Property tax delinquency and its spillover effects on nearby properties

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ARTICLE INFO

ABSTRACT

This paper investigates the impact of property tax delinquency on the sales price of nearby residential properties, an effect that we call the "delinquency discount". We use a sample of 34,500 home sales and the population of delinquent properties for Chicago, Illinois during the period 2010 to 2013. We focus on the delinquency discount for properties within the same Census Block. We also examine the effect of delinquency duration on neighboring properties, as this measures the level of their financial distress. We estimate the magnitude of the delinquency discount using several alternative estimation methods, in each case controlling for local foreclosure activity. Our preferred method is a matching estimator, as it works to eliminate the potential for omitted variable bias that is common in this type of estimation. We find large, negative, and statistically meaningful effects of delinquent properties for which the local government has placed a tax lien and has put the lien up for sale to private investors. For properties with a tax lien that are not successfully sold, we estimate a negative spillover of 5.1% ($12,872) on surrounding properties. Properties with a tax lien that are sold to private investors have a smaller, but still negative impact on surrounding property values of 2.5% ($6310).

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1. Introduction

Housing markets are inherently spatially dependent, and so the effects of one homeowner's financial distress are likely to be borne at least in part by nearby homeowners. Identifying these spatial aspects has attracted considerable recent attention. Much of this work has attempted to measure the spillover effect of one homeowner's *mortgage foreclosure* on nearby properties, and in a review of this literature Lee (2008) concludes that this mortgage foreclosure effect is significant, ranging between 0.9% and 8.7% reduction in the sales price of nearby properties.[1]

However, the spillover effects from other types of homeowner financial distress are not as well understood, such as distress related to *property tax delinquency*. Property tax delinquency can occur on all properties, regardless of mortgage status. In fact, examining only spillovers from mortgage foreclosures leaves out the potential for spillovers from other types of financial distress on the 25 million housing units

(32.9% of all owner-occupied homes) that do not have a mortgage (American Community Survey, 2012). Property tax delinquency is unique in that it may occur after a mortgage is paid off, or when financial distress is less severe than distress that may lead to foreclosure. Since property tax payments are usually due once or twice per year, the timing of delinquent property tax payments may also indicate a different level or form of distress than delinquent mortgage payments, which are typically due each month. However, the spatial effects of property tax delinquency are not as well understood.[2]

This paper examines the impact of property tax delinquency on the sales price of nearby residential properties, an effect that we call the "delinquency discount". We use a sample of 34,500 home sales and the population of delinquent properties for Chicago, Illinois during the period 2010 to 2013. As has been demonstrated with other spatial spillovers (Campbell et al., 2011), we expect the effect of property tax delinquency to dissipate with distance, so we focus on the delinquency discount for properties within the same Census Block. We also examine the effect of delinquency duration on neighboring properties, as this measures the level of their financial distress. We estimate the magnitude of the delinquency discount using several alternative estimation methods, in each case controlling for local foreclosure activity. Our preferred method is a matching estimator similar to that used in McMillen

[1] Among a large and growing literature on foreclosure effects, see Immergluck and Smith (2006), Schuetz et al. (2008), Campbell et al. (2011), Towe and Lawley (2013), Anenberg and Kung (2014), and Fisher et al. (2015). See especially Harding et al. (2009) and Hartley (2010).

[2] However, as discussed later, see Simons et al. (1998), Whitaker and Fitzpatrick (2012), and Gillen (2013).

(2012), as it works to eliminate the potential for omitted variable bias that is common in this type of estimation.

We find large, negative, and statistically meaningful effects of delinquent properties for which the local government has placed a tax lien and has put the lien up for sale to private investors. For properties with a tax lien that are not successfully sold, we estimate a negative spillover of 5.1% ($12,872) on surrounding properties. Properties with a tax lien that are sold to private investors have a smaller, but still negative impact on surrounding property values of 2.5% ($6310).

The remainder of the article is organized as follows. We first provide more background on the delinquency process coupled with a literature review. The discussion of the methodology is in the third section. The fourth section describes the data, and the results are presented in the fifth section. We conclude in the final section.

2. Understanding property tax delinquency

Property tax delinquency affects local governments' ability to provide services to its residents. Further, collection of unpaid property tax bills is costly both administratively and financially. Excessive delinquent property tax balances during economic downturns exacerbate these costs. For example, in 2013 Detroit experienced a property tax delinquency rate of 48% (Alm et al., 2015), making budgeting for local public services difficult, while Philadelphia in 2011 experienced a property tax delinquency rate of 19% with an uncollected balance of $472 million (Kekstra, 2011). Localities apply penalties when taxpayers are late with their property taxes, and in persistent cases of delinquency governments may force the transfer of ownership to recoup some costs of delinquency. Regardless, local governments must often cut services or raise taxes to cover the revenue shortfall from unexpectedly high rates of property tax delinquency (Miller, 2013).

Using sample data from Chicago, Illinois, we focus on how the county collects and penalizes property tax delinquency. It should be recognized that each local government with a property tax may handle delinquent properties differently (Anderson and Miller, 2015). Therefore while property tax delinquency is not unique to Chicago, the results of this study are characterized by the situation in Chicago. The generalizability of these results to other cities is not warranted, but the comparison of these results with previous literature may provide an indication of severity.

2.1. Types of property tax delinquent properties

We define four types of property tax delinquent properties, each of which corresponds with the duration of delinquency. The duration of delinquency is an important consideration as length of time signals the strength of financial distress of the homeowner.

Property taxes are due twice a year in Chicago. The first installment is due every year on the first business day of March. The second installment due date varies each year, but is typically 6 to 9 months after the first installment. The county publishes information on properties with an unpaid balance after the second installment in the local newspaper. We define this first type of delinquent properties as "certified" delinquent properties. An owner of a certified delinquent property pays the balance due prior to the following tax lien sale.

The county holds a tax lien sale annually, and the sale typically occurs 7 to 9 months after the second installment due date. A tax lien sale is the sale of delinquent property taxes by a local government to private investors. When a taxpayer becomes delinquent, the local government places a lien against the property, which represents a collateralized receivable but does not give direct ownership of the property. We define the types of properties that are delinquent at the time of the tax lien sale as either "sold" or "unsold" delinquent properties. A sold property is one where the lien is sold to an investor; an unsold property is unsold at the tax lien sale.

The unsold properties that continue to be delinquent are offered at the bi-annual scavenger sale. We label this fourth type of delinquent property as "tax foreclosure". The total duration of delinquency at this point is three years or longer. These properties are by statute eligible for tax foreclosure.

Fig. 1 provides a visual representation of these four types of delinquency: certified, sold, unsold, and tax foreclosure.

2.2. Previous literature

Spillover effects are not new in urban real estate markets; these negative externalities can arise from mixed land use (McMillen and McDonald, 2002), forced sales (Campbell et al., 2011), or housing vouchers (Galster et al., 1999). Examining more closely financial distress as a cause, several studies have identified the effect of *mortgage foreclosure* on nearby properties (Lee, 2008).[3] The studies are informative, but they largely ignore homeowners in financial distress who are without a mortgage or homeowners in financial distress who are not delinquent on their mortgage payment. It is these homeowners upon whom we focus.

To our knowledge, there are only three studies that directly estimate what we have termed the delinquency discount. These studies generally find a significant negative relationship between the concentration of property tax delinquent properties and the sales price of nearby properties. Using property tax delinquency data from Cleveland for the years 1992 through 1994, Simons et al. (1998) find that a 1 percentage point increase in property tax delinquent properties decreases residential sales prices in the "nearby area" by 2.245%. This study suffers from spatial consistency as the "nearby area" is defined as property on the same page as the auditor's map book. Whitaker and Fitzpatrick (2012) examine Cleveland home sales between 1 April 2010 and 20 June 2011, and they find that tax-delinquent recent foreclosures reduce the sales price of nearby homes by as much as 7.6%. They also find evidence that the effect of nearby foreclosures is overestimated when nearby tax delinquent and vacant properties are not considered.

Gillen (2013) focuses on Philadelphia. He finds that each additional delinquent property within 500 ft of the sale (fewer than five delinquent properties in total) is associated with a 0.218% reduction in the sales price. He addresses the potential endogeneity between property tax delinquency and home prices by implementing an event study strategy that disentangles changes in the local price trend and changes in the number of nearby delinquent properties. He also estimates a nonlinear relationship between home prices and nearby delinquent properties. His estimates indicate that beyond the first 5 delinquencies each additional delinquency is associated with a 1.089% decline in the sales price; after 15 delinquencies, Gillen (2013) finds that each additional delinquency is associated with a 0.451% decline in the sales price.

We improve upon the previous literature in three important ways. First, we empirically estimate the effect of nearby delinquent properties on sales price while controlling for the duration of delinquency. Second, assuming that observables are correlated with unobservables, we control for selection based on observables and reduce the potential bias from missing variables by using a matched sales technique based on McMillen (2012) that improves the precision of the estimate. Third, we estimate the delinquency discount while controlling for the local incidence of foreclosures. These three improvements tighten the estimate of the delinquency discount.

2.3. Mechanisms

Some mechanisms through which delinquency and the duration of delinquency may affect nearby house values include lack of maintenance, loss of social connectivity, or home abandonment. While we do

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[3] See also the many references in Note 1.