What Is the Outlook for Local Government Revenues in the Tenth District?

By Alison Felix

Local governments in many parts of the country continue to struggle with slowing revenues. Local governments rely heavily on property taxes and transfers from state governments, and revenues from both of these sources may remain weak over the next few years. As new property tax assessments begin to reflect the decline in house prices over the past few years, local property tax revenues may fall in many areas unless tax rates are increased. In addition, decreases in state revenues over the past few years have led to a slowdown in state transfers to local governments.

This article finds that for this downturn, local government revenues from property taxes and state transfers combined were likely slowest in fiscal year 2011. However, weakness in local government revenues may continue for several years, especially if home prices decline further. Despite declines in home prices and state government revenues, projections based on historical experience suggest that local governments may avoid outright declines in revenues due in part to their ability to raise tax rates to offset property value declines. However, recent local property tax collections have been lower than projected, hinting that

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the severity of the recent recession may have led local governments to deviate somewhat from historical trends.

The outlook for most Tenth District states is somewhat brighter than the rest of the nation. House prices have generally held up better in the district, and after sharp declines in state revenues in fiscal years 2009 and 2010, many Tenth District states are now experiencing positive growth. Still, local revenue growth in the region is likely to remain somewhat subdued in the near term.

The first section of the article discusses the composition of local government revenues and the factors that affect the growth of these revenues. The second section estimates the effect of house price changes on local property tax revenues and the effect of state revenue growth on state transfers to local governments. The third section uses these estimates to project local revenue growth for the nation and Tenth District over the next few years.

I.   COMPOSITION AND PERFORMANCE OF LOCAL GOVERNMENT REVENUE

With over half of local government revenues coming from state transfers and property taxes, the health of state government finances and the growth of property values are likely to play a major role in the performance of local government revenues. This section discusses the composition of local government revenues and examines how this composition may affect local government revenues during business cycles.

Composition of local government revenue

Most local governments rely heavily on state transfer revenue, property taxes, and charges for goods and services provided to the public to fund their governments (Chart 1).[1] In fiscal year 2008, 30 percent of all local government revenue came from state governments, making state transfer revenue the largest component of local government revenue. Local governments in every Tenth District state depend on the state government for revenue, but the magnitude of this reliance ranges from a low of 17 percent in Nebraska to a high of 49 percent in New Mexico. State transfer revenue includes state aid for local schools, roads, sewers, health programs, and public welfare (including Medicaid). This category also includes state aid for public utility projects (U.S. Census Bureau).
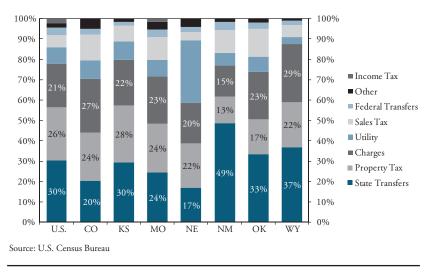
Chart 1

THE COMPOSITION OF LOCAL GOVERNMENT REVENUES, FISCAL YEAR 2008

Source: U.S. Census Bureau

Property taxes are the second largest source of revenue for most local governments. For the United States as a whole, property tax revenue makes up 26 percent of all local government revenue and 72 percent of local tax-based revenue. Despite their current heavy contribution to local revenue, property taxes previously made up an even larger share of local revenues. In 1961, property tax revenue contributed almost 43 percent to local government revenues. That share gradually declined until 1980 and has since hovered around 25 percent. Among local governments in Tenth District states, Kansas relies most heavily on property tax revenues (28 percent) whereas New Mexico collects just 13 percent of its local revenues from property taxes.

Other large components of many local governments' revenues include charges and utility revenue. Charges include a wide variety of fees collected from such sources as school lunches, hospitals, parking, sewerage, and parks. Charges make up 21 percent of local government revenue while utility revenue, including water, electric, gas, and transit, makes up 8 percent. The share of local revenue obtained from utilities varies widely across the district–from 31 percent in Nebraska to only 3 percent in Wyoming.

Some local governments also rely on sales taxes and income taxes for revenue. Overall, sales taxes account for 6 percent of local government revenue, and income taxes account for just 2 percent. Many local governments in every district state have sales taxes, but most do not impose income taxes. Missouri is the only district state with a significant amount of local income tax revenue – making up 1.6 percent of all local government revenue.[2]
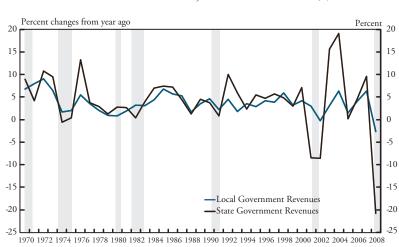
Factors affecting local government revenue

Traditionally, local government revenues have held up much better than state revenues during recessions (Chart 2). This has been due, in large part, to the relative stability of property tax revenues, on which local governments rely compared with income and sales tax revenues, which are a larger source of state government revenue. Although inflation-adjusted local government revenues fell more during the recent recession than at any other time over the past four decades, they still dramatically outperformed inflation-adjusted state government revenues.

Over the next few years, however, local government revenues may lag behind the overall economy and the recovery in state government revenues. Local government revenues are affected not only by the overall strength of the local economy but also by economic factors that affect one or more of the sources of local government revenue.

Changes in state transfer revenue are primarily affected by the performance of state revenue. When state government revenues fall, states must cut spending, raise taxes, or both. One option for states is to cut the amount they send to local governments. A state's priorities and available options will likely affect the timing and extent of this effect. As states begin to see revenues decline, they may pass some of these losses on to local governments in the next budget cycle. On the other hand, states may choose to cut other spending first and, therefore, make cuts to local governments only if revenues decline for a sustained period.

The decline in state revenues already appears to be having some effect on local revenues. In a 2010 survey by the National League of Cities, 64 percent of respondents reported that the level of state aid was having a negative effect on their budget (Hoene and Pagano). However, after falling more than 10 percent between fiscal years 2008 and 2010, state tax revenues have now started to increase.[3] But according to the

Chart 2

INFLATION-ADJUSTED STATE AND LOCAL GOVERNMENT REVENUES, FISCAL YEARS 1970 – 2008

Source: U.S. Census Bureau and Bureau of Economic Analysis
Notes: Nominal values were adjusted for inflation using the GDP deflator. Shaded bars indicate recessions as dated by the National Bureau of Economic Research.

National Conference of State Legislatures, many states expect to continue to grapple with tight budgets into fiscal year 2012 and some into fiscal year 2013 as increasing tax revenues fail to completely make up for less federal fiscal stimulus money. Over the coming years, continued weakness in state revenues may translate into sluggish state transfer revenues for local governments.

Changes in property tax revenues are likely to be closely related to changes in home prices. Home prices in the United States have fallen 17.5 percent over the past 5 years, according to the purchase-only index of the Federal Housing Finance Agency. Changes in home prices have varied dramatically across states, ranging from a 55.9-percent decline in Nevada to a 17.3-percent increase in North Dakota. Home prices in every Tenth District state have outperformed the national average over the past five years. They have ranged from a 10.8-percent decline in Missouri to a 5.1-percent increase in Wyoming.[4] As local governments reassess home values to reflect these price changes, property tax collections may fall sharply in some localities. Depending on the state, it could take a few years for changes in home prices to be

fully reflected in property tax assessments. However, in the meantime local governments may choose to offset part or all of the change in assessments with changes in tax rates.

Of course, residential property taxes are only one piece of property tax collections. Local governments in many states, including several in the Tenth District, also rely on property taxes from farmland. Local governments' reliance on property taxes from farmland varies by state. In North Dakota, taxes on farmland make up approximately 18 percent of property tax collections but in 15 states property taxes on farmland make up less than 1 percent of property taxes.[5] Unlike home values, farmland values have soared recently. In every Tenth District state, non-irrigated farmland prices increased more than 10 percent from the second quarter of 2010 to the second quarter of 2011. Farmland values in Kansas and Nebraska experienced even larger gains of 21 percent and 30 percent, respectively.[6] Therefore, property tax collections from farmland may increase over the next few years as reassessments are made and if tax rates remain constant.

Sales tax and income tax revenue will be heavily dependent on personal income growth in the locality. Although most local jurisdictions do not have income taxes, a few localities rely heavily on them. For example, in Kansas City, earnings and profits taxes make up about 34 percent of the city's tax revenue (City of Kansas City, Missouri). Sales and income taxes are a much larger share of state government revenues, which helps explain the tendency of state government revenue to be much more volatile than local revenue.

Charges and utility revenues are linked to the provision of goods and services and the cost of providing those services. Therefore, these revenue sources should not play a large role in local government budget shortfalls since any changes should be reflected in both revenues and expenditures.

With state transfers and property taxes making up over half of local government revenues, factors affecting these two revenue sources are likely to have a big impact on local budgets. The empirical analysis in the next two sections will therefore focus on these revenue sources.

II.   THE EFFECTS OF BUSINESS CYCLES ON LOCAL GOVERNMENT REVENUES

Understanding how local government revenues have performed during past business cycles is the first step in projecting what will happen to local government revenues following the recent recession. This section estimates the impact of changes in home prices and farmland values on local property tax revenues and the impact of changes in state revenue on state transfer revenues.

Measuring the impact of house prices on local property tax revenue

Changes in local property tax revenues are likely to depend largely on changes in home prices, because the assessed values of homes for tax purposes is likely to closely follow market prices. Lutz (2008) also reasons that changes in local personal income may affect property taxes. He argues that rising total income in a community could lead to higher demand for public goods, potentially causing public officials to meet the demand by raising property tax rates.

Based on data from 1975 to 2008, both the magnitude and timing of these effects can be estimated using the following equation:

$$\Delta \ln (property\ tax\ revenue_t) = \alpha + \sum_{i=t-1}^{t-6} \beta_i \cdot \Delta \ln(house\ prices_i) +$$
$$\sum_{i=t-1}^{t-6} \phi_i \cdot \Delta \ln (personal\ income_i) + \varepsilon \tag{1}$$

In the equation, the change in local property tax revenues between fiscal years *t* and *t-1* depends on changes in house prices and personal income, where all variables are expressed in nominal terms.[7] Both of the independent variables are included with five lags. Each observation is for a given state in a given fiscal year. Local revenue data include data from cities, counties, school districts, townships, and special districts.[8] House price data are available from the Federal Housing Finance Agency (FHFA), and personal income data are available at the state level from the Bureau of Economic Analysis.[9]

Between 1975 and 2008 nominal local property tax revenues in the United States grew 6.3 percent per year on average while nominal house prices grew about 5.5 percent per year on average. Equation 1 estimates the effect of house price appreciation on the growth of property tax revenues. Specifically, the use of log form allows the estimated coefficients

to be interpreted as the percentage-point change in the growth rate of property tax revenues resulting from a 1-percentage-point increase in house price growth or personal income growth. In other words, if home prices increase by 6.5 percent in a given year (instead of the average of 5.5 percent), then the growth rate of property tax revenues is estimated to increase by β.
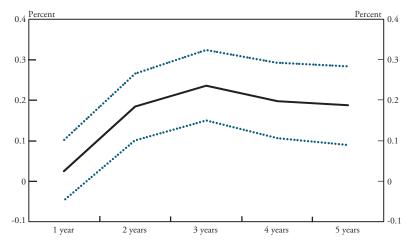
The regression results are illustrated in Chart 3, based on the coefficient estimates presented in Table 1 in the Appendix (see column 1). They show the cumulative effect of a 1-percentage-point increase in house price appreciation on local property tax revenue over one to five years. For example, after three years the cumulative effect of a 1-percentage-point increase is a 0.24 percent increase in property tax revenue. This cumulative effect is found by summing the estimated coefficients on house prices in each of the first three lags in the regression equation. The solid line in the chart shows the point estimates, and the dotted lines indicate the 90 percent confidence bounds, or the range around the point estimate where the data will statistically fall 90 percent of the time. Most of the impact occurs in the second year after the change in house prices.[10] This suggests that the sharp declines in home prices in fiscal year 2010 will likely have a significant impact on local revenues in fiscal year 2012.

The estimated delay in the effect of changes in house prices on tax revenue is likely due to the periodic nature of house value assessments. Each state has different rules for how frequently values must be reassessed. In Colorado, homes are reassessed every two years, and values are determined by looking at home sales over the prior two years (Gunnison County Assessor's Office). In other states the lag is shorter. In New Mexico, for example, property valuations for the current year are based on market values in the previous year (*Las Cruces Magazine*).

A 1-percentage-point increase in house price appreciation translates into less than a 1-percent increase in local property tax revenues for several reasons. First, local property taxes are assessed on other property in addition to homes. According to Lutz (2008), approximately 40 percent of taxable assessments come from nonresidential property. For example, property taxes are assessed on farmland, business property, and personal property. If the prices of these items did not change at

Chart 3

THE CUMULATIVE EFFECT OF A CHANGE IN HOUSE PRICE GROWTH ON LOCAL GOVERNMENT PROPERTY TAX REVENUES

Source: Author's calculations. See Appendix Table 1 for regression results.
Notes: Solid line shows the percent change in local property tax revenue following a 1-percentage-point change in house price growth. Dotted lines show the 90 percent confidence interval around the point estimates.

the same rate as home prices, total property tax revenues would not increase at the same rate.

Another potential reason for a less than one-to-one response is that many local governments have the ability to change tax rates and may do so in response to changes in assessed home prices. When home prices rise and local property tax revenues are increasing, many local governments may choose to lower property tax rates. For instance, in Fairfax County, Virginia, property tax rates were reduced in five consecutive years between fiscal year 2002 and fiscal year 2007 as property tax assessments increased. Even with the reduction in property tax rates, property tax revenues still increased but by less than they would have without the reduction in tax rates (Fairfax County, Virginia).

The opposite may happen after a decline in home values. Facing lower home value assessments, local governments may choose to raise tax rates so that property tax collections do not decline along with house prices. As property tax assessments started to fall in fiscal year 2009 in Fairfax County, officials opted to increase property tax rates. Additional tax hikes followed in fiscal years 2010 and 2011. However,

property tax bills still declined for residents, but by less than they would have without the tax rate increase (Fairfax County, Virginia). In 2011 several Tenth District local governments also increased property tax rates, including: Omaha, Nebraska; Fairway, Kansas; and Wyandotte County, Kansas. Several other district jurisdictions are considering increases for 2012.[11] By altering the property tax rate, some local governments have the option to keep property tax revenues more stable than they otherwise would be.

However, many states restrict the ability of local governments to increase property taxes by limiting tax rate increases, limiting increases in assessed home values, or limiting the increase in property tax revenues. For example, in Oklahoma, assessed property values cannot increase more than 5 percent per year. However, because the limit in Oklahoma is on assessed values alone, property tax revenue can still increase more than 5 percent if tax rates are increased (Oklahoma County Assessor). These restrictions may lead property tax revenues to increase at a slower pace than home values when housing markets are booming. However, in states that restrict assessed values or property tax revenues, declining market home values will not trigger the same restrictions. Therefore, it is possible that property tax revenues may respond somewhat differently in a booming market than in a bust for states that impose property tax limitations.

Measuring the impact of farmland prices on local property tax revenue

In addition to home prices and incomes, property tax revenues in some areas may depend on changes in farmland values. To estimate the impact of changes in farmland values on property tax revenues, five lags of the change in farmland prices can be added to equation 1.[12] Similar to house prices, an increase in farmland values is expected to increase property tax revenues. The regression results are shown in column 2 of Table 1 in the Appendix.

Somewhat surprisingly, changes in farmland prices do not have a statistically significant effect on property tax revenues. There are several potential reasons for this result. One reason is that, in many states, farmland values are assessed based on a long history of potential earnings. For example, in Kansas, farmland is assessed based on the median productivity of farmland over the eight year period ending two years

prior to the assessment year (Kansas Statute 79-1476). Therefore, assessments for farmland in Kansas use data over the past 10 years. Calculating assessments over such a long period makes it unlikely that farmland assessments will closely follow market farmland values.

In addition, in many states property taxes from farmland make up only a small share of total property tax revenue. In 15 states, property tax revenues from farmland make up less than 1 percent of total property tax revenue.[13] Therefore, changes in farmland prices will have only a small impact on changes in property taxes in many states.

Similar to property taxes on houses, local governments may also choose to change their effective tax rates when farmland prices change. For instance, after two years of sharp increases in farmland prices, Nebraska started to assess farmland at 75 percent of market value in 2007 compared with 80 percent in 2006 (Nebraska Department of Revenue Property Assessment Division). By reducing the assessment ratio, the effective tax rate as a percent of market farmland prices was lowered.

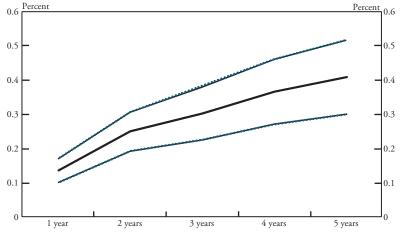*Measuring the impact of state revenues on state transfer revenue to local governments*

Local governments are heavily dependent on state governments for revenue. Thus, when state revenue falls, local governments may be vulnerable to cuts in funding. A decrease in state revenue is likely to reduce state transfers to local governments for the simple reason that state governments will have fewer funds to spend. With fewer funds, they may choose to make fewer transfers to local governments. State transfers to local governments may also change in response to changes in local personal income. Higher personal incomes lead to higher state income tax revenues, which may translate into higher state transfers to local governments.

Similar to the property tax revenue analysis, the magnitude and timing of the effect of changes in state government revenue on state transfers to local governments can be estimated by the following equation:

$$\Delta \ln(\text{state transfer revenue}_t) = \alpha + \sum_{i=t-1}^{t-6} \beta_i \cdot \Delta \ln(\text{state revenue}_i) + \sum_{i=t-1}^{t-6} \phi_i \cdot \Delta \ln(\text{personal income}_i) + \varepsilon \qquad (2)$$

Chart 4

THE CUMULATIVE EFFECT OF A CHANGE IN STATE REVENUE GROWTH ON STATE TRANSFERS TO LOCAL GOVERNMENTS

Source: Author's calculations. See Appendix Table 2 for regression results.
Notes: Solid line shows the percent change in state transfer revenue following a 1–percentage–point change in state revenue growth. Dotted lines show the 90 percent confidence interval around the point estimates.

In the equation, the change in state transfer revenue between fiscal years *t* and *t-1* depends on changes in state revenue and personal income, where all variables are expressed in nominal terms.[14] Both of the independent variables are included with five lags.

The regression results are illustrated in Chart 4, based on the coefficient estimates presented in Table 2 in the Appendix (see column 1). They show the cumulative effect of a 1-percentage-point change in state revenue growth on state transfers to local governments over one to five years. For example, between 1961 and 2008 nominal state revenues grew about 8 percent per year on average in the United States. If in a given year state revenues grow 9 percent instead of 8 percent, state transfers to local governments are estimated to increase by 0.41 percent more after five years than they would have without the increase. This cumulative effect is found by summing the estimated coefficients on state revenue in each of the five lags in the regression equation. The solid line in the chart shows the point estimates, and the dotted lines indicate the 90 percent confidence bounds. Although the effect of state revenue changes on transfers to local governments continues to rise

over the five year period, changes in state revenue have a significant impact after just one year. The cumulative effect of a 1-percentage-point change in state revenue growth is a 0.14 percent change in state transfers after one year and a 0.25 percent change after two years. This suggests that much of the decline in state revenues during the recent recession may have already been passed through to local governments, although some additional cuts may occur up to five years after the decline in state revenue growth.

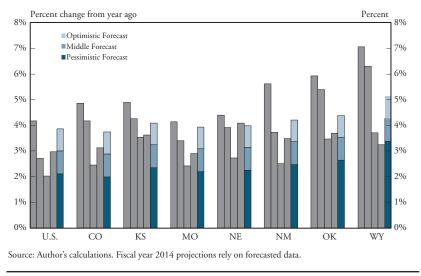## III. THE OUTLOOK FOR LOCAL GOVERNMENT REVENUES

Declines in home prices and state revenues over the past few years are likely to strain local government revenues. As shown in the previous section, some of these effects will likely occur after just one year, and some will likely occur over several years. In this section, data on home prices and state revenues over the last few years are used to project local property tax revenues and state transfers to local governments in the coming years.

Projecting local property tax revenues

Projections for the growth of local property tax revenue in the United States and each district state can be calculated for fiscal years 2010 to 2014 using estimates derived in the previous section (Chart 5). Specifically, these projections are calculated by simulating equation 1 using the estimated coefficients obtained from the regression results (column 3 of Appendix Table 1).[15] Local property tax projections through fiscal year 2013 rely solely on historical data on home prices and personal income. In addition to historical data, local property tax revenue projections for fiscal year 2014 require house price forecasts and personal income forecasts for fiscal year 2012.[16] For house price projections, three different scenarios are used. Under the optimistic scenario, house prices are assumed to appreciate 5 percent in fiscal year 2012. In the middle scenario, house prices are assumed to stay flat in fiscal year 2012, and in the pessimistic scenario, house prices are assumed to fall 5 percent.

As shown in Chart 5, property tax revenue growth is projected to slow in fiscal year 2011 and slow further in fiscal year 2012. But fiscal

Chart 5

LOCAL PROPERTY TAX REVENUE PROJECTIONS, FISCAL YEAR 2010 – FISCAL YEAR 2014

Source: Author's calculations. Fiscal year 2014 projections rely on forecasted data.

year 2012 is projected to be the weakest year for property tax revenue growth in the United States and every district state except Wyoming, where property tax revenue growth is expected to fall slightly further in fiscal year 2013.[17] Despite the sharp decline in house prices over the past few years, nominal property tax growth is projected to remain positive for the United States and every Tenth District state based on historical evidence. This suggests that local governments may increase property tax rates in order to compensate for declining house values. In addition, even as house prices decline, the overall population continues to grow and with it the amount of property that is taxed (both housing and other property) is likely increasing as well.

However, after adjusting for inflation, property tax revenues may decline in the near term. According to the Bureau of Labor Statistics, consumer prices rose 3.6 percent in July 2011 compared to the previous year. At this rate of inflation, real local property tax revenues in the United States are projected to decline in fiscal year 2011. They would also be projected to decline in 2012, 2013, and under both the pessimistic and middle forecasts for fiscal year 2014 if inflation exceeds 3 percent.

Fiscal year 2012 is projected to be the weakest year for property tax revenue growth for two reasons. First, in most district states,
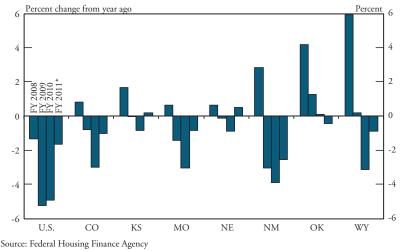
Chart 6
ANNUAL HOUSE PRICE CHANGES

Percent change from year ago   Percent

FY 2008
FY 2009
FY 2010
FY 2011*

U.S.   CO   KS   MO   NE   NM   OK   WY

Source: Federal Housing Finance Agency
Note: Fiscal year 2011 is based on the average over the first three quarters of the year.

home price declines were most severe in fiscal year 2010 (Chart 6). As shown by the regression estimates, house price changes start to have an impact on property tax revenues two years after the change in home prices. Therefore, the decline in home prices in fiscal year 2010 reduces growth in property tax revenues in fiscal year 2012. Second, personal income growth was slowest in fiscal year 2010 in every district state and the United States. This also reduces property tax revenue growth in fiscal year 2012.

Local property tax revenue growth in most Tenth District states is projected to outperform U.S. growth in fiscal years 2010–2014.[18] The primary reason for the better performance of local governments in district states is the difference in home price appreciation over the past few years compared with the nation. In fiscal years 2008–2010, home prices held up much better in every district state compared with the nation, and in fiscal year 2011 home prices outperformed the nation in every district state except New Mexico. Since changes in home prices are estimated to affect property tax revenues, the fact that home prices have held up better in district states translates into more solid property tax revenues. Another contributing factor is that, as the nation slipped into recession, personal income growth in district states outpaced national growth in fiscal years 2008 and 2009. As shown by the regression

results, faster personal income growth is estimated to increase growth in property tax revenues.

The performance of home prices over the next year will likely have a large impact on property tax revenue growth in fiscal year 2014. In the United States in fiscal year 2014, nominal property tax revenues are expected to grow 2.1 percent under the pessimistic home price forecast, 3 percent under the middle forecast, and 3.9 percent under the optimistic forecast.

These projections are subject to considerable uncertainty. First, and perhaps most important, the projections rely on regression estimates using historical data. Therefore, the projections assume that the relationship between house values, personal income, and property tax revenue will be the same in the future as it has been in the past. Specifically, the projections assume that local governments will increase effective tax rates in response to the recent declines in home prices to the same extent that they lowered effective tax rates in response to house price increases in the past.[19]

However, it is possible that local government responses to home price increases and declines may not be symmetric, and large national home price declines have been rare. One reason that property tax revenue may decline more than projected is related to the limited ability of some local governments to increase property tax revenue. House prices were increasing in most of the sample period used in the regressions, and as mentioned in Section II, some states restrict the ability of local governments to increase property tax revenue. Therefore, the regression results may understate what would have happened to property tax revenues had these restrictions not been in place. When home prices fall, however, local governments no longer face these limitations and property tax revenue could fall in step with market values unless tax rates are increased.

It is also possible that local governments may, out of necessity, respond differently this time around. The recent recession was more severe than any downturn since the Great Depression. In addition to sharp declines in employment, home prices declined across the country and a severe financial crisis led to tighter credit conditions. Therefore, local governments in some cases may be more aggressive in increasing tax rates than in the past to prevent a decline in the growth of prop-

erty tax revenue. If this happens, property tax revenue growth may be higher than projected.

So far, recent property tax data suggest that projections based on historical evidence may be somewhat optimistic. Initial estimates of property tax revenues suggest that local collections fell 0.5 percent between fiscal year 2010 and 2011, which is a larger decline than the 2.7-percent increase that was projected based on historical data (U.S. Census Bureau). However, it is also important to note that the decline in local property taxes has been much smaller than the decline in house prices, which suggests that local governments have likely raised property tax rates to compensate for falling home prices but perhaps to a lesser degree than in the past.

Uncertainty about future home prices is another important consideration. While the analysis uses the same three home price scenarios for each district state and the United States, home price appreciation will likely vary geographically over the coming years, and these differences will likely produce differences in property tax revenue growth. In addition, home prices may fall more than 5 percent or increase more than 5 percent. Either of these situations would likely result in property tax revenue growth that is outside the range projected in Chart 5 for fiscal year 2014.
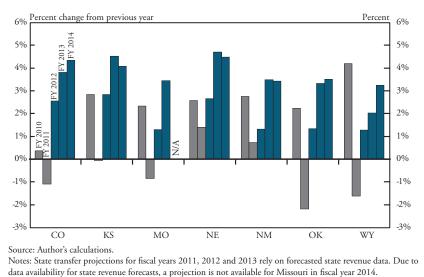
Projecting state transfer revenue to local governments

Similar to local property tax revenues, state transfers to local governments can be projected using the regression estimates from Section II and data on state revenues (Chart 7).[20]

The state revenue data and forecasts are provided by each district state, and therefore, a state transfer revenue forecast summed at the national level would be difficult to obtain.[21] In every district state, nominal growth in state transfers to local governments is projected to be slowest in fiscal year 2011 and then rebound in fiscal year 2012. After adjusting for inflation, growth in state transfers to local governments is projected to be negative in fiscal year 2011. In every district state, transfers would also be projected to decline in fiscal year 2012 if inflation reaches 2.9 percent.

Fiscal year 2011 is the weakest year in terms of state transfer revenue growth for two reasons. First, state revenues fell sharply in many

Chart 7

PROJECTIONS OF STATE TRANSFERS TO LOCAL GOVERNMENTS, FISCAL YEAR 2010 – FISCAL YEAR 2014

Percent change from previous year

Percent

FY 2010
FY 2011
FY 2012
FY 2013
FY 2014
N/A

CO   KS   MO   NE   NM   OK   WY

Source: Author's calculations.
Notes: State transfer projections for fiscal years 2011, 2012 and 2013 rely on forecasted state revenue data. Due to data availability for state revenue forecasts, a projection is not available for Missouri in fiscal year 2014.

district states in fiscal year 2009 and fiscal year 2010 (Chart 8). Both of these years are used to project fiscal year 2011 state transfer revenue growth. Second, as shown in Section II, the timing of the impact of state revenues on state transfer revenue starts to occur just one year after a change in state revenues. Therefore, the majority of the impact from the sharp declines in state revenues in fiscal years 2009 and 2010 is realized in fiscal year 2011.

State revenue growth is projected to improve dramatically starting in fiscal year 2011. This improvement in state revenue growth translates into higher projected state transfers to local governments starting in fiscal year 2012.

Similar to the property tax revenue projections, the state transfer revenue projections rely on regression estimates from historical data. Therefore, the projections assume that state governments will respond to changes in state revenue over the next several years the same as they have in the past. However, state governments may respond differently this time. In particular, the depth of state revenue declines may cause some state governments to make larger cuts to state transfers than they have in the past.
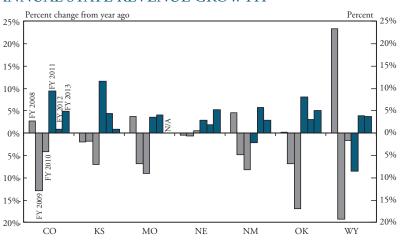
Chart 8
ANNUAL STATE REVENUE GROWTH

Source: Author's calculation based on data from individual state websites.
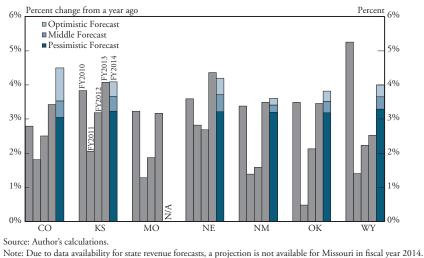Note: Fiscal years 2011, 2012 and 2013 are based on forecasted state revenue data. See references for details.

Combining property tax revenue projections and state transfer revenue projections

For most district states, property tax revenue growth is expected to be slowest in fiscal year 2012, and state transfer revenue growth is expected to be slowest in fiscal year 2011. These projections can be combined to obtain a better understanding of local government revenues over the next few years. On average, property taxes and state transfers make up about half of local revenues in the Tenth District: 44 percent in Colorado, 57 percent in Kansas, 48 percent in Missouri, 39 percent in Nebraska, 62 percent in New Mexico, 50 percent in Oklahoma, and 59 percent in Wyoming.

However, each state relies differently on property tax revenues and state transfer revenues. For example, in Nebraska, property tax revenues were 1.3 times higher than state transfer revenues in 2008, but in New Mexico, property taxes were just 0.3 times state transfers.[22] Using the projections in Chart 5 and Chart 7 and the level of property tax revenues and state transfer revenues in fiscal year 2008, a growth rate for these two sources combined can be calculated.[23]

Local government revenues from property taxes and state transfers combined are projected to grow at their slowest rate in fiscal year 2011

Chart 9

PROJECTED GROWTH OF LOCAL GOVERNMENT PROPERTY TAX REVENUES AND STATE TRANSFER REVENUE COMBINED, FISCAL YEAR 2010–FISCAL YEAR 2014

Source: Author's calculations.
Note: Due to data availability for state revenue forecasts, a projection is not available for Missouri in fiscal year 2014.

in every district state except Nebraska (Chart 9). After adjusting for inflation, overall revenues would actually fall in fiscal year 2011 in every district state, and if inflation remains above 3.2 percent, they would fall in fiscal year 2012 as well. Even though property tax revenue growth isn't expected to reach its low until fiscal year 2012 in most states, the very low rates of state transfer growth in fiscal year 2011 resulted in fiscal year 2011 being the combined low point as well. Nebraska's heavy reliance on property tax revenue, which is expected to reach its low in fiscal year 2012, combined with state transfer revenue growth that is higher than other district states in fiscal year 2011, led to slightly slower combined growth in fiscal year 2012.

In every district state, combined revenue growth is expected to rebound sharply by fiscal year 2013. This rebound reflects much stronger growth in state transfers in fiscal year 2013 and a small rebound in property tax revenue growth in fiscal year 2013 in most states. Overall, Chart 9 suggests that the slowest fiscal year for local government revenue growth may end in June 2011. However, nominal growth rates may continue to be sluggish through at least fiscal year 2012.

IV.   CONCLUSION

Property tax revenue and state transfer revenue make up more than 56 percent of all local government revenues in the United States, and therefore have a large impact on the overall health of local government finances. During the past few years, house prices have declined, and state revenues have decreased. These factors have contributed to a concern that local government revenues could slow over the next few years.

Historically, changes in home prices are estimated to have an effect on property tax revenues, with most of the impact occurring two years after the change in house prices. Based on these historical estimates, property tax revenue growth was projected to slow in fiscal year 2011 and reach its lowest point in fiscal year 2012, but revenues were not projected to experience an outright decline due in part on the ability of local governments to raise property tax rates. However, actual data on property tax revenues for fiscal year 2011 revealed a modest decline. This suggests local governments have not responded quite as aggressively to home price changes as in the past.

State transfers to local governments are estimated to increase in response to increases in state revenue growth, suggesting that many state governments pass along some of their fiscal fortunes and woes. About one-third of this effect occurs within one year of the change in state revenues, and more than 60 percent occurs within two years. This shorter time frame and the fact that state revenues seem to have already turned a corner lead to a projection that state transfer revenues will be slowest in fiscal year 2011.

Taken together, the findings suggest that overall local government revenue growth is likely to reach its slowest point in fiscal year 2011 and then pick up over the next two years. Beginning in fiscal year 2014, growth of local government revenues will depend on changes in house prices in the current fiscal year. If house prices increase 5 percent, for example, nominal local government revenues are projected to grow more than twice as fast than in fiscal year 2011 in many district states. However, if house prices continue to fall, local government revenue growth may be slower in fiscal year 2014 than in fiscal year 2013.

APPENDIX

Table 1

THE EFFECTS OF HOME PRICES AND FARMLAND VALUES ON LOCAL PROPERTY TAX REVENUES
DEPENDENT VARIABLE: CHANGE IN LOG (LOCAL PROPERTY TAX REVENUES)

	I	II	III
Change in Log (House Price) at t-1	0.025	-0.001	
	(0.045)	(0.052)	
Change in Log (House Price) at t-2	0.158***	0.134**	0.174***
	(0.051)	(0.060)	(0.045)
Change in Log (House Price) at t-3	0.052	0.070	0.055
	(0.049)	(0.058)	(0.049)
Change in Log (House Price) at t-4	-0.038	-0.022	-0.038
	(0.049)	(0.057)	(0.049)
Change in Log (House Price) at t-5	-0.011	0.036	-0.017
	(0.043)	(0.051)	(0.043)
Change in Log (Farmland Value) at t-1		0.002	
		(0.025)	
Change in Log (Farmland Value) at t-2		0.013	
		(0.026)	
Change in Log (Farmland Value) at t-3		-0.062**	
		(0.026)	
Change in Log (Farmland Value) at t-4		-0.006	
		(0.026)	
Change in Log (Farmland Value) at t-5		-0.013	
		(0.025)	
Change in Log (Personal Income) at t-1	0.054	0.021	
	(0.089)	(0.095)	
Change in Log (Personal Income) at t-2	0.090	0.092	0.129
	(0.102)	(0.108)	(0.088)
Change in Log (Personal Income) at t-3	0.191*	0.194*	0.174*
	(0.101)	(0.105)	(0.098)
Change in Log (Personal Income) at t-4	-0.022	-0.019	-0.011
	(0.096)	(0.103)	(0.093)

Table 1 continued

Change in Log (Personal Income) at t-5	0.270***	0.243***	0.270***
	(0.078)	(0.086)	(0.078)
Constant	0.012	0.017***	0.014***
	(0.006)	(0.006)	(0.005)
Observations	1350	1296	1350
Overall R-squared	0.093	0.080	0.092

Notes: All regressions include fixed effects. The statistical significance for 1 percent, 5 percent, and 10 percent levels is denoted by ***, **, and *, respectively. Standard errors are in parentheses.

Table 2

THE EFFECT OF STATE REVENUES ON STATE TRANSFER REVENUE

DEPENDENT VARIABLE: CHANGE IN LOG(STATE TRANSFER REVENUE)

	I
Change in Log (State Revenue) at t-1	0.136***
	(0.021)
Change in Log (State Revenue) at t-2	0.114***
	(0.022)
Change in Log (State Revenue) at t-3	0.053**
	(0.023)
Change in Log (State Revenue) at t-4	0.064***
	(0.023)
Change in Log (State Revenue) at t-5	0.042*
	(0.023)
Change in Log (Personal Income) at t-1	0.542***
	(0.075)
Change in Log (Personal Income) at t-2	0.055
	(0.084)
Change in Log (Personal Income) at t-3	0.048
	(0.079)
Change in Log (Personal Income) at t-4	-0.159**
	(0.077)
Change in Log (Personal Income) at t-5	-0.023
	(0.067)
Constant	0.012**
	(0.006)
Observations	2100
Overall R-squared	0.123

Notes: All regressions include fixed effects. The statistical signifigance for 1 percent, 5 percent, and 10 percent levels is denoted by ***, **, and *, respectively. Standard errors are in parentheses.

ENDNOTES

[1]State transfer revenue is commonly referred to as state intergovernmental revenue to local governments.

[2]Local governments in Colorado, Nebraska, New Mexico, Oklahoma, and Wyoming do not have any income taxes. Local governments in Kansas collected just 0.02 percent of all revenues from income taxes.

[3]State tax revenue for fiscal year 2008 was calculated by summing quarterly state tax revenue data from the U.S. Census Bureau from the third quarter of 2007 to the second quarter of 2008. State tax revenue for fiscal year 2010 was calculated similarly. Revenue was more than 10 percent lower in fiscal year 2010. The first three quarters of 2011 were compared to the first three quarters of fiscal years 2010 and 2008 to determine that tax revenue has increased but still remains below peak levels.

[4]Data reflect the percent change in home prices from the first quarter of 2006 to the first quarter of 2011, according to the seasonally-adjusted purchase-only house price index from the Federal Housing Finance Agency. According to the seasonally-adjusted 10-city and 20-city composite home price indexes from S&P/Case-Shiller, home prices fell 31.8 percent from April 2006 to April 2011.

[5]These numbers were calculated by dividing total property taxes paid by farmers by local property tax revenue. Total property taxes paid by farmers are available in the 2007 Census of Agriculture for each state. Local property tax revenue data is available from the U.S. Census. These percentages provide an estimate of the amount of local property tax received by local governments from farmland. The property tax data, however, also includes property taxes paid on other farm property and also any property tax paid by farmers to the state government.

[6]Data reflect changes in nonirrigated farmland values between the second quarter of 2010 and the second quarter of 2011 and are available from the Federal Reserve Bank of Kansas City Agricultural Credit Survey.

[7]This equation is similar to the formulation used in Lutz (2008).

[8]Local property tax revenue data are available from the U.S. Census Bureau and are aggregated at the state level. State level revenue data are not available for fiscal years 2001 and 2003. However, national totals of local government revenue are available for these years. These national totals and a given state's share of these totals in the two surrounding years were used to estimate values for 2001 and 2003.

[9]The all transactions index of the FHFA house price data was averaged over the four quarters in a given fiscal year to get a yearly value.

[10]Lutz (2008) estimates that house price changes begin to affect property tax collections in the third year. However, the point estimates for the United States are higher in Lutz (2008). He finds that for the United States, a 1-percent change in house values increases property tax revenues by 0.4 percent in years 3 to 5 on average.

[11]Tax rate information is based on multiple news sources, including Bergner (2011), Bormann (2011), Bormann (2010), Pearce (2011), Perez and Robb (2011), Reed (2011), and Rose (2011).

[12]Farmland prices are available from the U.S. Department of Agriculture (USDA). Farmland values are the asset value per acre of agriculture land including buildings.

[13]See footnote 5.

[14]Revenue data are available from the U.S. Census Bureau for fiscal years 1961 to 2008. State level revenue data are not available for 2001 and 2003. However, national totals of local government revenue and state revenue do exist for these years. These national totals and a given state's share of these totals in the two surrounding years were used to estimate values for 2001 and 2003.

[15]As shown in Chart 3 and in column 1 of Appendix Table 1, the first lag of house values does not have a significant impact on property tax revenues. Therefore, to minimize the need for house price forecasts, equation 1 is estimated again using only lags 2 through 5. These regression results are presented in column 3 of Appendix Table 1.

[16]For example, the percent change in local property tax revenue in fiscal year 2013 relies on data from fiscal years 2007 to 2011. House price data is available from the Federal Housing Finance Agency, and personal income data is available from the Bureau of Economic Analysis for fiscal years 2004 – 2010. For fiscal year 2011, the first three quarters of data for fiscal year 2011 (Q3 2010 – Q1 2011) are averaged from these same sources. Personal income projections are obtained from Global Insight.

[17]Property tax revenue growth is expected to slow further in fiscal year 2013 in Wyoming because of the sharp decline in personal income growth in fiscal year 2010. Personal incomes fell 2.3 percent in fiscal year 2010 after rising 5.2 percent the previous year in Wyoming.

[18]There are a few minor exceptions. In fiscal year 2010, property tax revenue growth in Missouri is projected at 4.15 percent compared with 4.17 percent in the United States. In fiscal year 2013, property tax revenue growth is projected at 2.91 percent in Missouri and 2.97 percent in the United States. In the middle forecast for fiscal year 2014, property tax revenue is expected to grow 2.89 percent in Colorado compared with 3.01 percent in the United States.

[19]The effective tax rate is the property tax levied on a home divided by the home's market value. The effective tax rate could increase if tax rates increase or if the assessed value of the home does not increase by the full market increase in the home value.

[20]The impact from state revenues starts to occur during the first year, and therefore regression estimates from Section II (including all five lags) must be used in the projections. This means that in order to project state transfer revenue growth for fiscal year 2014, data on state revenues must be obtained for fiscal years 2008 to 2013.

[21]The data used are state general fund revenues. Data were collected from state websites and by contacting individuals at the Oklahoma Policy Institute and the Missouri Office of Administration. Because these estimates come directly from each individual state, the definition about what revenues are included in the general fund may differ. The general fund revenues reported are a subset of the Census revenue data used in the regression analysis in Section II. General fund revenues used in the projections represent gross receipts in Colorado, Kansas, New Mexico, Oklahoma, and Wyoming and net receipts in Missouri and Nebraska.

[22]In 2008, property tax revenue divided by state transfer revenue was 1.16 in Colorado, 0.94 in Kansas, 0.99 in Missouri, 1.30 in Nebraska, 0.27 in New Mexico, 0.51 in Oklahoma, and 0.59 in Wyoming.

[23]The combined level of revenue in 2009 is given by:

State transfer revenue$_{2009}$ + property tax revenue$_{2009}$ = exp(state transfer revenue$_{2008}$ + ln(state transfer growth$_{2009}$)) + exp(property tax revenue$_{2008}$ + ln(property tax growth$_{2009}$))

The combined growth rate of revenues in 2010 is given by:

ln(state transfer revenue$_{2010}$ + property tax revenue$_{2010}$) − ln(state transfer revenue$_{2009}$ + property tax revenue$_{2009}$)

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