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Still Not Out of the Woods? New Jersey Schools during the Recession and Beyond

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Abstract

Schools are essential in forming human capital and in improving the long-term health of the economy. They are also heavily reliant on state and local funds, which were severely depleted during the Great Recession. To alleviate some of the strain on local budgets, the federal government passed and implemented a large stimulus package, which included funds for school districts. However, the stimulus funds were drawn down beginning in 2011, at a time when state and local revenues were still under pressure. In this paper, we use a detailed panel data set of all school districts in New Jersey for the period 1999 through 2012 and analyze the impact of this series of events on New Jersey school finances using a trend-shift analysis. We find that the recession led to cuts in funding and expenditure. While the stimulus served as an effective stopgap against major cuts, the picture was very different once the stimulus funds were depleted, with significantly deeper cuts in both funding and spending. With cutbacks in state aid and the withdrawal of the stimulus funding, local funding played a larger role, despite the fact that local funding was also decreasing relative to trend. Examining the components of expenditure, we find that instructional categories were prioritized over noninstructional, so instructional expenditure only sustained small cuts in the initial years after recession. But when the stimulus dried up and the economy was still stagnating, instructional expenditure received severe cuts. We analyze variations by metropolitan area, and find that Camden experienced the largest cuts while Wayne experienced the smallest (although the declines in funding and expenditure were still significant). Our findings are an important step in understanding how recessions and fiscal policy affect school finances and inform future policy decisions relating to school finances during fiscal crises.

Key words: school finance, recession, ARRA, federal stimulus

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Introduction

Although the economy is no longer in a recession, it has not recovered as quickly as many hoped. Many of the effects of the housing bubble's burst are still being felt throughout the economy. During the recession and its aftermath, state and local governments across the nation faced fiscal crises as their revenues from income, sales, and property taxes plummeted. To help ameliorate some of the detrimental effects of the recession and to kick start the economy, the federal government passed a large stimulus bill—the American Recovery and Reinvestment Act (ARRA)—in 2009. But ARRA was short-lived and receded at a time when state and local government revenues were still under stress. Understanding the effects of these extraordinary circumstances on school finances is essential from policy, social, and scholarly perspectives. This paper aims to do just that in the context of the state of New Jersey. The analysis promises to give us insight into school district behavior in times of fiscal duress as well as provide valuable input to appropriate policy during such crises.

New Jersey is interesting for various reasons. It is the third highest-ranked state in the country in per-pupil expenditure. It is also home to some of the poorest districts (the Abbott districts, which receive additional state funds) and some of the wealthiest districts. This wealth disparity makes studying NJ all the more interesting, and it would be instructive to see whether there were variations of experiences by metro areas and poverty.

There are many avenues through which the Great Recession could affect school districts. Districts rely on property taxes for much of their revenue, so as the housing market collapsed their primary source of revenue was badly hurt. Districts also rely on funding from the state government, but state governments across the country faced budget crises as their income and sales tax revenues fell. To temporarily fill the gap, the federal government allocated \$100 billion to the states as part of ARRA. However, once the stimulus money was used and the economy

was still weak, districts were forced to make budgetary sacrifices. In this paper, we examine the effects of the Great Recession, the stimulus, and the withdrawal of the stimulus on school districts. In particular, we see how the recession affected the way school districts were funded and how they expended their budgets. On the funding side, we study how the recession affected local districts' revenue flow, state aid to districts, and the effect of federal intervention through ARRA. On the expenditure side, we examine how districts changed the composition of their spending in response to the recession. Through this analysis we hope to gain a better understanding of how school districts react to fiscal fluctuations and changes in budgetary restrictions. In addition to studying aggregate patterns, we also analyze whether there were variations in school finance experiences across metro areas in New Jersey. It should be noted here though that this study solely pertains to school finances and educational outcomes (or any other outcomes) are beyond the scope of this paper.

We use detailed school finance indicators and an interrupted time series strategy for our study. Our analysis reveals some interesting patterns. The federal stimulus seems to have forestalled major cuts. But the picture was very different in the later years when the stimulus dried up. The withdrawal of federal stimulus also coincided with declines in state and local revenues. Consequently, the districts faced tough choices and spending cuts were observed in many categories, including instructional expenditure, the category that matters the most for student learning. Studying variations by metropolitan areas, we find that Camden and Edison experienced the largest drops in per-pupil funding and expenditure. Camden also cut instructional expenditure the most. Interestingly, Wayne was able to avoid any significant shifts in its local funding.

A caveat to our analysis should be noted here. We use an interrupted time series or trend shift analysis. Using pre-recession data we calculate the trend for each school finance variable,

and examine, for each post-recession year (2009-2012), whether there was a shift from the trend in that year. Note that if there were shocks during the post-recession years that affected our financial indicators independent of the recession, then our estimates would be biased by these. Because of this, we view our estimates as strongly suggestive but not necessarily causal. This caveat should be kept in mind while interpreting the results of this paper. However, to the best of our knowledge we are not aware of any such potential confounding factors. Moreover, the Great Recession was not a marginal shock; rather it was a highly discontinuous shock. So even if there were small shocks during these years they would be by far overpowered by a shock as disruptive as the Great Recession and the effects obtained are likely to capture its effects.

This paper builds on and extends the literature on school district finance. Stiefel and Schwartz (2011) find that per-pupil funding in New York City increased a great deal during the Bloomberg administration. Rubenstein et al. (2007), studying schools in NYC, Cleveland, and Columbus, find that higher poverty schools received more per-pupil funding. Baker (2009), studying schools in Texas and Ohio, finds that resources vary according to student needs within districts.

This paper is most closely related to the literature that studies the impact of recessions on schools. Reschovsky and Dye (2008) analyze the effect of changes in state aid per capita on changes in property taxes during the 2001 recession. They find that state funding cuts were associated with increased property tax funding to offset, at least partially, the cuts in state aid. This paper differs from Reschovsky and Dye (2008) in two important ways. First, it focuses on the effects of the Great Recession, which was significantly worse and carried a far broader impact than the 2001 recession. Second, in addition to the immediate short term effects, we also analyze the medium-term effects of the recession, unlike Reschovsky and Dye (2008). The relatively longer term analysis reveals significant and interesting developments occurring several

years after the recession was technically over. It is crucial for us to understand the impacts of recessions, and its aftermath, on schools because of the vital role they play in our society and the future economy, and this paper takes a step forward in this direction.

2 Background

The Great Recession placed a significant burden on state and local governments' budgets. Recessions affect governments' revenue and budgets in a variety of ways: the downturn in housing prices, employment, income, and business activity each contributed to smaller tax revenues and larger budget gaps.

Local governments generally rely heavily on property taxes, which in the early part of the decade were supported by a booming housing market. House prices in the United States had been increasing at an average rate of 7.8% between 2000 and 2006. However, that growth turned out to be unrealistic, and as delinquencies and foreclosures increased, the bubble burst and home prices declined at an average annual rate of 4.9% during the recession quarters. Housing prices in New Jersey were even more volatile than the national average, increasing at an average rate of 11.6% between 2000 and 2006, and then falling to an average rate of -4.7% in the recession quarters. Just as house prices were picking up, the New Jersey state legislature passed a law instituting a property tax rate cap, which limited property tax increases to 2% per year effective January 2011.

State governments also experienced depleted revenue streams, as unemployment spikes led to less income tax revenue, and lower consumption led to less revenue from sales tax. Right around the recession, in January 2008, the legislature passed the School Funding Reform Act (SFRA), which called for a 7% increase in state funding for K-12 education in the 2008-09 school year. This was also the first year that the recession affected district budgets. Midway through the 2009-10 school year there was a revenue shortfall and education funding was

reduced midyear. There were also cuts in the 2010-11 school year, caused by the same fiscal crisis.⁴ In the 2011-12 school year, some of the funding was restored, but not all—in 2011 aid was reduced for each district by 5% of the prior years' (2010) general fund, while in 2012 it was increased by 2%, so there was still a gap of approximately three percent of the 2010 general fund.

As an attempt to remedy the funding crises faced by the state and districts following the market crash, Congress passed the American Recovery and Reinvestment Act in February 2009, an economic stimulus package that provided an anticipated \$840 billion in new spending, with \$100 billion designated for public education. Districts were directed to use the ARRA funds to save and create jobs, to boost student achievement, and to bridge student achievement gaps. The quantitative requirements specify that 81.8% of the stabilization funds in education go toward the support of public education, and that states must restore for FY 2009, 2010, and 2011 support for public education to the greater of the FY 2008 or FY 2009 level.

Of the total \$100 billion designated to public education nationally, New Jersey received \$2.23 billion. The largest portion of New Jersey's appropriation was distributed based on the state funding formula, which is largely determined by the number of students, poverty, and other special needs of the district. These funds were spent by the end of the 2010 school year.

3 Data

We combine data from multiple sources to create our panel of school districts. The final dataset includes 572 New Jersey school districts from 1999 through 2012.⁵ Most of the finance data come from the New Jersey Department of Education Office of School Finance. We also obtained finance data from the National Center for Education Statistics (NCES) School Finance Survey (F-33) and the US Census Bureau. Non-finance data come from the New Jersey

⁴ <http://www.state.nj.us/education/stateaid/1011/CommissionersMemo2011.pdf>

⁵ Throughout the paper we refer to school years using the year corresponding to the spring semester.

Department of Education Office of Data, Research, Evaluation, and Reporting, the NCES Common Core of Data (CCD), and the Bureau of Labor Statistics (BLS).

The resulting panel has data on total revenue and expenditure and their components. The components of total revenue include contributions of the federal, state, and local governments. The primary components of expenditure that we examine are instruction, instructional support, student services, transportation, student activities, and utilities and maintenance (“utilities”). Definitions for these variables are shown in Table 1. Additionally, we have data on median salary and median years of experience of both teachers and administrators in each district.⁶ All revenue and expenditure variables are expressed in real 2012 dollars, and are analyzed on a per-pupil basis using the district’s average daily enrollment.

We use as controls district-level data on various socioeconomic and demographic characteristics, such as enrollment, racial composition, and the percentage of students eligible for free or reduced-price lunch.

We analyze variations in impacts across metropolitan areas, and study the four largest New Jersey Metropolitan Divisions (as defined by the US Office of Management and Budget). These are: Edison-New Brunswick, New York-White Plains-Wayne, Newark-Union, and Camden. Note that each metro division is a collection of school districts: Edison-New Brunswick contains 121 districts, Wayne contains 107 districts, Newark has 136 districts, and Camden has 103. We use GIS mapping technology to visualize district-level changes in funding as well as to display the metropolitan areas we use in our heterogeneity analysis. The shapefiles are obtained from the US Census Bureau.

4 Empirical Strategy

⁶ All calculated district medians are reported in October of each school year; the years of experience variables are based on the total number of years in public education.

We analyze whether the recession and federal stimulus periods were associated with shifts in various school finance indicators from their pre-existing trends. We use the following specification for this purpose:

$$Y_{it} = \alpha_1 T + \alpha_2 v_1 + \alpha_3 v_2 + \alpha_4 v_3 + \alpha_5 v_4 + \alpha_6 X_{it} + f_i + \varepsilon_{it} \quad (1)$$

where Y_{it} is each financial indicator for school district i in year T ; T is a time trend variable that equals 0 in the immediate pre-recession year (2007-08)⁷ and increments by 1 for each subsequent year and decreases by 1 for each previous year; $v_1 = 1$ if year = 2009 and 0 otherwise; $v_2 = 1$ if year = 2010 and 0 otherwise; $v_3 = 1$ if year = 2011 and 0 otherwise; $v_4 = 1$ if year = 2012 and 0 otherwise; X_{it} represents the school district demographic characteristics—racial composition and percentage of students eligible for free or reduced price lunches; f_i denotes district fixed effects.

The coefficient on the time trend variable, α_1 , denotes the overall trend in the financial indicator in the pre-recession period. The coefficients on the year dummies, α_2 - α_5 , represent the intercept shift in each post-recession year.

All financial variables are inflation-adjusted to 2012 dollars. All regressions reported in the paper include district fixed effects. Demographic controls are used in all regressions and all regressions use standard errors clustered at the school district level. The results are robust, though, to the inclusion or exclusion of covariates.

Note that the post-recession shifts (α_2 - α_5) in the above regressions represent actual shifts of the corresponding inflation adjusted financial variables. However, for easier interpretation and for comparison of the effects across various variables we also express these in percent shift terms. In this method, the effects are expressed as percentage of the pre-recession base of the corresponding dependent variable. This not only enables us to compare the effects across variables, but also gives an indication of the size of the effect. The percentage shift in 2009 thus captures the immediate effect of the recession, the shift in 2010 captures the combined effect of the recession and stimulus, with the shifts in 2011 and 2012 capturing the aftermath.

⁷ In the rest of the paper, we refer to school years by the year corresponding to the spring semester.

An important caveat relating to the above strategy should be mentioned here. The estimates from the above specification capture shifts from the pre-existing trend of the corresponding financial variables. However, these specifications do not control for any other shock(s) that might have taken place in the two years following the recession that might have also affected these financial variables. To the extent that there were such shocks that would have affected our outcomes even otherwise, our estimates would be biased by these. As a result, we would not like to portray these estimates as causal effects, but as effects that are strongly suggestive of the effects of recession and stimulus on various school finance variables. However, we did extensive research to assess the presence of shocks (such as policy changes etc.) that might affect our outcome variables of interest independently of the recession and stimulus. To the best of our knowledge, we are not aware of any such common shocks during this period.

5 Results

5.1 Overall Findings

Figures 2 and 3 show the trends of the financial variables of interest. The plots of funding and expenditure show a leveling off from the pre-recession trend and a slight decline in the recession years. The spike in federal aid in 2010, the result of the stimulus, is clearly visible in 2010. State aid declined sharply immediately following the recession during 2008-2010, the decline being the starkest in 2010, interestingly coinciding with the spike in federal funding.

Funding shares of the three sources of revenue (federal, state, and local) also show major shifts. The share of funding coming from the federal government exhibits a clear spike in 2010 from the stimulus. That year also saw a sharp decrease in the state's share of funding, due to a combination of cuts in state aid and the increased role of federal aid. In 2011 and 2012, as federal aid fell and state aid stagnated, the role of local funding increased. This occurred even though the actual amount of local funding stayed the same or fell in those years because those shifts were less drastic than the shifts in state and federal aid. All expenditure categories show perceptible

declines after the recession, with the declines being the most prominent in the last two years (2011 and 2012).

In the remainder of this section, we investigate whether these patterns in the raw data survive in a more formal interrupted time series (or trend shift) analysis. The primary results of our trend shift analysis are presented in Table 2 and Figure 4. These charts (the table and the figure) exhibit a sharp fall in per-pupil funding in the first year after recession (2009). What is perhaps more noteworthy is that the gap (from the pre-recession trend) grows as time progresses—each year's downward shift is larger than the year before. A similar pattern plays out in expenditure as well.

Looking at the components of funding the effect of the stimulus is apparent in the large significant positive shift in federal aid per pupil in 2010. However, this infusion of funds is only specific to 2010, and is followed by declines in the years after, so much so that by 2012 federal spending is significantly below trend. Figure 5 shows the variation of federal aid across the state's districts and over time. The maps show that the increase in the role federal aid was not isolated to a particular area, but occurred across the whole state. The fall in federal aid from 2010 to 2012 was similarly widespread.

State aid to districts has fallen in all four years, with the largest downward shift occurring in 2011. In the 2010-2011 school year the state reduced aid to all districts by approximately 5% of the district's prior year general fund budget. In 2012 the state restored 2% of the funding, which explains why in 2012 there is a negative shift from trend that is smaller in magnitude than the 2011 shift. Property taxes, the primary driver of local revenue, fell all four years, with local funding falling accordingly. Although these percent shifts are smaller compared with the state and federal shifts, the base is much larger. Despite the fact that local funding fell significantly in every year, its share of funding increased significantly, due to the fall in state aid.

Turning to the components of expenditure, there is a general trend of cuts across the board. These results are presented in Table 3 and Figure 6. Almost all components experienced

statistically significant cuts in 2009. The stimulus funding appears to have forestalled some of the cuts; we see fewer significant downward shifts in 2010, with only transportation and utilities being negatively affected. Transportation and utilities appear to be the most affected categories—they have statistically significant negative shifts in all four years and experience the deepest cuts in each year. Instructional expenditure is the least affected, but it still had significant negative shifts in three of the four years we examine. The only year in which there is not a downward shift is 2010, the year of the stimulus. Thus, it appears that the stimulus prevented cuts in instructional expenditure. However, after the stimulus year the gap between its pre-recession trend and its actual levels returns and has grown over time. Instructional support and pupil services follow similar patterns, with a small negative shift in the year immediately after the recession hit, no significant shift in the stimulus year, and then large, statistically significant, negative shifts in 2011 and 2012. These patterns indicate a compositional shift in favor of the instructional category, which districts appear to have prioritized over other categories.

Looking at shifts in salaries and levels of experience, teacher salary increases statistically and economically significantly relative to the pre-recession trend. Why might median salaries rise while everything else, including instructional expenditure, is cut? One potential answer lies in the tenure system. In New Jersey, public school teachers receive tenure in their third year of employment.⁸ Under state education statutes, tenured teachers have very firm job protections and cannot be laid off easily. Therefore, if districts are facing budget crises and need to let teachers go, they are more likely to lay off less experienced, lower-paid teachers. This hypothesis is supported by the large and statistically significant positive shifts in teacher experience that coincide with the increases in salary.

5.2 Heterogeneities by Metropolitan Area

⁸ This was recently changed to the fourth year, but that change occurs after our period of observation, and is unlikely to change the general pattern we observe here.

In this section we analyze whether there were variations in how different metropolitan areas weathered the recession. The patterns for each metro area are obtained by aggregating the patterns of its component districts. All four metro areas that we consider—Camden, Edison, Newark, and Wayne—experienced significant negative shifts in funding in all four post-recession years. Camden, Edison, and Newark have a similar pattern of increasingly large negative shifts over time with similar magnitudes of shifts to each other. Wayne is slightly different in that its 2010 negative shift is smaller in magnitude than its 2009 shift and its 2011 and 2012 shifts are much smaller than those of the other three metropolitan areas.

All metro areas saw negative shifts in expenditure per pupil in all four years. Newark had the smallest negative shifts relative to the other three, but all four metro areas experienced similar trends—negative shifts in the first two years of approximately 10%, then jumping to larger negative shifts of 15-20% in the two later years.

Turning to the components of funding, Newark saw the largest bump from the stimulus in 2010 with a 21% upward shift in federal aid. All four areas had statistically insignificant shifts in 2011 and significant negative shifts (both statistically and economically) in 2012. But Edison and Wayne's 2012 downward shifts of more than 30% were much larger than Camden and Newark's, which were around 20%.

Turning to patterns in state aid, Wayne had the largest decreases in state aid in each year. Camden saw an improvement in state aid from 2010 to 2011 and 2012, although even in 2012 it was still 13% below trend. The other three metro areas experienced the largest negative shift from trend in 2011, with some improvement in 2012, mirroring the overall trend.

There is a great deal of variation between the metro areas in local funding. Camden, the highest poverty area among the metro areas we consider, saw the largest decreases in property taxes and local funding (a 13% downward shift in both in 2012), while Wayne did not experience any significant effects in any year. Wayne is a relatively wealthy area, which may explain why it was able to preserve local funding in the aftermath of recession. Edison also saw

large declines in local funding, particularly in 2012, while Newark saw relatively small declines in 2009 and 2012, but not in 2010 or 2011. In all cases, local funding tracks pretty closely with property tax revenue, as we would expect. Note that while local funding fell, the percent of funding from local sources increased, which we interpret simply as local funding falling less than federal and state funding. With state funding exhibiting large negative shifts every year, the percent of funding from federal aid shifted up in 2011 even though the actual amount experienced no statistically significant change from the pre-recession trend.

Next we examine whether expenditures in the various component categories showed variations across the metro areas. Although the magnitudes are different, the patterns over time are similar across metro areas in instructional expenditure, transportation, and utilities. Camden clearly experienced harshest cuts to instructional expenditure, the category considered the most crucial component for student learning. Some metropolitan areas were actually able to increase spending in some categories in the stimulus years. Edison and Newark had statistically significant positive shifts in 2010. Edison also had positive shifts in instruction, instructional support, and student activities although they were not statistically significant. However, *after 2010, no metro area had positive shifts, and in 2012 every metro area had a statistically significant negative shift in every expenditure category.*

Earlier we discussed the surprising increase in median teacher salary during the recession; this same pattern plays out in each of the metropolitan areas, with salaries and experience both increasing. Camden is the outlier among the four metro areas here, with smaller increases in salary and experience—Camden’s shifts in 2011 are half of the other three metro areas (around 5% versus 10% for salary and 15% versus 30% for experience). It appears that Camden may just have taken a little more time to change its personnel policies; in 2013 Camden announced it would be laying off around 100 teachers.⁹

⁹ http://www.nj.com/camden/index.ssf/2013/05/camden_schools_to_layoff_more.html

To summarize, school districts in the Camden and Edison metropolitan areas experienced greater impacts from the recession than those in Newark and Wayne. Camden had the deepest cuts to instructional expenditure. Although there is a fair amount of variation across the metro areas, they all were badly hit by the recession, as evidenced by the fact that in 2012 every one of them had statistically significant downward shifts (from the pre-recession trend) in all of their expenditure categories.

6 Conclusion

In this paper we have explored how New Jersey school finances were affected by the Great Recession, what role the stimulus played, and how schools are faring five years after the housing bubble burst. Using a rich panel dataset on a variety of school finance indicators we conducted a trend shift analysis to assess the school finance patterns in the aftermath of the Great Recession.

Our analysis uncovered some interesting findings. New Jersey school districts' funding and expenditure showed sharp cuts after the recession and have not recovered in the years after. Instead, the gap between the pre-recession trend and the actual reality has grown over time. The stimulus was successful as a stop-gap, but after the funds were depleted school districts were faced with a major budget crunch because the local economy had not yet recovered.

The analysis of expenditure components showed that initially non-instructional categories were cut to lessen the blow to instructional categories. However, as time wore on and the budgets were still tight, instructional spending fell significantly. Instructional spending recovered in 2010 with stimulus funding, *but in 2011 and 2012 instructional spending fell sharply across the board.*

By looking at districts' median teacher salaries and experience levels, we are able to see a pattern of growth in median teacher salaries and experience, suggesting that the districts resorted to laying off the less senior (or untenured) teachers. For instance, in Bridgewater-Raritan

Regional School District (in the Edison metro area), all 225 non-tenured teachers received non-renewal notices in 2010. Half of Newark's 942 non-tenured teachers were laid off.¹⁰

When we separately examine the effects for four large metropolitan areas in New Jersey, we see some common ground and some divergence in how their districts experienced the recession. Wayne was able to maintain local funding at trend, while the rest saw drops in local funding. Newark saw the largest increase in federal funding from the stimulus in 2010. Camden experienced the largest cuts to instructional expenditure. While there was some variation in the first year or two in what expenditure categories were preserved, *by 2012 all expenditure categories were down for all four metropolitan areas*. The worst hit in terms of both overall funding and expenditure was Camden, followed by Edison.

While we do not know yet what effect these spending cuts will have on educational outcomes, it is clear that districts are facing many hardships and difficulties in supporting their activities and operation. Cuts to instruction, student activities, and social services can potentially affect students in harmful ways. The federal stimulus temporarily prevented serious cuts, but now that the stimulus is over those cuts are taking place. The economy is recovering and there are encouraging signs on the horizon. As economic conditions improve, school finance conditions (both funding and spending) are expected to ease. It remains to be seen how long this return will take. Meanwhile, such sharp declines in funding in the last couple of years leading to spending cuts in key spending categories (like instruction, student services and student activities) may have important implications for student outcomes. This is an important area of future research that promises to further our understanding of recessions (and fiscal duress in general) on schools and students.

¹⁰ http://www.nj.com/news/index.ssf/2010/05/hundreds_of_pink_slips_to_be_s.html

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Table 1: Components of Expenditure

<p style="text-align: center;"><u>Instruction</u></p> <p>Instructional Expenditures All expenditure associated with direct classroom instruction. Teacher Salaries and benefits; classroom supplies; instructional training.</p> <p style="text-align: center;"><u>Non-Instruction</u></p> <p>Instructional Support All support service expenditures designed to assess and improve students' well-being. Food services, educational television, library, and computer costs.</p> <p>Student Services Psychological, social work, guidance, and health services.</p> <p>Utilities and Maintenance Heating, lighting, water, and sewage; operation and maintenance.</p> <p>Transportation Total expenditure on student transportation services.</p> <p>Student Activities Extra-curricular activities: physical education, publications, clubs, and band.</p>
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Table 2: Examining Patterns in Funding and Expenditures After the Recession

	Total Funding Per Pupil	Total Expenditure Per Pupil	Federal Aid Per Pupil	State Aid Per Pupil	Property Tax Revenue Per Pupil	Local Funding Per Pupil	% Federal Aid	% State Aid	% Local Funding
% Shift 2008-09	-12.93***	-9.87***	-17.54***	-4.37***	-2.83***	-3.33***	-10.79***	4.05***	7.61***
% Shift 2009-10	-13.00***	-9.07***	13.07***	-19.03***	-1.72***	-2.55***	20.76***	-10.75***	7.84***
% Shift 2010-11	-18.87***	-15.72***	-2.50	-20.89***	-1.99***	-2.84***	9.48***	-7.49***	13.50***
% Shift 2011-12	-20.84***	-16.01***	-28.00***	-15.52***	-5.74***	-6.67***	-15.89***	-0.34	10.69***
Pre-Recession Base	24596.06	21156.82	592.16	6520.96	11630.43	12097.10	2.41	27.81	51.32
Trend	726.29*** (65.48)	592.35*** (39.26)	16.49*** (3.23)	125.75*** (12.88)	344.20*** (19.59)	366.58*** (19.59)	0.02 (0.01)	-0.26*** (0.05)	0.12 (0.09)
2009	-3179.28*** (336.38)	-2089.20*** (166.00)	-103.87*** (15.77)	-285.02*** (40.68)	-329.61*** (42.51)	-403.10*** (46.72)	-0.26*** (0.05)	1.13*** (0.24)	3.91*** (0.49)
2010	-3197.14*** (421.77)	-1918.98*** (220.34)	77.39*** (13.01)	-1241.08*** (67.70)	-200.15*** (66.32)	-308.74*** (71.93)	0.50*** (0.06)	-2.99*** (0.31)	4.02*** (0.63)
2011	-4641.51*** (487.59)	-3325.95*** (242.77)	-14.81 (17.36)	-1361.93*** (71.20)	-231.07*** (88.27)	-343.98*** (88.52)	0.23*** (0.07)	-2.08*** (0.34)	6.93*** (0.72)
2012	-5126.99*** (547.53)	-3387.60*** (284.95)	-165.80*** (19.76)	-1011.84*** (87.47)	-668.05*** (109.05)	-806.32*** (109.62)	-0.38*** (0.07)	-0.09 (0.39)	5.49*** (0.79)
Observations	7881	7881	7881	7881	7581	7881	7889	7889	7889
R-squared	0.51	0.58	0.83	0.94	0.89	0.88	0.80	0.93	0.80

Notes: *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively. Robust standard errors adjusted for clustering by school district are in parentheses. All regressions control for racial composition and percent of students eligible for free or reduced price lunch.

Table 3: Examining Patterns in Expenditure Components After the Recession

	Instructional Exp Per Pupil	Instructional Support Per Pupil	Student Services Per Pupil	Transportation Per Pupil	Student Activities Per Pupil	Utilities Per Pupil	Teacher Salary	Teacher Experience
% Shift 2008-09	-2.24***	-2.11***	-2.02***	-3.62***	0.68	-2.42***	1.31***	8.85***
% Shift 2009-10	0.04	-0.78	0.95	-6.05***	1.00	-4.56***	6.46***	15.98***
% Shift 2010-11	-5.23***	-7.45***	-5.92***	-16.13***	-9.53***	-10.60***	8.32***	25.01***
% Shift 2011-12	-6.85***	-8.94***	-9.45***	-18.74***	-8.87***	-15.34***		
Pre-Recession Base	8164.03	2001.50	1675.93	800.25	249.31	1693.66	60385.91	10.13
Trend	173.16*** (10.62)	71.41*** (4.24)	61.79*** (3.39)	18.28*** (2.23)	5.34*** (0.57)	51.83*** (3.05)	-420.88*** (74.75)	-0.42*** (0.04)
2009	-182.67*** (30.43)	-42.30*** (14.08)	-33.79*** (11.78)	-28.98*** (7.55)	1.70 (1.75)	-41.01*** (10.02)	791.11*** (199.61)	0.90*** (0.09)
2010	2.91 (42.83)	-15.68 (25.85)	15.99 (18.63)	-48.44*** (10.39)	2.49 (2.59)	-77.26*** (12.99)	3902.20*** (276.25)	1.62*** (0.12)
2011	-426.68*** (52.53)	-149.05*** (25.58)	-99.16*** (19.71)	-129.11*** (12.52)	-23.76*** (3.66)	-179.48*** (17.21)	5023.81*** (350.66)	2.53*** (0.15)
2012	-558.96*** (64.13)	-178.84*** (31.05)	-158.35*** (24.06)	-149.99*** (14.59)	-22.12*** (4.40)	-259.87*** (22.05)		
Observations	7880	7880	7880	7872	7813	7880	6179	6179
R-squared	0.64	0.71	0.74	0.82	0.96	0.72	0.81	0.69

Notes: *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively. Robust standard errors adjusted for clustering by school district are in parentheses. All regressions control for racial composition and percent of students eligible for free or reduced price lunch.

Table 4: Examining Heterogeneities in Funding and Expenditure by Metropolitan Area

Panel A	Total Funding Per Pupil				Total Expenditure Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	-12.49***	-16.71***	-14.50***	-15.25***	-11.76***	-10.78***	-8.50***	-11.83***
% Shift 2009-10	-13.72***	-18.02***	-16.82***	-12.88***	-10.15***	-10.46***	-9.23***	-11.63***
% Shift 2010-11	-21.46***	-24.92***	-22.99***	-16.71***	-17.53***	-18.32***	-15.78***	-17.17***
% Shift 2011-12	-26.05***	-26.71***	-24.00***	-18.20***	-21.77***	-18.96***	-15.54***	-15.25***
Pre-Recession Base	24371.49	25458.89	24292.09	23589.23	20053.61	21661.14	21149.56	21153.69
R-squared	0.52	0.39	0.49	0.63	0.56	0.42	0.61	0.77
Panel B	Federal Aid Per Pupil				State Aid Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	-14.38**	-20.87***	-13.77***	-19.70***	-0.89	-5.29***	-5.41***	-8.46***
% Shift 2009-10	14.97***	17.64***	21.21***	14.58***	-18.11***	-18.86***	-16.01***	-24.09***
% Shift 2010-11	8.74	-3.70	0.98	-2.52	-14.56***	-22.79***	-23.42***	-33.06***
% Shift 2011-12	-18.60**	-29.29***	-21.17***	-31.96***	-13.23***	-15.42***	-14.45***	-25.91***
Pre-Recession Base	725.83	519.19	460.57	534.88	8537.93	5858.69	5323.06	4934.68
R-squared	0.85	0.72	0.87	0.83	0.92	0.88	0.96	0.97
Panel C	Property Tax Revenue Per Pupil				Local Funding Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	-6.41***	-2.79***	-1.94***	-1.11	-6.76***	-3.39***	-2.41***	-1.39
% Shift 2009-10	-6.98***	-2.80**	-0.17	0.46	-7.89***	-3.46**	-0.46	-0.22
% Shift 2010-11	-7.14***	-3.32**	0.24	1.77	-7.36***	-4.22**	-0.45	0.79
% Shift 2011-12	-13.64***	-7.30***	-2.32	-1.42	-13.44***	-8.24***	-3.00*	-2.76
Pre-Recession Base	8785.14	12396.63	12654.34	13295.00	9274.59	13125.60	13016.14	13843.99
R-squared	0.92	0.71	0.93	0.96	0.92	0.69	0.91	0.94
Panel D	% Federal Aid				% State Funding			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	-3.85	-12.81**	-5.76	-12.07***	7.94***	5.12***	3.48	-0.48
% Shift 2009-10	27.16***	28.22***	30.84***	23.86***	-8.94***	-8.22***	-7.58***	-14.87***
% Shift 2010-11	24.39***	14.78**	15.73***	11.62**	0.82	-6.62**	-9.35***	-19.59***
% Shift 2011-12	2.46	-13.03	-10.83**	-19.02***	6.41*	1.48	-1.02	-11.61***
Pre-Recession Base	2.77	2.15	1.97	2.23	36.79	24.22	23.14	21.45
R-squared	0.74	0.79	0.83	0.85	0.83	0.94	0.94	0.96
Panel E	% Local Funding							
	Camden	Edison	Newark	Wayne				
% Shift 2008-09	3.64	10.01***	8.95***	11.58***				
% Shift 2009-10	1.66	10.12***	11.94***	11.43***				
% Shift 2010-11	7.82**	16.38***	17.64***	17.26***				
% Shift 2011-12	4.26	13.52***	15.48***	15.19***				
Pre-Recession Base	42.05	54.03	56.16	60.04				
R-squared	0.78	0.74	0.71	0.77				
Observations	1460	1667	1878	1474				

Notes: *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively. All regressions control for racial composition and percent of students eligible for free or reduced price lunch.

Table 5: Examining Heterogeneities in Expenditure Components by Metropolitan Area

	Instructional Exp Per Pupil				Instructional Support Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	-2.69***	-1.78*	-2.65***	-0.96	-2.37	0.64	-1.75	-3.47**
% Shift 2009-10	0.26	1.03	-0.11	0.63	-2.43	3.66	0.57	-4.26
% Shift 2010-11	-6.66***	-4.78***	-4.91***	-3.35**	-11.28***	-3.05	-7.34***	-6.82***
% Shift 2011-12	-8.87***	-6.06***	-6.61***	-4.87***	-14.84***	-5.88*	-8.16***	-8.32**
Pre-Recession Base	7667.96	8159.60	8359.95	8242.63	1842.25	1958.49	2094.71	2129.16
Observations	1457	1666	1875	1473	1457	1666	1875	1473
R-squared	0.78	0.38	0.75	0.83	0.75	0.54	0.76	0.80
	Pupil Services Per Pupil				Transportation Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	-3.54**	1.05	-1.50	-3.05*	-6.47***	-5.34***	-1.30	-3.41
% Shift 2009-10	-2.68	4.83*	2.80*	-0.63	-9.31***	-8.78***	-4.60*	-4.89
% Shift 2010-11	-10.81***	-2.16	-5.53**	-5.38**	-18.14***	-17.19***	-13.07***	-17.30***
% Shift 2011-12	-16.84***	-8.01**	-7.50**	-8.93**	-21.04***	-21.59***	-14.06***	-20.54***
Pre-Recession Base	1534.39	1670.95	1774.23	1756.88	760.72	850.61	862.00	641.93
Observations	1457	1666	1875	1473	1457	1666	1867	1473
R-squared	0.77	0.60	0.77	0.83	0.88	0.78	0.91	0.72
	Student Activities Per Pupil				Utilities Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	1.04	-0.72	-0.10	3.04**	-2.19*	-0.33	-2.76***	-2.12
% Shift 2009-10	0.15	1.28	1.00	0.82	-4.45***	-2.80	-5.63***	-4.25***
% Shift 2010-11	-11.54***	-9.14***	-10.49***	-9.16***	-12.09***	-8.23***	-10.86***	-10.83***
% Shift 2011-12	-13.41***	-7.90**	-9.13**	-9.43***	-17.63***	-14.99***	-12.97***	-15.96***
Pre-Recession Base	233.76	264.86	276.36	282.27	1614.45	1739.01	1693.95	1693.82
Observations	1434	1654	1865	1472	1457	1666	1875	1473
R-squared	0.96	0.94	0.96	0.97	0.83	0.50	0.80	0.88
	Teacher Salary				Teacher Experience			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
% Shift 2008-09	0.02	1.88**	1.85***	2.86***	3.64	11.74***	12.46***	13.63***
% Shift 2009-10	4.27***	7.65***	7.71***	9.47***	6.94**	22.13***	21.88***	25.20***
% Shift 2010-11	5.03***	10.43***	9.54***	11.98***	14.86***	34.12***	31.80***	35.32***
Pre-Recession Base	58855.78	58082.16	61343.26	63457.26	11.05	9.34	9.59	9.15
Observations	1145	1302	1470	1154	1145	1302	1470	1154
R-squared	0.79	0.77	0.81	0.80	0.69	0.67	0.68	0.66

Notes: *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively. All regressions control for racial composition and percent of students eligible for free or reduced price lunch.

**Table A1: Examining Heterogeneities in Funding and Expenditure by Metropolitan Area
(Coefficients from Regressions Using Specification 1)**

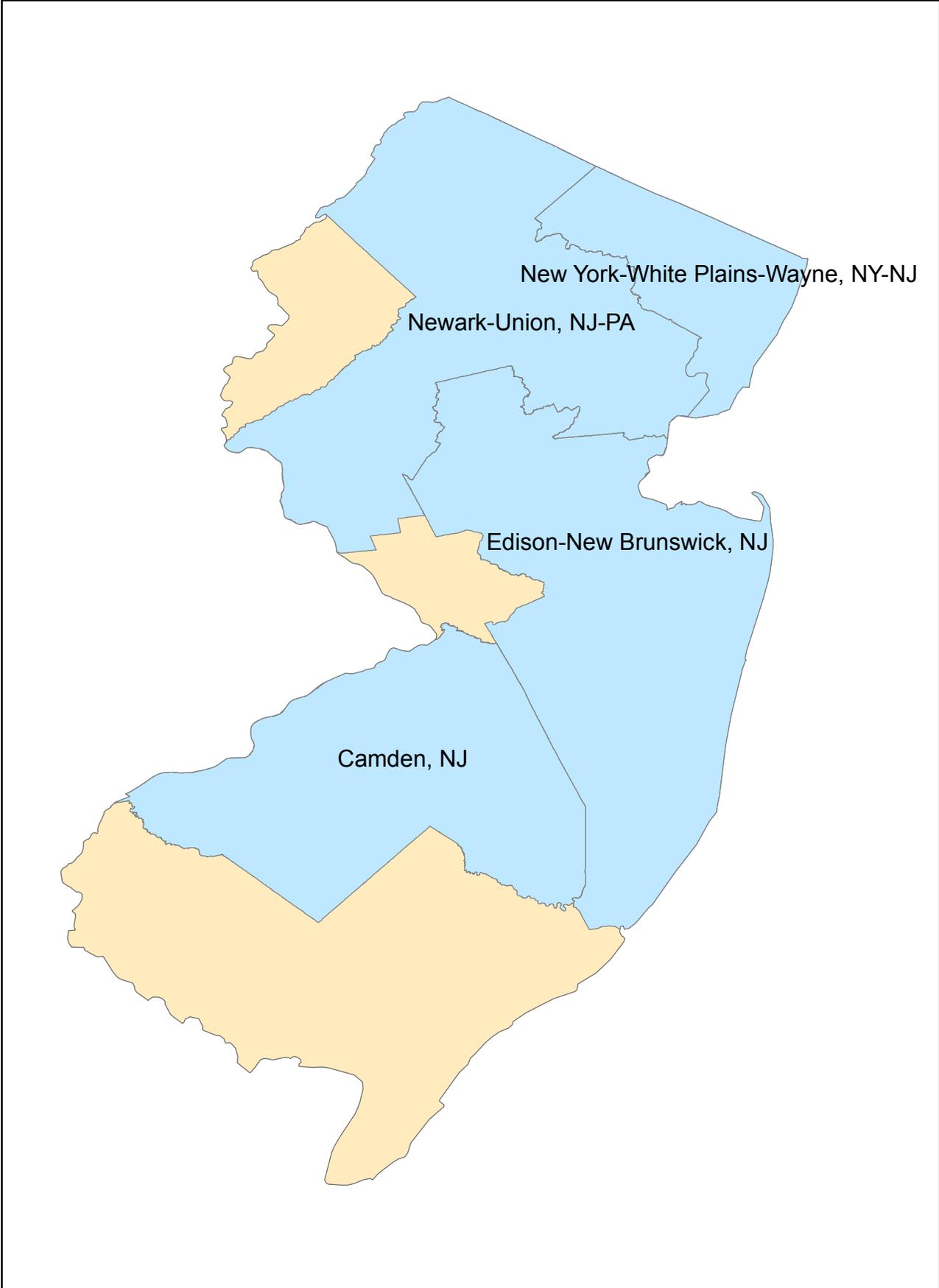
	Total Funding Per Pupil				Total Expenditure Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
2009	-3043.85*** (886.24)	-4255.04*** (692.47)	-3522.63*** (716.31)	-3598.32*** (792.16)	-2358.62*** (425.35)	-2335.47*** (363.68)	-1797.11*** (352.17)	-2502.46*** (342.45)
2010	-3344.75*** (941.06)	-4587.12*** (966.10)	-4086.32*** (856.99)	-3037.93*** (1019.31)	-2035.61*** (590.96)	-2265.51*** (506.68)	-1952.28*** (380.51)	-2460.55*** (411.39)
2011	-5230.69*** (1152.55)	-6345.41*** (1096.13)	-5585.48*** (1002.25)	-3942.32*** (1297.94)	-3514.61*** (568.62)	-3969.14*** (526.42)	-3337.27*** (485.82)	-3631.46*** (476.09)
2012	-6349.69*** (1496.83)	-6799.64*** (1236.46)	-5830.61*** (1149.87)	-4293.97*** (1351.85)	-4365.55*** (718.06)	-4106.65*** (626.21)	-3286.46*** (538.52)	-3226.77*** (642.95)
Observations	1457	1666	1876	1473	1457	1666	1876	1473
	Federal Aid Per Pupil				State Aid Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
2009	-104.38** (49.77)	-108.37*** (24.41)	-63.42*** (13.65)	-105.36*** (17.78)	-75.79 (102.53)	-310.05*** (72.43)	-288.19*** (65.69)	-417.63*** (85.15)
2010	108.69*** (29.99)	91.58*** (23.57)	97.67*** (20.83)	77.98*** (25.67)	-1546.42*** (192.61)	-1104.75*** (109.63)	-852.00*** (103.25)	-1188.80*** (159.29)
2011	63.46 (62.98)	-19.20 (28.50)	4.49 (17.84)	-13.49 (34.79)	-1242.79*** (250.62)	-1335.41*** (116.98)	-1246.77*** (112.66)	-1631.21*** (139.44)
2012	-135.00** (52.23)	-152.07*** (40.37)	-97.50*** (19.24)	-170.96*** (37.65)	-1129.72*** (334.42)	-903.69*** (171.79)	-769.06*** (130.60)	-1278.38*** (161.91)
Observations	1457	1666	1876	1473	1457	1666	1876	1473
	Property Tax Revenue Per Pupil				Local Funding Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
2009	-562.84*** (74.86)	-345.81*** (106.97)	-245.01*** (70.98)	-147.00 (110.06)	-626.57*** (76.69)	-445.14*** (114.03)	-313.66*** (87.41)	-192.94 (128.34)
2010	-613.60*** (109.68)	-347.32** (150.42)	-20.90 (110.99)	61.56 (161.79)	-732.17*** (128.45)	-453.95** (178.38)	-59.43 (127.70)	-30.87 (183.64)
2011	-627.26*** (187.76)	-411.47** (199.45)	30.98 (145.69)	234.92 (204.51)	-682.82*** (182.70)	-553.33** (217.30)	-58.99 (152.98)	109.98 (213.38)
2012	-1198.36*** (247.54)	-905.03*** (247.46)	-293.39 (186.30)	-189.42 (224.16)	-1246.63*** (239.96)	-1081.84*** (270.37)	-390.93* (205.04)	-381.98 (242.55)
Observations	1414	1609	1804	1428	1457	1666	1876	1473
	% Federal Aid				% State Aid			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
2009	-0.11 (0.11)	-0.28** (0.12)	-0.11 (0.07)	-0.27*** (0.07)	2.92*** (0.75)	1.24*** (0.37)	0.81 (0.55)	-0.10 (0.34)
2010	0.75*** (0.14)	0.61*** (0.13)	0.61*** (0.09)	0.53*** (0.08)	-3.29*** (0.99)	-1.99*** (0.56)	-1.75*** (0.45)	-3.19*** (0.59)
2011	0.68*** (0.22)	0.32** (0.15)	0.31*** (0.09)	0.26** (0.12)	0.30 (1.10)	-1.60** (0.64)	-2.16*** (0.52)	-4.20*** (0.54)
2012	0.07 (0.22)	-0.28 (0.19)	-0.21** (0.09)	-0.43*** (0.13)	2.36* (1.26)	0.36 (0.74)	-0.24 (0.58)	-2.49*** (0.63)
Observations	1460	1667	1878	1474	1460	1667	1878	1474
	% Local Funding							
	Camden	Edison	Newark	Wayne				
2009	1.53 (0.97)	5.41*** (0.92)	5.03*** (1.11)	6.95*** (1.41)				
2010	0.70 (1.33)	5.47*** (1.26)	6.71*** (1.36)	6.86*** (1.79)				
2011	3.29** (1.42)	8.85*** (1.41)	9.91*** (1.60)	10.36*** (2.02)				
2012	1.79 (1.60)	7.30*** (1.62)	8.70*** (1.82)	9.12*** (2.17)				
Observations	1460	1667	1878	1474				

Notes: *, **, *** denote statistical significance at the 10, 5, and 1% level, respectively. Robust standard errors adjusted for clustering by school district are in parentheses. All regressions control for racial composition and percent of students eligible for free or reduced price lunch.

**Table A2: Examining Heterogeneities in Expenditure Components by Metropolitan Area
(Coefficients from Regressions Using Specification 1)**

	Instructional Exp Per Pupil				Instructional Support Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
Trend	181.96*** (26.50)	187.14*** (25.46)	159.70*** (17.38)	86.51*** (17.71)	72.14*** (10.79)	74.61*** (8.75)	71.82*** (7.22)	66.73*** (10.06)
2009	-206.10*** (63.99)	-145.40* (76.03)	-221.49*** (58.49)	-79.33 (69.95)	-43.61 (28.29)	12.52 (33.13)	-36.64 (26.22)	-73.83** (35.81)
2010	19.81 (74.15)	83.79 (118.03)	-9.40 (75.84)	51.77 (76.95)	-44.75 (41.28)	71.74 (53.79)	11.95 (35.77)	-90.73 (84.24)
2011	-510.54*** (99.12)	-390.24*** (125.67)	-410.23*** (107.51)	-275.95** (105.88)	-207.89*** (56.84)	-59.81 (58.58)	-153.76*** (50.00)	-145.25*** (54.51)
2012	-680.32*** (118.76)	-494.26*** (159.36)	-552.81*** (127.20)	-401.08*** (116.36)	-273.43*** (73.92)	-115.18* (62.27)	-170.95*** (63.56)	-177.18** (69.74)
Observations	1457	1666	1875	1473	1457	1666	1875	1473
R-squared	0.78	0.38	0.75	0.83	0.75	0.54	0.76	0.80
	Pupil Services Per Pupil				Transportation Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
Trend	61.14*** (7.60)	68.58*** (7.50)	60.55*** (6.30)	60.26*** (9.36)	25.09*** (4.93)	17.77*** (3.53)	12.95*** (4.21)	5.02 (7.99)
2009	-54.38** (26.20)	17.61 (27.05)	-26.53 (22.75)	-53.59* (30.76)	-49.19*** (13.04)	-45.44*** (15.49)	-11.18 (15.84)	-21.89 (21.53)
2010	-41.07 (36.82)	80.69* (47.23)	49.76* (29.11)	-10.99 (44.32)	-70.83*** (16.65)	-74.65*** (17.22)	-39.67* (22.22)	-31.36 (29.34)
2011	-165.93*** (42.74)	-36.06 (47.27)	-98.09** (42.04)	-94.55** (45.46)	-138.03*** (24.37)	-146.22*** (24.31)	-112.69*** (25.69)	-111.05*** (34.87)
2012	-258.33*** (54.46)	-133.79** (52.63)	-133.11** (51.79)	-156.85** (60.21)	-160.04*** (31.04)	-183.64*** (28.17)	-121.16*** (28.19)	-131.88*** (45.14)
Observations	1457	1666	1875	1473	1457	1666	1867	1473
R-squared	0.77	0.60	0.77	0.83	0.88	0.78	0.91	0.72
	Student Activities Per Pupil				Utilities Per Pupil			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
Trend	5.05*** (1.20)	6.83*** (1.49)	5.07*** (1.29)	4.75*** (1.27)	51.39*** (7.83)	59.76*** (6.22)	45.81*** (4.96)	33.51*** (5.56)
2009	2.42 (3.82)	-1.90 (4.30)	-0.27 (3.70)	8.57** (3.56)	-35.31* (18.04)	-5.75 (21.43)	-46.83*** (17.70)	-35.84 (23.77)
2010	0.36 (4.49)	3.38 (6.33)	2.76 (6.61)	2.31 (4.58)	-71.85*** (23.02)	-48.65 (31.86)	-95.37*** (20.05)	-71.98*** (27.10)
2011	-26.98*** (6.37)	-24.19*** (8.46)	-28.99*** (9.99)	-25.86*** (8.16)	-195.23*** (30.15)	-143.19*** (46.73)	-183.96*** (24.93)	-183.39*** (36.15)
2012	-31.35*** (7.19)	-20.93** (10.35)	-25.22** (12.00)	-26.63*** (9.78)	-284.69*** (42.22)	-260.60*** (67.23)	-219.77*** (31.48)	-270.40*** (40.57)
Observations	1434	1654	1865	1472	1457	1666	1875	1473
R-squared	0.96	0.94	0.96	0.97	0.83	0.50	0.80	0.88
	Teacher Salary				Teacher Experience			
	Camden	Edison	Newark	Wayne	Camden	Edison	Newark	Wayne
Trend	-116.06 (130.41)	-495.24*** (156.40)	-645.74*** (134.65)	-1116.73*** (179.90)	-0.32*** (0.08)	-0.48*** (0.07)	-0.49*** (0.06)	-0.70*** (0.10)
2009	10.98 (497.66)	1089.62** (446.93)	1137.13*** (378.43)	1817.83*** (479.36)	0.40 (0.24)	1.10*** (0.21)	1.19*** (0.16)	1.25*** (0.15)
2010	2514.41*** (635.98)	4443.10*** (587.74)	4727.27*** (434.74)	6008.44*** (741.92)	0.77** (0.34)	2.07*** (0.24)	2.10*** (0.22)	2.31*** (0.23)
2011	2961.68*** (788.80)	6058.15*** (756.60)	5850.86*** (634.89)	7600.32*** (884.78)	1.64*** (0.44)	3.19*** (0.30)	3.05*** (0.27)	3.23*** (0.29)
Observations	1145	1302	1470	1154	1145	1302	1470	1154
R-squared	0.79	0.77	0.81	0.80	0.69	0.67	0.68	0.66

Figure 1: New Jersey Metropolitan Divisions



Note: Included in our analysis and this map are the four largest New Jersey Metropolitan Divisions.

Figure 2: Trends in Funding and Expenditure

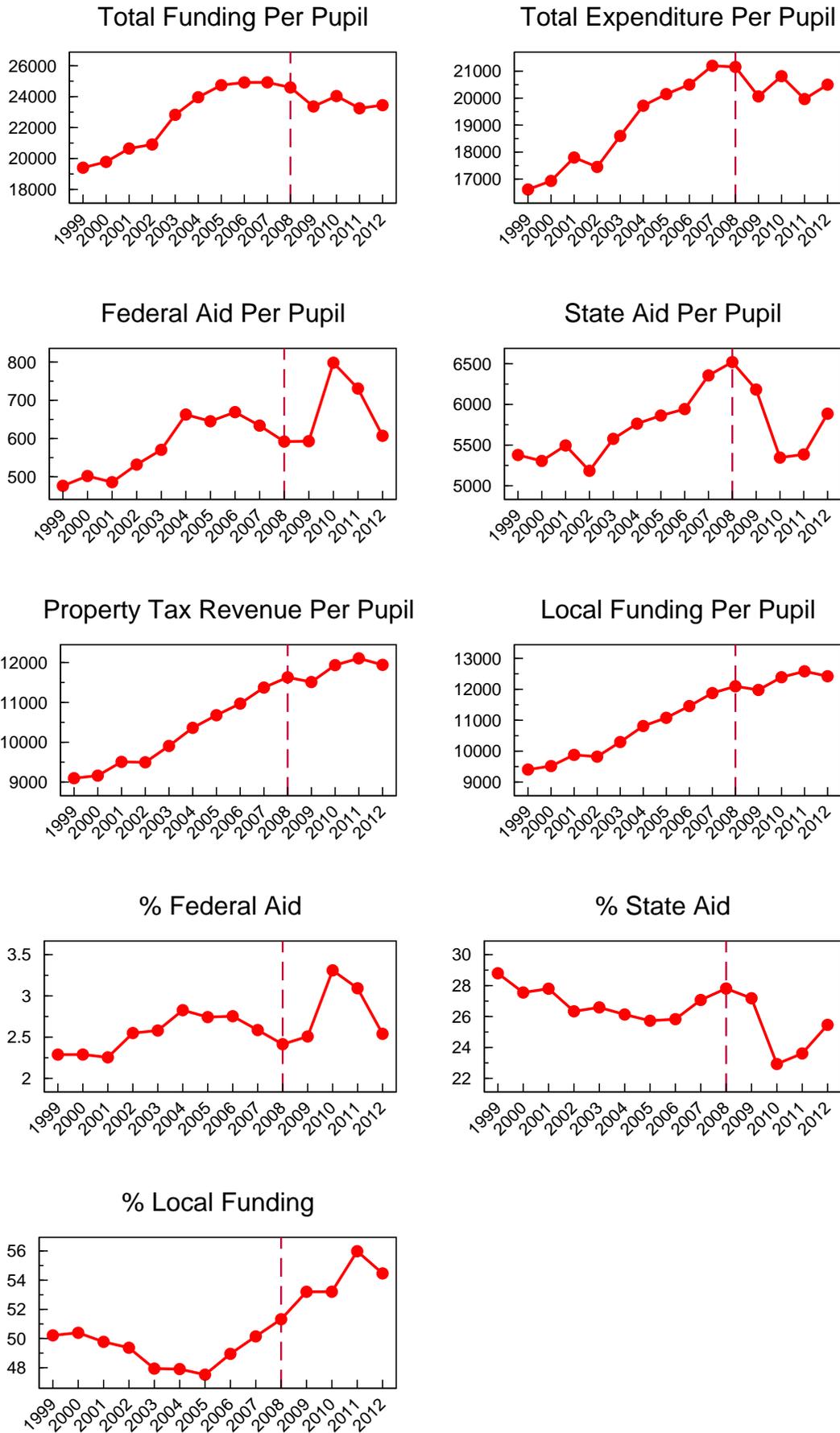


Figure 3: Trends in Expenditure Components

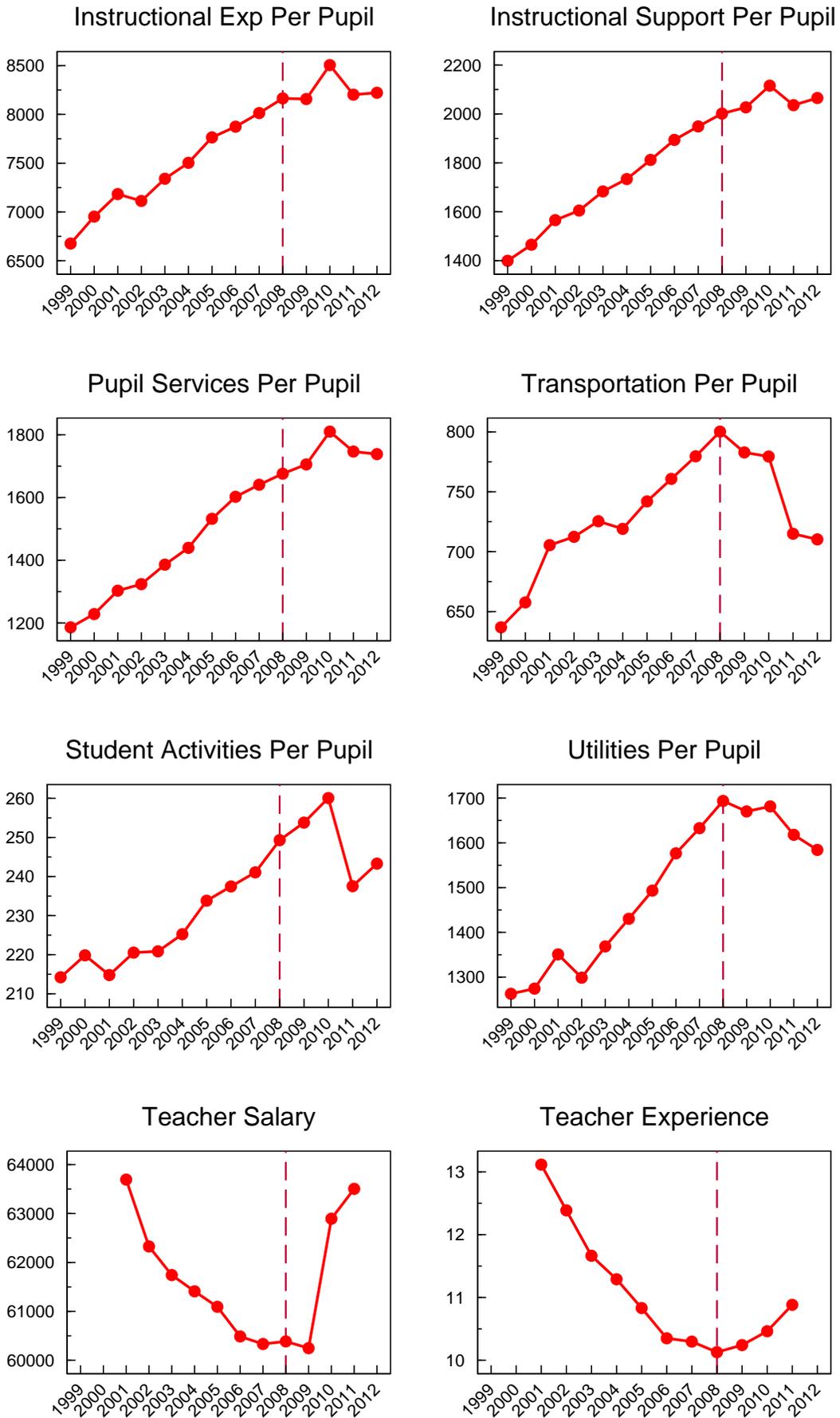
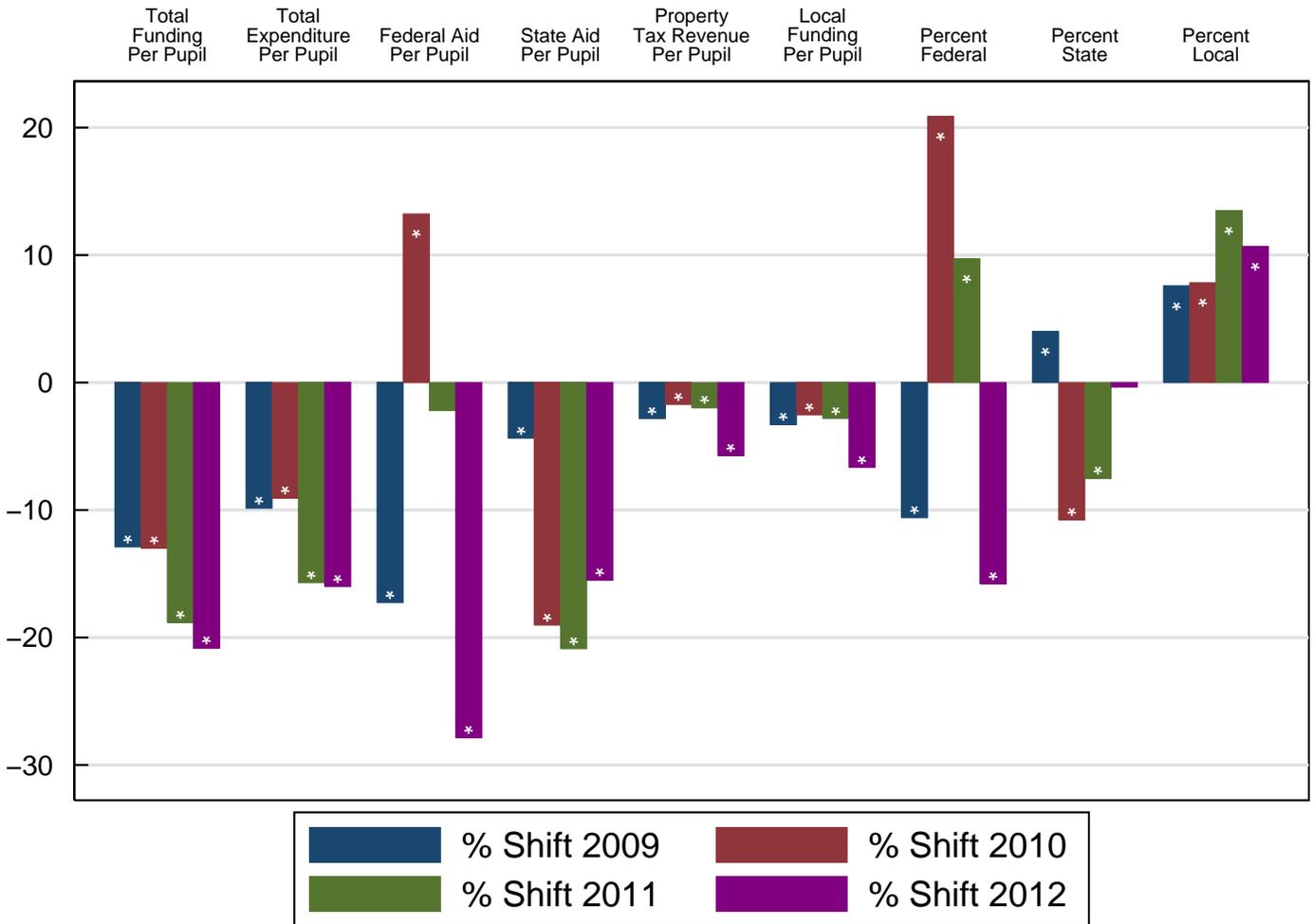
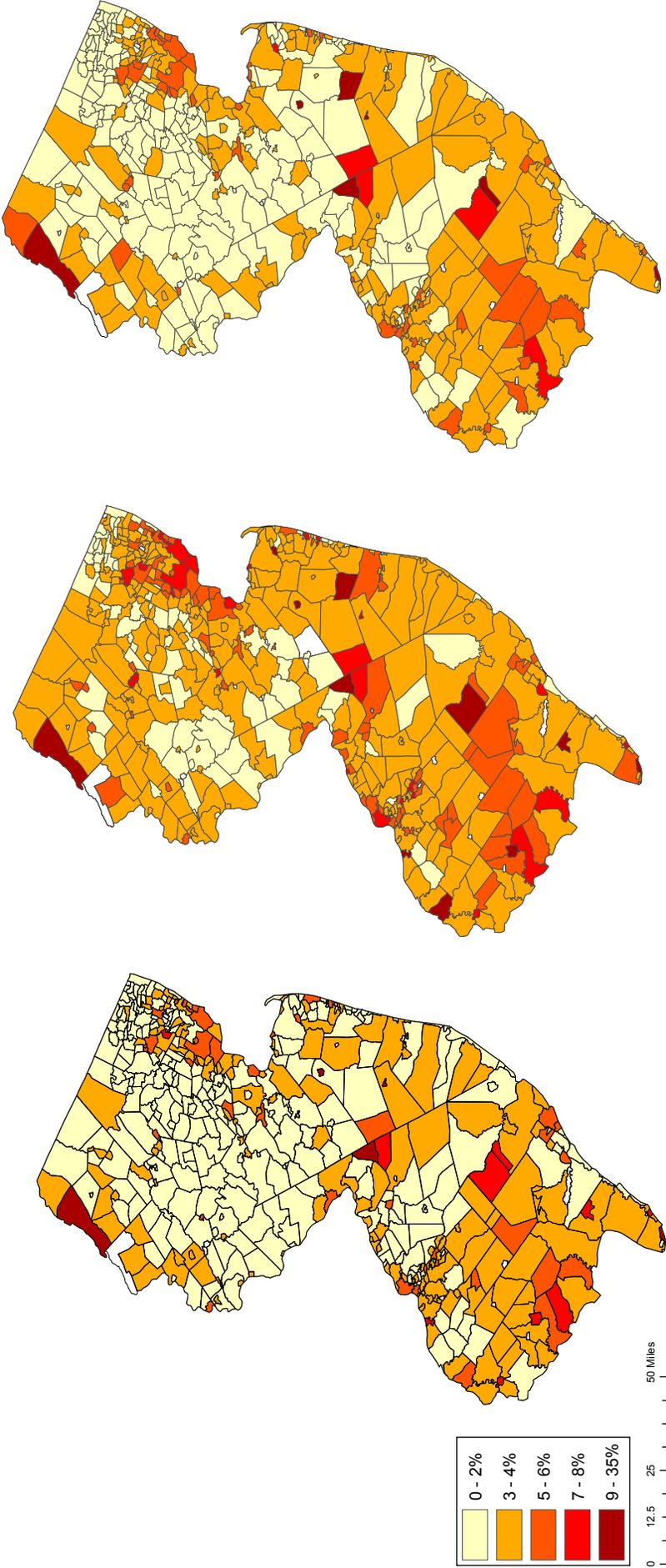


Figure 4: Examining Patterns in Funding and Expenditures
 (Using Shifts from the Pre-Recession Trend)



Note: Stars indicate statistical significance at the 10%, 5%, or 1% level.

Figure 5: Percent of District Funding from Federal Aid



(a) 2008

(b) 2010

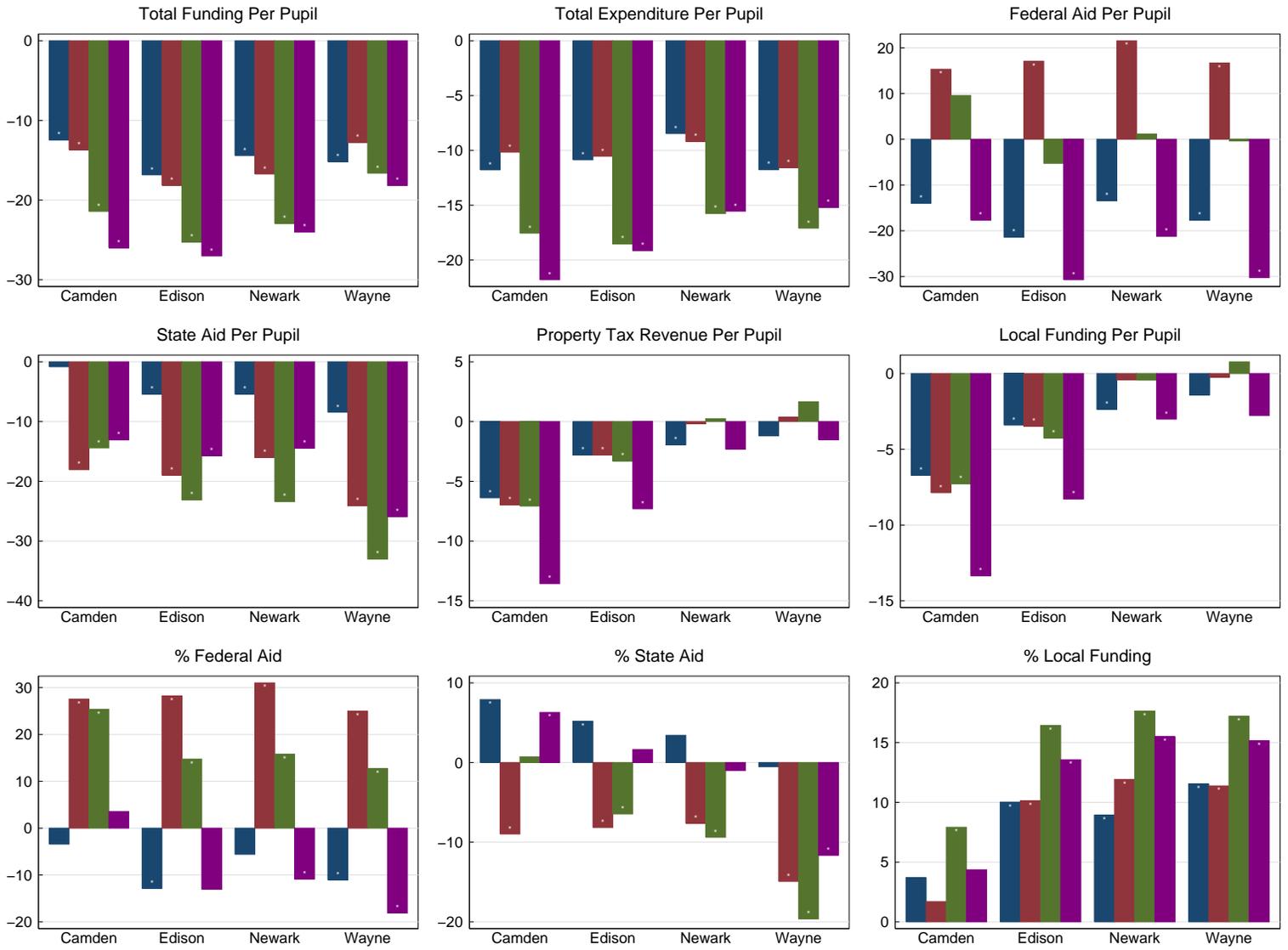
(c) 2012

Figure 6: Examining Patterns in Expenditure Components
 (Using Shifts from the Pre-Recession Trend)



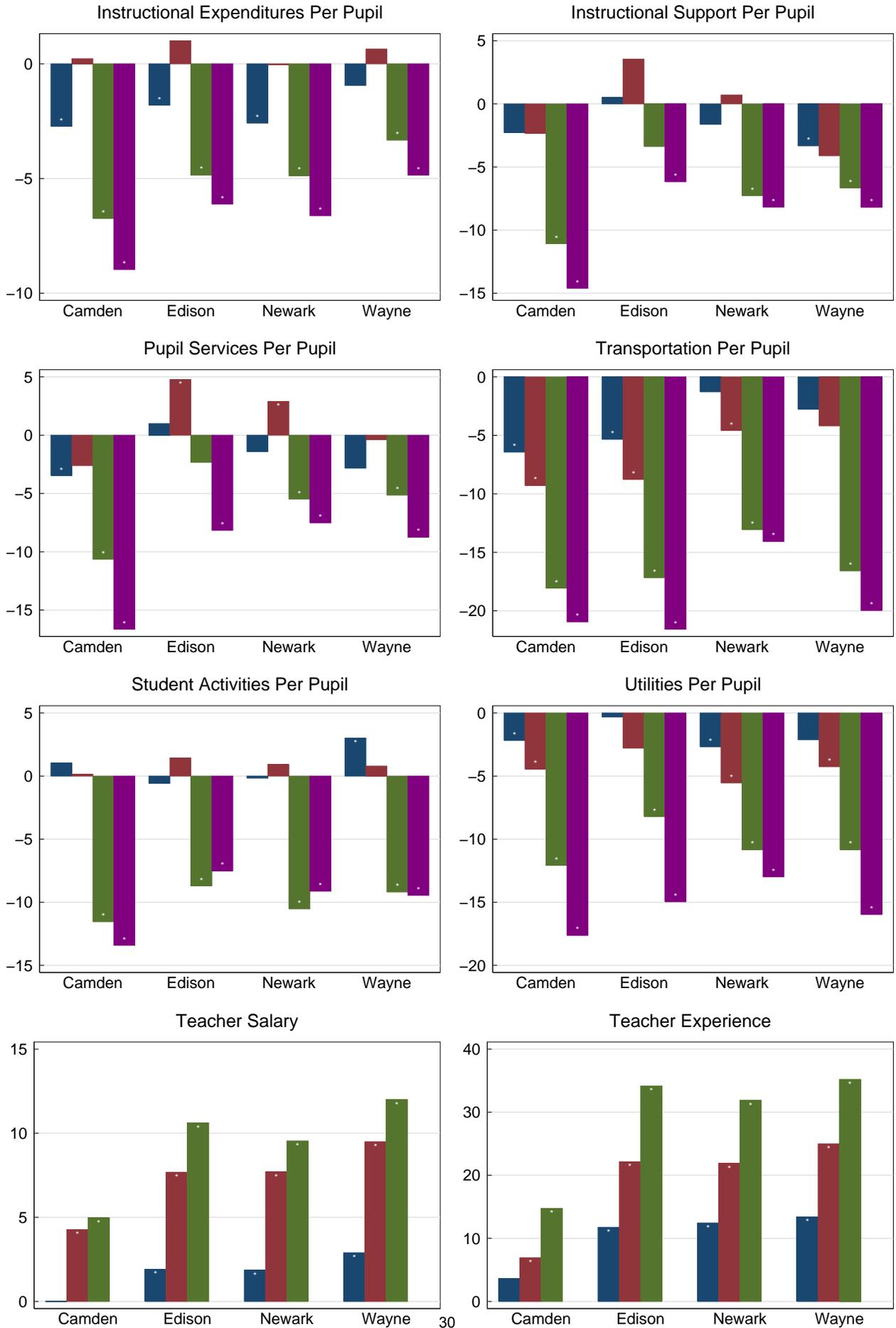
Note: Stars indicate statistical significance at the 10%, 5%, or 1% level.

Figure 7: Examining Heterogeneities in Funding and Expenditure by Metropolitan Area
 (Using Shifts from the Pre-Recession Trend)



Note: Stars indicate statistical significance at the 10%, 5%, or 1% level.

Figure 8: Examining Heterogeneities in Expenditure Components by Metropolitan Area (Using Shifts from the Pre-Recession Trend)



Note: Stars indicate statistical significance at the 10%, 5%, or 1% level.