to test our extensive margin hypothesis (i.e., bankruptcy counts per region).

The second database includes every filing made electronically (but not those using paper). This includes details of the filer’s full balance sheet and full income statement, as well as many other filer characteristics. We use these data to test our intensive margin hypothesis (i.e., individual-level filings). The OSB first instituted the e-filing system in 2002, and by 2007 essentially all filings were done electronically (the percentage of electronic filings was 62.2% in 2005, 77.4% in 2006, 97.7% in 2007, and 98.9% in 2008).

We argue that an individual trustee’s choice of whether to use a paper or electronic system for submitting files to the OSB should not introduce issues of selection bias. Indeed, there seems no reason why the individual bankruptcy filer should even be aware of which method is used, given that the filer is not directly involved in the trustee-OSB interaction. Furthermore, the transition to an electronic system was essentially made by all trustees in Canada part way through our sample, so there is apparently no systematic reason why paper filings should be superior to electronic filings.

The unique element of our data is that we have almost 400,000 individual bankruptcy files, including full balance sheets and income statements as well as a variety of other observable variables described below. While some studies in the bankruptcy literature have attempted to utilize the balance sheets of bankrupts, such studies have been severely limited by data constraints. Fay, Hurst, and White (2002) measure FBB using data from the Panel Study of Income Dynamics (PSID), but their data consist of only 254 bankruptcy balance sheets. Hankins, Hoekstra, and Skiba (2011) hand-collect about 250 bankruptcy balance sheets. Similarly, Gross, Notowidigdo, and Wang (2013) hand-collect data on the balance sheets of 6,500 filers.

6. Variables

Table 2 provides data sources and levels of aggregation for all variables used in the study. Tables 3, 4, and 5 provide summary statistics.

6.1. The Financial Benefits of Bankruptcy (FBB)

As described in equation (3), the dependent variable in our intensive margin models is the financial benefits of bankruptcy (FBB). We define individual debtor’s net FBB in the same way as Fay, Hurst, and White (2002):

$$FBB_{it} = \max[D_{it} - \max[W_{it} - E_{it}, 0], 0], \quad (3)$$

where D_{it} is unsecured liabilities of filers eliminated in bankruptcy (which is a benefit from bankruptcy), W_{it} is total wealth of bankruptcy filers minus all secured debts, and E_{it} represents bankruptcy exemptions available to filers in a particular year and province. Under the bankruptcy process, wealth net of exemptions is liquidated by the bankruptcy trustee and used to pay off outstanding secured creditors. Thus equation (3) captures the central idea of bankruptcy, which discharges unsecured liabilities of filers in exchange for filer's nonexempt assets. If assets minus secured debts and exemptions are less than or equal to zero, then there is nothing to distribute among secured creditors and all unsecured debts of the bankrupt are discharged. The central advantage of our data is that we can use our detailed balance sheet information from each bankruptcy filing to calculate a dollar value of FBB for each bankruptcy filer.

Our measure of unsecured liabilities (D) is the direct measure of total unsecured debt on the bankruptcy filer's balance sheet (including credit card and all other forms of unsecured debt). Our measure of wealth (W) is also taken directly from the filer's OSB balance sheet and is calculated as total assets minus total secured debt. This is the amount of positive equity that will be liquidated in bankruptcy. We calculate (E) using the various province-specific exemptions allowed to bankruptcy filers across Canada, as described in Table 1. A key advantage of our data is that we can observe all of the different categories of assets (Table 1) in the filer's balance sheet and can thus calculate the exemptions for each individual.

As we report in our summary statistics (Table 3), the median value of the net financial benefits of filing for bankruptcy, across all 386,000 bankruptcy filers in our sample, is approximately \$32,000 with a standard deviation of approximately \$60,000.

6.2. Distance and Travel Costs

6.2.1. Geographic Distances

We are able to link OSB e-filing data (in particular, the postal code of the filer) with postal code data of individual trustees. This matching allows us to measure the geographic distance between the postal code of the filer and the postal code of both the closest as well as the selected trustee. Canadian six-digit postal codes are extremely small geographic units, containing approximately 13 households on average, and can be smaller than city blocks in urban areas. We use the center point of the postal code as our basis for the geographic location of individual addresses in the postal code. The distance between the filer and the trustee is calculated using the

Haversine formula. For a robustness test, we compute and use road travel time between debtors' and trustees' postal codes.

6.2.2. Car Ownership

A key element of this study is that we can observe various characteristics of filers that can affect their per-kilometer travel costs. In particular, we can observe from our bankruptcy filing data whether bankruptcy filers in the database own a car, because under bankruptcy law a car is considered an asset that has to be declared in bankruptcy. Following several other authors (e.g., Seim and Waldfogel, 2013; Gautier and Zenou, 2010; Baum, 2009), we argue that car ownership affects costs of travel and that filers with cars will have lower costs of accessing trustees compared to filers without cars. We use our data to test the hypothesis that car owners' lower cost of accessing trustees will be reflected in lower benefits received by these filers. Of the 376,000 filers in our database, 236,000 (63%) reported a car as one of their assets, while 140,000 (37%) did not.

6.2.3. Employment as an Opportunity Cost of Time

The OSB requires filers to submit both a balance sheet and income statement at the time of the bankruptcy filing. One element of the income statement is employment income. We use this variable to distinguish between employed and unemployed individuals. Following a large literature on the effect of the opportunity cost of time on various economic outcomes (e.g., Charles and Stephens, 2013; Dehejia and Lleras-Muney, 2004), we use these data on employment status to identify filers with higher opportunity costs of time. We hypothesize and test the proposition that individuals with lower opportunity costs of time will require lower benefits from their bankruptcy compared to individuals with higher opportunity costs of time. Of the 376,000 filers in our database, 220,000 (58%) reported wage income in their income statement, while 156,000 (42%) did not. The percentages of all filers by both car and employment status is 23% unemployed with a car, 39% employed with a car, 18% unemployed without a car, and 19% employed without a car.

6.3. Other Control Variables

The OSB provided us with a large amount of individual-level demographic and economic data, including filer's age, self-employment status, household size, marital status, and prior insolvencies. All of these individual-level data are included in all our regressions.

We control for past neighborhood bankruptcies using measures of all past bankruptcies in every postal code in our sample (where postal codes contain 13 households on average). To this end, we take counts of bankruptcies in the 2000-04 period — i.e., bankruptcies before the start of our sample.

A particularly unique element of our OSB data on individual bankruptcy filings is that the data include the full textual answer to this open-ended question posed on the bankruptcy filing form: “*Give reasons for your financial difficulties*” (OSB Form 79, Question 14). Using textual analysis software, these open-ended answers are coded into 17 categories described at the bottom panel of Table 2. Individual filers can have multiple codes if they provide multiple reasons for their financial distress. All of these 17 different reasons are included as dummy variables in our specifications. These dummy variables capture the various exogenous causes of financial distress, which we argue could affect the level of FBB at the point at which the individual chooses to file. To the best of our knowledge, this kind of data on the causes of financial distress has not been previously used in the bankruptcy literature.

Our knowledge of the exact postal code of each individual filer allows us to match the individual data with Canadian census data. We match individual-level and postal code data from the OSB with census and other data using the Postal Code Conversion File developed by Statistics Canada and Canada Post. Statistics Canada provides data at the level of census *dissemination areas* (DAs) for a wide variety of variables, including DA-level population, etc. In order to capture neighborhood income, we use 2006 census data on average personal incomes at the DA level. In addition, we also control for shocks to income using changes to annual personal disposable income at the provincial level, obtained from Statistics Canada. We also control for a neighborhood's level of financial literacy (see, e.g., Lusardi, 2012) using data provided to us by Murray (2011). Numerical literacy measures for each DA are imputed from the 2003 International Adult Literacy and Skills Survey and the 2006 census.

6.4. Geographic Measures

We use postal codes of individual filers, trustees and government offices to compute distances between all the pairs. We utilize the Microsoft MapPoint and MPMileage programs to calculate road travel time between bankruptcy filers and their trustees, based on the predicted roads used to travel between two points and the average time spent traveling via roads of different types (e.g., interstates, highways, and city roads).

7. Results

7.1. Extensive Margin Results

Our extensive margin hypothesis results are reported in Table 6. These tests examine whether distances between the centroid of the DA and the closest trustee to that DA affects the total number of filings, or filings per capita, per dissemination area. DAs are very small geographic areas with an average of 500 inhabitants or 200 households. As we previously argued, the structure of the extensive margin model is very similar to the models used in the gravity literature, in which the distance between two areas (e.g., between the centroids of two countries) is regressed on an aggregate amount of transactions between the two areas (e.g., exports). Because these are aggregate level counts of the number of transactions from an area, as in the gravity literature, we do not face issues related to individual choices and selection. The dependent variable is the count of bankruptcies per census DA per year in the negative binomial model and bankruptcies per 1,000 people in a DA per year in the Tobit and OLS models. Because the unit of analysis of these tests is DA regions and not individuals, we include only DA-level rather than individual-level controls.

The results in Table 6 show that, as predicted, the distance from the DA to the closest bankruptcy trustee reduces the expected number of bankruptcies in the DA. In particular, the negative binomial model results imply that a one-standard-deviation increase in the distance to the closest trustee will reduce bankruptcies by 0.0254, or 1.37 % of the average bankruptcies per DA per year. Both the Tobit and OLS models imply similar effects. A one-standard-deviation increase in distance lowers bankruptcies per 1,000 residents by 0.101, or 3.4% of the annual average in the Tobit model, and by 0.056, or 1.93 % in the OLS model. In summary, these results show that distance to the closest trustee does indeed reduce the number of bankruptcies per

capita in a geographic area, which provides support for the extensive margin hypothesis that distance affects the choice between filing for bankruptcy and not filing.

7.2. Intensive Margin Results

Our intensive margin results are presented in Tables 7 to 9. Table 7 reports OLS tests, Table 8 reports IV results using `Government_Distance` as an instrument for `Trustee_Distance`, and Table 9 reports results when measuring travel costs using travel time rather than distance.

For ease of comparison, these tables report only the key coefficient of interest from equation (1), which is the coefficient on distance to the selected trustee (measured in log kilometers) in the regression on financial benefits of bankruptcy (measured in log dollars). (Full results are in the data appendix.) Our theoretical prediction is that this coefficient is positive (greater distance costs require greater financial benefits as compensation). We report both estimated coefficients and the economic magnitude of these coefficients as measured by the effect on FBB (in dollars) from a one-kilometer change in distance (measured at the mean values of FBB and distance). Recall that, under Canadian bankruptcy law, the filer is obligated to have a face-to-face interaction at the trustee's location at least three times during the course of the bankruptcy process (one mandatory face-to-face meeting with the trustee and two mandatory credit counseling sessions). Our estimates from regressing distance on FBB thus include the total cost of distance traveled over multiple separate trips.

Each of these tables report results for the full sample, as well as results where we restrict the sample to filers who are located less than 200 kilometers from their selected trustee (less than two hours of travel time). While most Canadians live in densely populated urban areas, others live in isolated rural areas that are very far from urban centers (Figure 1). It is thus possible for some filers to be many hundreds of kilometers away from a trustee. It is possible that these very isolated filers could have travel characteristics different from those of less isolated filers, so we provide evidence on individuals who are less than 200 kilometers from a trustee (or less than two hours away in travel time). Approximately 89% of the full sample is within 200 kilometers of their trustee.

Across all specifications in Tables 7 to 9, we find very consistently that the estimated coefficient on the Distance variable in equation (1) is positive and highly significant as predicted. Furthermore, the magnitudes of these estimated coefficients (as reported by additional dollars of

FBB per 1 kilometer of additional distance traveled) are economically sensible. This is the main finding of this paper.

Each row of Tables 7 to 9 restricts the sample to filers based on issues related to travel costs — i.e., different car (transport cost) and employment (opportunity cost) characteristics, as well as their interaction. Our hypothesis is that travel costs will be higher for those without cars compared to those with cars and also for employed versus unemployed filers (forgone wages). An important finding of this paper is that across all specifications we find that the relative magnitudes of the travel costs (in dollars per kilometer traveled) are as predicted. In all cases we find that filers who have a car have lower travel costs than filers without a car. Similarly, in all cases, we find that employed filers have higher travel costs (because of opportunity costs) compared to unemployed filers. We also split the sample based on both car and job characteristics. Again, our results across all specifications are consistent with our predictions.

Our preferred specification (with `Government_Distance` used as an instrument for `Trustee_Distance` and with the sample restricted to filers within 200 kilometers of their trustee) is reported in the last two columns of Table 8. We find that cost per kilometer traveled is \$34 for the whole sample (recall that this cost reflects multiple mandated meetings with the trustee). We also show that, as predicted, costs per kilometer for those with a car (\$19) are less than for those without a car (\$37). Similarly, as predicted, we find that because of opportunity costs, costs per kilometer for the unemployed (\$31) are less than that for the employed (\$39). Furthermore, our results are largely consistent with our predictions when we split the sample based on both car and employment status: unemployed with car (\$9.74) < employed with car (\$26.84) < unemployed without car (\$39.12) < employed without car (\$38.47). The only exceptions to our predictions are these final two estimates (unemployed without car, \$39.12, is very slightly larger than employed without car, \$38.47). It is noteworthy, however, that our category with the lowest predicted cost per kilometer (unemployed with car, \$9.74) is the only category where the estimate is only significant at 10%, where all other coefficients are significant at 1%.

We report further details on the IV in the web appendix (i.e., first-stage results as well as tests of weak instruments). In all specifications we show in the appendix that the instruments we use have very high correlation with the endogenous variable being instrumented (i.e., they are strong instruments). For an additional robustness test, in Table 9 we examine travel time (in minutes) between the filer and trustee rather than travel distance (in kilometers). Table 9 shows

that our results using travel time in minutes are very similar to our results using travel distance in kilometers.

8. Conclusion

This paper is the first to show that distance costs affect personal bankruptcy filings. To the best of our knowledge, this is the first paper in the literature to examine whether distance costs affect financial benefits in the context of a complex financial transaction with many financial benefits and costs (as opposed to the simple purchase of a commodity). Furthermore, while the literatures on distance as a transaction cost and the causes of personal bankruptcy are both very large, no previous paper has combined the two to examine whether distance-related costs affect the decision to file for personal bankruptcy.

Our identification strategy uses the distance from the filer to the closest government office as an instrument for the distance from the filer to his or her selected trustee. This instrument is based on bankruptcy filing institutions under which filers interact with trustees and trustees interact with local government, but filers do not interact with local government.

Our main finding in this paper is that, as predicted, distance-related costs have a significant effect on both the number of filers (extensive margin) and the financial benefits of bankruptcy received by those who decide to file (intensive margin). We also show that various other determinants of travel costs, such as transport costs (ownership of a car) and opportunity costs (employment status), also influence the financial benefits of those individuals who choose to file.

In terms of policy implications, our results demonstrate an example of unintended negative consequences following regulatory action. The results of this paper show that mandating multiple face-to-face interactions between filers and trustees, even if the trustee is located large distances away, has the unintended consequence of significantly raising the costs of bankruptcy filing for those who face higher travel-related costs.

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Table 1. Bankruptcy Exemptions by Canadian Provinces

Provinces	Exemptions					
	House	Car	Pension	Personal Effects	Furniture	Land
Alberta	40000	5000	No*	4000	4000	All if rural
British Columbia	12000	5000	All	up to 4000 together		No
Manitoba	2500	3000	All	All	4500	No
New Brunswick	No	6500	All	No	5000	No
Newfoundland and Labrador	10000	2000	All	4000	4000	No
Nova Scotia	No	6500	All	All	All	No
Ontario	No	5650	All	5600	11300	No
Prince Edward Island	No	3000	All	All	2000	No
Quebec	No	No	All	up to 6000 together		No
Saskatchewan	50000	10000	All	7500	All	No

Notes: Bankruptcy exemptions are taken from
<http://www.bankruptcycanada.com/bankruptcyexemptions.htm>.

All amounts are in Canadian dollars and apply to equity in the asset. These amounts represent maximum values of assets protected from seizure by creditors in bankruptcy.

* Pension accounts are exempt in bankruptcy from October 1, 2009 (adjusted for in the data).

Table 2. Variables, Levels of Aggregation, and Data Sources

Variables	Aggregation	Measurement	# of Units	Data Source
Actual trustee-debtor distance	Individual	km	386,770	Office of the Superintendent of Bankruptcy (OSB), Statistics Canada, Bankruptcy Filing
Closest trustee-debtor distance		km		
Time of travel to trustee		minutes		
Distance to the nearest government		km		
Monthly wage		dollars		
Financial benefits of bankruptcy		dollars		
Total liabilities		dollars		
Secured liabilities		dollars		
Unsecured liabilities		dollars		
Age of filer		years		
Dummy for car ownership		0 or 1		
Dummy for self-employment		0 or 1		
Marital status: divorced dummy		0 or 1		
Household size		persons		
Prior defaults		0 or 1		
Marital breakdown	Individual	0 or 1	386,770	Reasons for financial difficulties as recorded by OSB in bankruptcy petitions
Unemployment		0 or 1		
Insufficient income		0 or 1		
Business failure		0 or 1		
Health concerns		0 or 1		
Accidents/emergencies		0 or 1		
Overuse of credit		0 or 1		
Student loans		0 or 1		
Gambling		0 or 1		
Tax liabilities		0 or 1		
Loans to friends		0 or 1		
Bad/poor investments		0 or 1		
Garnishee		0 or 1		
Legal action		0 or 1		
Moving/relocation		0 or 1		
Substance abuse		0 or 1		
Supporting relatives		0 or 1		
Bankruptcy exemptions	Individual	Dollars		BankruptcyCanada.com
Numerical literacy	Dissemination Areas (DAs)	Score between 100 and 500	54,626	Murray (2011)
Past DA Bankruptcy (dummy = 1 if at least 1 bankruptcy in 2000–04)	Dissemination Areas (DAs)	0 or 1	54,626	OSB
Average income	DAs	dollars	54,626	2006 Canada Census
Standard error of income	DAs	dollars	54,626	
Change in income (provincial)	Province	percent	10	

Notes: Number of units as reported by Statistics Canada.

Table 3. Summary Statistics: Intensive Margin Tests All Bankruptcy Filers

(Data descriptions and sources in Table 2)

Variable	Obs	Median	Std. Dev.	Min	Max
Actual trustee-debtor distance	380396	18.35	301.31	0	4490.16
Closest government distance	386770	3.2	19.61	0	972.103
Actual time of travel in minutes	386770	22	313.58	0	3900
Individual employment status	386770	1	0.49	0	1
Financial benefits of bankruptcy	386430	32302	60337.63	0	1000000
Age	386770	42.00	13.29	18	90
Car	386770	1.00	0.48	0	1
Self-employment	386770	0.00	0.23	0	1
Numerical literacy	386770	264.74	12.81	213.827	323.07
Past neighborhood bankruptcies	386770	1.00	0.48	0	1
Household size	386770	2.00	1.33	1	12
Average income	386770	29961	11492.45	9273	601418
Standard error of income	386770	2191	3567.88	0	296825
Change in income	386770	4.56	2.883	-6.7376	25.40
Divorce	386770	0	0.337	0	1
Prior defaults	386770	0	0.385	0	1
Marital breakdown	386770	0	0.376	0	1
Unemployment	386770	0	0.446	0	1
Insufficient income	386770	0	0.475	0	1
Business failure	386770	0	0.300	0	1
Health concerns	386770	0	0.399	0	1
Accidents/emergencies	386770	0	0.153	0	1
Overuse of credit	386770	1	0.494	0	1
Student loans	386770	0	0.087	0	1
Gambling	386770	0	0.149	0	1
Tax liabilities	386770	0	0.210	0	1
Loans to friends	386770	0	0.115	0	1
Bad/poor investments	386770	0	0.130	0	1
Garnishee	386770	0	0.118	0	1
Legal action	386770	0	0.121	0	1
Moving/relocation	386770	0	0.132	0	1
Substance abuse	386770	0	0.134	0	1
Supporting relatives	386770	0	0.221	0	1

Table 4. Summary Statistics: Intensive Margin Tests Bankruptcy Filers Within 200 km of Their Trustee

(Data descriptions and sources in Table 2)

Variable	Obs	Median	Std. Dev.	Min	Max
Actual trustee-debtor distance	338409	14.5	43.89	0	200.0
Closest government distance	338409	3.2	11.93	0	195.8
Time of travel in minutes	338409	20	44.34	0	1013
Individual employment status	338409	1	0.49	0	1
Financial benefits of bankruptcy	338409	32253.8	61124.22	0	1000000
Age	338409	42	13.29	18	90
Car	338409	1	0.49	0	1
Self-employment	338409	0	0.24	0	1
Numerical literacy	338409	264.704	12.70	213.827	323.0702
Past neighborhood bankruptcies	338409	1	0.48	0	1
Household size	338409	2	1.32	1	12
Average income	338409	29963	11717.63	9273	601418
Standard error of income	338409	2174	3672.834	0	296825
Change in income	338409	4.5576	2.64	-2.71	25.40
Divorce	338409	0	0.339	0	1
Prior defaults	338409	0	0.388	0	1
Marital breakdown	338409	0	0.373	0	1
Unemployment	338409	0	0.444	0	1
Insufficient income	338409	0	0.476	0	1
Business failure	338409	0	0.299	0	1
Health concerns	338409	0	0.397	0	1
Accidents/emergencies	338409	0	0.154	0	1
Overuse of credit	338409	1	0.493	0	1
Student loans	338409	0	0.085	0	1
Gambling	338409	0	0.150	0	1
Tax liabilities	338409	0	0.214	0	1
Loans to friends	338409	0	0.116	0	1
Bad/poor investments	338409	0	0.130	0	1
Garnishee	338409	0	0.120	0	1
Legal action	338409	0	0.122	0	1
Moving/relocation	338409	0	0.129	0	1
Substance abuse	338409	0	0.134	0	1
Supporting relatives	338409	0	0.219	0	1

Table 5. Summary Statistics: Extensive Margin Tests for Bankruptcy Counts per DA (2005–10)

(Data descriptions and sources in Table 2)

Variable	Obs	Median	Std. Dev.	Min	Max
Consumer bankruptcy (DA) (count)	230933	1	2.476	0	61
Consumer bankruptcy (DA) per 1000 population	230933	2.04	3.871	0	119.048
Closest trustee-debtor distance	230933	2.59	49.244	0	1256.09
Numerical literacy (DA) (score between 100 and 500)	230933	268.421	13.795	213.827	323.07
Average personal income (DA) (\$)	230933	32510	18413	9108	601418
Males (DA) (proportion)	230933	0.49107	0.032	0.219	0.795
Past neighborhood bankruptcies (DA) (dummy)	230933	1	0.109	0	1
Age 20–39 (DA) (proportion)	230933	0.25	0.085	0	0.875
Age 40–64 (DA) (proportion)	230933	0.363	0.062	0.029	0.607
Age over 65 (DA) (proportion)	230933	0.120	0.092	0	0.952
Homeowners (DA) (proportion)	230933	0.811	0.268	0	1
Divorced (DA) (proportion)	230933	0.075	0.036	0	0.317
Separated (DA) (proportion)	230933	0.028	0.018	0	0.149
Widowed (DA) (proportion)	230933	0.049	0.047	0	0.564
High school (DA) (proportion)	230933	0.233	0.079	0	0.595
Apprenticeship (DA) (proportion)	230933	0.107	0.067	0	0.5
College (DA) (proportion)	230933	0.182	0.073	0	0.581
University (DA) (proportion)	230933	0.16	0.107	0	0.786
Graduate (DA) (proportion)	230933	0.055	0.079	0	0.744
Population (DA) (persons)	230933	530	446.832	250	16360

**Table 6. Extensive Margins:
The Effect of Distance on the Counts of Bankruptcies per DA**

These tests examine the hypothesis that filer-trustee distance decreases the number of bankruptcy filings. Each cell represents one regression with only the coefficient on distance reported. The model used is specified in the first row. The economic effect measures the change in the bankruptcy count as one standard deviation of debtor-trustee distance is added. All models have trustee fixed effects.

Model	Neg. Binomial	Tobit	OLS
Dependent variable	bankruptcy count	Bankruptcies per 1000	Bankruptcies per 1000
Effect of 1 km in distance	-0.00050***	-0.00206**	-0.00114*
Effect of 1 s.d.	-0.0254	-0.10094	-0.05586
Average bankruptcies per year	1.85	2.9	2.9

Notes: Control variables as described in the text are included but not reported. *** denotes significance at 1%, ** denotes significance at 5%, and * denotes significance at 10%.

**Table 7. Intensive Margins (OLS):
Effect of Bankruptcy Trustees' Proximity on Financial Benefits of Bankruptcy**

These tests examine the hypothesis that, for those individuals who do file, an increase in distance costs causes an increase in the financial benefits of bankruptcy required. Each cell reports results from a separate regression. We report the coefficient of the log of filer-trustee distance (km) on the log of financial benefits of bankruptcy (\$). We use OLS with trustee fixed effects to account for unobserved heterogeneity among the trustees. Effects in dollar terms are calculated as change in benefits when 1 km of distance is added for the average consumer in the respective sample.

	Whole Sample	Effect in Dollars per km	Distance Less Than 200 km	Effect in Dollars per km
Whole sample	0.01365***	6.93	0.01742***	24.51
With a car	0.00696**	3.34	0.00744*	9.94
No car	0.01150**	6.54	0.01711***	26.57
No wage	0.01160***	5.70	0.01659***	22.37
With wage	0.01679***	8.92	0.01952***	29.07
No wage, with a car	0.00210	0.99	0.00342	4.42
With wage and a car	0.01132***	5.59	0.01122***	15.81
No wage, no car	0.01110**	6.01	0.01757***	26.22
With wage, no car	0.01488***	8.88	0.01970***	31.85

Notes: Control variables as described in the text are included but not reported. Standard errors are clustered at the trustee level. *** denotes significance at 1%, ** denotes significance at 5%, and * denotes significance at 10%.

Table 8. Intensive Margins: (Government_Distance as an Instrument for Trustee_Distance) Effect of Bankruptcy Trustees' Proximity on Financial Benefits of Bankruptcy

These tests examine the hypothesis that, for those individuals who do file, an increase in distance costs causes an increase in the financial benefits of bankruptcy required. Each cell report results from a separate regression. We report the coefficient of the log of filer-trustee distance (km) on the log of financial benefits of bankruptcy (\$). We use instruments to account for the endogeneity of distance between filer and trustee. The instrument we use is distance to the nearest government building (“Government_Distance”). Effects in dollar terms are calculated as change in financial benefits of bankruptcy when 1 km of distance is added.

	Whole Sample	Effect in Dollars per km	Distance Less Than 200 km	Effect in Dollars per km
Whole sample	0.07634***	38.78	0.06752***	34.30
With a car	0.04854***	23.31	0.03889***	18.68
No car	0.07359***	41.84	0.06466***	36.76
No wage	0.07833***	38.48	0.06364***	31.26
With wage	0.08050***	42.78	0.07403***	39.34
No wage, with a car	0.03465***	16.33	0.02067*	9.74
With wage and a car	0.06351***	31.38	0.05433***	26.84
No wage, no car	0.08757***	47.47	0.07217***	39.12
With wage, no car	0.06783***	40.49	0.06445***	38.47

Notes: Control variables as described in the text are included but not reported. Full results for these regressions are presented in the web appendix. Standard errors are clustered at the trustee level. *** denotes significance at 1%, ** denotes significance at 5%, and * denotes significance at 10%.

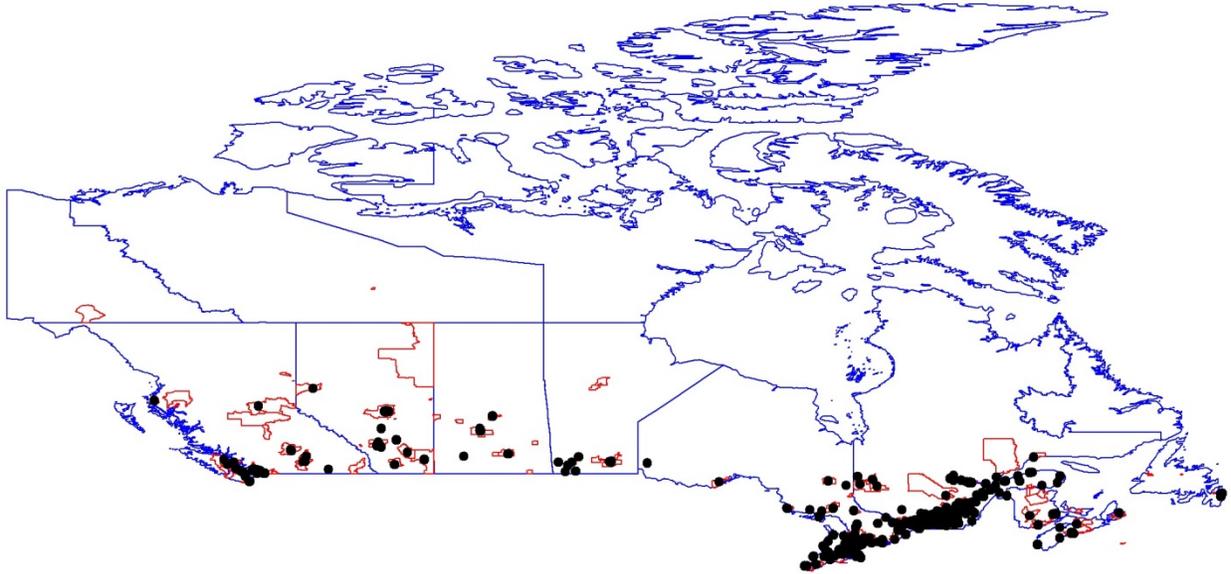
Table 9. Effect of Time of Travel to Bankruptcy Trustee on Financial Benefits of Bankruptcy

These tests examine the hypothesis that, for those individuals who do file, an increase in distance costs causes an increase in the financial benefits of bankruptcy required. Each cell report results from a separate regression. We report the coefficient of the log of filer-trustee time of travel (minutes) on the log of financial benefits of bankruptcy (\$). We use OLS with trustee fixed effects to account for unobserved heterogeneity among the trustees. Effects in dollar terms are calculated as change in benefits when one minute of travel time is added for the average consumer in the respective sample.

	Whole Sample	Effect in Dollars per km	Time Less Than 2 Hours	Effect in Dollars per km
Whole sample	0.02055***	10.41	0.02495***	43.13
With a car	0.01377***	6.94	0.01077**	20.67
No car	0.01615***	8.24	0.02586***	47.55
No wage	0.01867***	9.23	0.02434***	40.32
With wage	0.02396***	12.52	0.02670***	48.90
No wage, with a car	0.01153***	5.65	0.00785	12.63
With wage and a car	0.01716***	9.03	0.01421***	25.24
No wage, no car	0.01302**	6.56	0.02582***	45.56
With wage, no car	0.02220***	11.48	0.02916***	55.80

Notes: Control variables as described in the text are included but not reported. Standard errors are clustered at the trustee level. *** denotes significance at 1%, ** denotes significance at 5%, and * denotes significance at 10%.

Figure 1. The Distribution of Bankruptcy Trustees in Canada



Notes: Black dots denote trustees' locations, blue lines represent provincial boundaries, and red lines show census metropolitan areas and census agglomerations as defined by Statistics Canada in the 2006 census. Maps are from Statistics Canada.

WEB APPENDIX

for

Financial Benefits, Travel Costs, and Bankruptcy

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This appendix reports results for Table 8 only. Additional results are available upon request.

Table A1. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Whole Sample)

Independent Variables	Whole Sample		Car Owners	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.33541*** (0.01831)		0.31581*** (0.01837)	
Log of trustee distance		0.07634*** (0.00743)		0.04854*** (0.00754)
Observations	376,469	376,469	236,221	236,221
R-squared	0.09678	0.14046	0.09306	0.13565
Cragg-Donald Wald F statistic		28261		16654
Kleibergen-Paap Wald rk F statistic		335.7		295.6
Anderson-Rubin Wald test F		111.4		45.29
p-value		0		0
Stock-Wright LM S statistic		62.57		31.95
p-value		0		0
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A2. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Whole Sample)

Independent Variables	No Car		No Wage	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.35940*** (0.01913)		0.33188*** (0.02103)	
Log of trustee distance		0.07359*** (0.01001)		0.07833*** (0.01019)
Observations	140,247	140,247	156,440	156,440
R-squared	0.09779	0.15198	0.09665	0.14897
Cragg-Donald Wald F statistic		10769		12394
Kleibergen-Paap Wald rk F statistic		353.1		249.1
Anderson-Rubin Wald test F		55.73		65.38
p-value		0		0
Stock-Wright LM S statistic		41.95		43.79
p-value		0		0
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A3. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Whole Sample)

Independent Variables	Wage Earners		No Wage, But Car Owners	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.33459*** (0.01803)		0.31047*** (0.02204)	
Log of trustee distance		0.08050*** (0.00776)		0.03465*** (0.01129)
Observations	220,025	220,025	88,434	88,434
R-squared	0.09581	0.14161	0.09405	0.14303
Cragg-Donald Wald F statistic		15614		6560
Kleibergen-Paap Wald rk F statistic		344.5		198.4
Anderson-Rubin Wald test F p-value		111.1 0		9.981 0.00289
Stock-Wright LM S statistic p-value		58.81 0		8.873 0.00171
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A4. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Whole Sample)

Independent Variables	With Wage and Car		No Wage, No Car	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.31605*** (0.01783)		0.35035*** (0.02075)	
Log of trustee distance		0.06351*** (0.00854)		0.08757*** (0.01277)
Observations	147,779	147,779	67,999	67,999
R-squared	0.09135	0.13294	0.09659	0.15544
Cragg-Donald Wald F statistic		9900		5374
Kleibergen-Paap Wald rk F statistic		314.1		285.1
Anderson-Rubin Wald test F		60.22		51.39
p-value		0		0
Stock-Wright LM S statistic		39.13		36.26
p-value		0		0
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A5. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Whole Sample)

Independent Variables	With Wage, No Car	
	First Stage	Second Stage
Log of government distance	0.36264*** (0.01960)	
Log of trustee distance		0.06783*** (0.01159)
Observations	72,236	72,236
R-squared	0.09829	0.15756
Cragg-Donald Wald F statistic		5231
Kleibergen-Paap Wald rk F statistic		342.5
Anderson-Rubin Wald test F		33.83
p-value		0
Stock-Wright LM S statistic		27.60
p-value		0
Control variables	Y	Y
Trustee FE	Y	Y
Monthly and Year FE	Y	Y
Robust SE	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A6. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Distance <= 200 km)

Independent Variables	Whole Sample		Car Owners	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.37803*** (0.01825)		0.36158*** (0.01760)	
Log of trustee distance		0.06752*** (0.00749)		0.03889*** (0.00768)
Observations	335,307	335,307	207,985	207,985
R-squared	0.11696	0.14708	0.11353	0.14083
Cragg-Donald Wald F statistic		35382		21221
Kleibergen-Paap Wald rk F statistic		428.9		421.9
Anderson-Rubin Wald test F		82.45		25.64
p-value		0		0
Stock-Wright LM S statistic		48.40		20.36
p-value		0		0
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A7. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Distance <= 200 km)

Independent Variables	No Car		No Wage	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.39158*** (0.02077)		0.37632*** (0.01822)	
Log of trustee distance		0.06466*** (0.01028)		0.06364*** (0.01004)
Observations	127,321	127,321	139,280	139,280
R-squared	0.11427	0.15746	0.11702	0.15715
Cragg-Donald Wald F statistic		12884		15170
Kleibergen-Paap Wald rk F statistic		355.3		426.4
Anderson-Rubin Wald test F p-value		40.70 0		42.58 0
Stock-Wright LM S statistic p-value		31.39 0		30.14 0
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A8. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Distance <= 200 km)

Independent Variables	With Wage		No Wage, with Car	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.37666*** (0.01918)		0.35929*** (0.01790)	
Log of trustee distance		0.07403*** (0.00782)		0.02067* (0.01099)
Observations	196,022	196,022	77,549	77,549
R-squared	0.11630	0.14717	0.11513	0.14842
Cragg-Donald Wald F statistic		19958		8192
Kleibergen-Paap Wald rk F statistic		385.6		402.8
Anderson-Rubin Wald test F		88.77		3.608
p-value		0		0.0583
Stock-Wright LM S statistic		50.35		3.388
p-value		0		0.0657
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A9. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Distance <= 200 km)

Independent Variables	With Wage and Car		No Wage, No Car	
	First Stage	Second Stage	First Stage	Second Stage
Log of government distance	0.36031*** (0.01889)		0.38420*** (0.02108)	
Log of trustee distance		0.05433*** (0.00837)		0.07217*** (0.01336)
Observations	130,425	130,425	61,723	61,723
R-squared	0.11182	0.13779	0.11342	0.16358
Cragg-Donald Wald F statistic		12824		6327
Kleibergen-Paap Wald rk F statistic		363.7		332.2
Anderson-Rubin Wald test F		41.56		29.53
p-value		0		0
Stock-Wright LM S statistic		30.37		23.79
p-value		0		0
Control variables	Y	Y	Y	Y
Trustee FE	Y	Y	Y	Y
Monthly and Year FE	Y	Y	Y	Y
Robust SE	Y	Y	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A10. The Effect of Trustees' Proximity on Benefits of Bankruptcy (Distance <= 200 km)

Independent Variables	With Wage, No Car	
	First Stage	Second Stage
Log of government distance	0.39497*** (0.02108)	
Log of trustee distance		0.06445*** (0.01211)
Observations	65,586	65,586
R-squared	0.11541	0.16109
Cragg-Donald Wald F statistic		6396
Kleibergen-Paap Wald rk F statistic		351.1
Anderson-Rubin Wald test F		28.97
p-value		0
Stock-Wright LM S statistic		23.95
p-value		0
Control variables	Y	Y
Trustee FE	Y	Y
Monthly and Year FE	Y	Y
Robust SE	Y	Y

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1