



**STATE AND LOCAL GOVERNMENTS IN ECONOMIC RECOVERIES:
THIS RECOVERY IS DIFFERENT**

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ABSTRACT

Examining state and local finances in recent economic recoveries, we find that state and local government activity exhibited an unprecedented decline during the most recent recovery. Never before had state and local contribution to GDP been negative three years after a recession passed its low point. This decreased activity caused a contraction in state and local government payrolls. While many factors affect these trends, it is likely that the unusually low growth in property tax revenue heavily impacted this decline.

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Executive Summary

State and local governments are a critical part of the national economy. They provide education, maintain access to police and fire services, and help build and maintain national infrastructure, while providing still other valuable services. All told, state and local governments comprise around 12 percent of national economic activity, accounting for \$1.8 trillion of such activity in 2012. The size of state and local governments makes them an important actor in the economy, directly affecting economic cycles, either buffering recessions and aiding recoveries or acting as a drag as the private sector revives.

This brief examines state and local government finances in recent recoveries. The main finding is that, in stark contrast with prior economic recoveries, state and local government activity fell during this most recent recovery. The decline was unprecedented: never before had state and local contribution to GDP been negative three years after a recession had reached its low point. We also found:

- State and local government consumption and gross investment, which directly contributed toward GDP over the past five economic cycles, had grown by a cumulative 6 percent, on average, in the three years following a recession's trough. In contrast, state and local government consumption and gross investment fell by 4 percent over the period of the most recent recovery.
- Decreased consumption created a contraction in state and local government payroll. Historically, state and local government employment has grown by 3 percent, on average, three years after a recession's trough. In the recovery following the Great Recession, state and local government employment was instead 3 percent lower after three years.
- Local property tax collections historically have been robust during economic recoveries and typically rose steadily from each recession's trough. This time was different, with local tax revenues falling in the recovery after the Great Recession. Real property tax revenues averaged 10 percent cumulative growth three years from the recession's trough in prior recessions, but these declined by 1 percent three years after the Great Recession.

Introduction

This brief compares the economic contribution of state and local governments during the recovery from the Great Recession to prior economic recoveries. The chief conclusion is that, unlike in the past, the state and local government sector has dragged down the recovery rather than contributing to growth. Declines in state and local employment drove down the national labor market and contributed to higher levels of unemployment. These trends are likely caused in part by the extended duration of the recession and an atypical recovery in state and local revenue streams, especially the eventual decline in property tax revenues attributed to the steep decline in housing prices.

State and local activity during the recovery should be considered in the context of the Great Recession and its aftermath. Several aspects of this recession were unique. One, the recession was driven by an unprecedented housing crisis, with home values falling sharply nationwide. Two, the Great Recession was longer and deeper than any recession in the past four decades, lasting longer (as measured trough to peak) than any other modern recession. Three, quick federal action in the form of the 2009 American Recovery and Reinvestment Act (ARRA) transferred funding to the states, effectively mitigating the need for state and local governments to immediately respond to the economic downturn. ARRA transferred over \$40 billion to states for infrastructure and over \$200 billion to states for non-infrastructure spending. This large outlay postponed the impact of the recession on state and local budgets. However, ARRA funding was not enough to fully offset the recession's impact on subnational governments; state and local governments were eventually forced to respond to the recession.

This brief adds to a host of other valuable reports on this topic by examining the recession and recovery from a macroeconomic perspective and the trends in components of GDP. Other studies have identified the precipitous drop in state and local government activity during and after the Great Recession. Dadayan and Boyd (2013) find that the declines in state and local employment during this recession and the subsequent recovery are unprecedented; both state and local employment have fallen more in this recession, measured from the start of the downturn, than in any of the past four recessions. Follette and Lutz (2010) find that pro-cyclical

state and local government activity, likely attributable to state balanced-budget requirements, reduced GDP by 0.4 percent in 2009.

Other studies analyzed trends in state and local tax revenues. Dadayan (2012) finds that income and sales taxes fell sharply about one year after the start of the Great Recession in December 2007, while property taxes did not begin to decline until the fourth quarter of 2010. Similarly, Jonas (2012) finds that state revenues—primarily income and sales taxes—began to collapse in 2008, but local tax revenues (heavily reliant on property taxes) were still increasing through 2009.¹ In 2010, the situation reversed, with local taxes plummeting and state revenue beginning to rebound. Boyd (2011) attributes the marked decline in income tax receipts, which far exceeded the declines in economic growth and personal income, to the extraordinarily steep fall in capital gains realizations. Dadayan and Boyd (2012) show that, relative to prior downturns, sales tax revenues were hit harder during and after the Great Recession. Johnson, Collins, and Singham (2010) document the statutory tax changes legislated by states during the Great Recession, noting that 33 states raised taxes. Major state reform included higher tax rates, limiting deductions, and broadening the tax base (through reforms such as the inclusion of lottery winnings in taxable income and limiting capital gains exclusions).

State and local governments in the national economy

The size of government is often measured by the amount of money it spends. In 2012, for example, federal government outlays totaled \$3.9 trillion, including \$468 billion in grants to state and local governments. State and local governments spent \$2.3 trillion in 2012, financed in part by the funds transferred from the federal government. This measure of total spending covers various types of spending, including expenditures for consumption and investment, transfers to individuals and governments, and interest payments. Though measuring government activity by total expenditures is useful in many contexts, this brief evaluates state and local government contributions to the economy in a standard macroeconomic framework.

¹ The varied timing response by revenue streams to economic downturns is well documented. Sales taxes respond nearly instantaneously (in approximately one to two months) to changes in economic conditions. Income tax revenues, because they are collected the following year, often decline up to nine months after a recession begins, while property taxes respond with a longer lag. Relative to local governments, states tend to rely on income streams that react more rapidly to economic conditions, and thus show fiscal stress sooner than local governments (Jonas 2012).

In this framework, GDP is the sum of consumption, investment, net exports, and government activity.² Government spending is broadly classified as consumption, gross investment, interest payments, and transfers.³ Consumption and gross investment enter GDP directly, while other components of government spending only indirectly affect GDP (and enter through the actions of other sectors of the economy). For example, government transfers to households that are eventually spent are counted as non-government consumption.⁴ Thus, while federal government expenditures totaled \$3.9 trillion in 2012, only \$1.2 trillion directly counted towards GDP.

In this macroeconomic framework where only consumption and gross investment count towards economic activity, state and local governments have been a consistently large share of the economy over the past four decades, comprising about one-eighth of the economy. The share varies based on state and local policies, macroeconomic conditions, and the willingness of the federal government to provide grants-in-aid. State and local governments' share of GDP rose slowly from 11.6 percent in 1970, to 13.1 percent in 2009, before falling slightly to 11.8 percent in 2012 (chart 1).

By comparison, the direct federal share of the economy (as measured by consumption and gross investment) has fallen since 1970, although this share has risen over the past decade. In 1970, the federal share of GDP was roughly equal to the state and local share of GDP in that year (10.9 percent of GDP). By 2000, the federal share fell to 5.8 percent, before rising to 8.4 percent in 2010. In 2012, the federal share was 7.7 percent of GDP.⁵

² This accounting identity is typically denoted as $Y=C+I+NX+G$. In 2012, national income (Y) totaled \$15.7 trillion, including \$11.1 trillion due to consumption (C), \$2.1 trillion due to investment (I), $-\$0.6$ trillion due to net exports (NX), and \$3.1 trillion due to government (G).

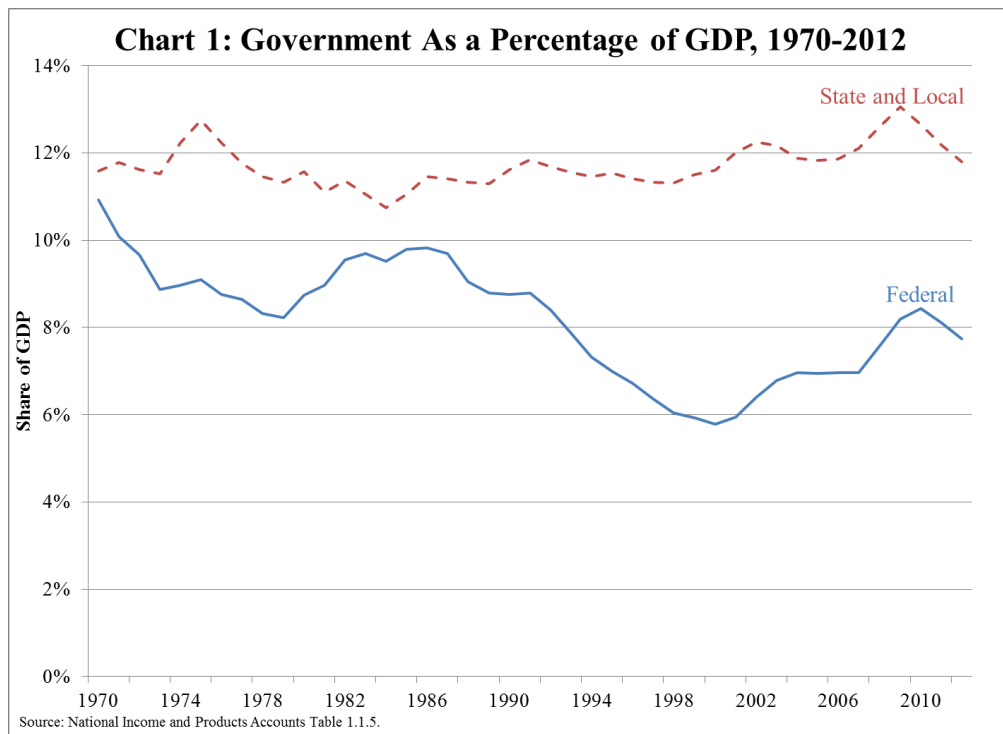
³ Federal government transfers include transfers to households and transfers to other governments (primarily state governments). In 2012, transfers to households totaled \$1.8 trillion, while grants-in-aid to state and local governments amounted to \$468 billion. In each case, transfers did not directly affect GDP, but were counted in GDP if the transferred funds were eventually consumed or invested.

⁴ The federal government can influence GDP growth indirectly by either increasing transfers or cutting taxes to households, or by transferring aid to state and local governments. The former strategy is complex and nuanced. For example, some research suggests that households initially used tax rebates to pay down debt and only began raising their consumption months later (Agarwal, Liu, and Souleles 2007), although economists have yet to reach a consensus on the connection between tax cuts and transfers and household consumption.

⁵ The trends in government contributions to GDP are largely due to the evolving role of the federal government. Over time, the share of federal government expenditures devoted to consumption and gross investment spending has waned as transfers comprise a larger and larger share of spending. Between 1970 and 2012, consumption and gross investment expenditures fell as a share of GDP from 10.9 percent to 7.8 percent, while other federal expenditures (mostly transfers) ballooned—rising as a share of the economy from 9.9 percent to 17.2 percent (appendix chart 1).

The gradual decline in federal consumption and investment is almost exclusively due to reduced defense spending.⁶ Between 1970 and 2011, federal non-defense consumption and investment has remained remarkably constant at between 2 and 3 percent of GDP in all years. In contrast, federal defense consumption and investment has declined over time, plummeting from 8.4 percent of GDP in 1970, to 3.7 percent of GDP in 2000, before rising to 5.2 percent of GDP today.

The changing role of the federal government means that state and local governments now comprise over half of total government consumption and investment. Over the past four decades, the share of total government consumption and investment undertaken by state and local governments has risen from 51.5 percent in 1970, to 60.0 percent in 2012.



State and local governments' role as public employer has increased over time with increased spending on consumption and investment. State employment has steadily increased

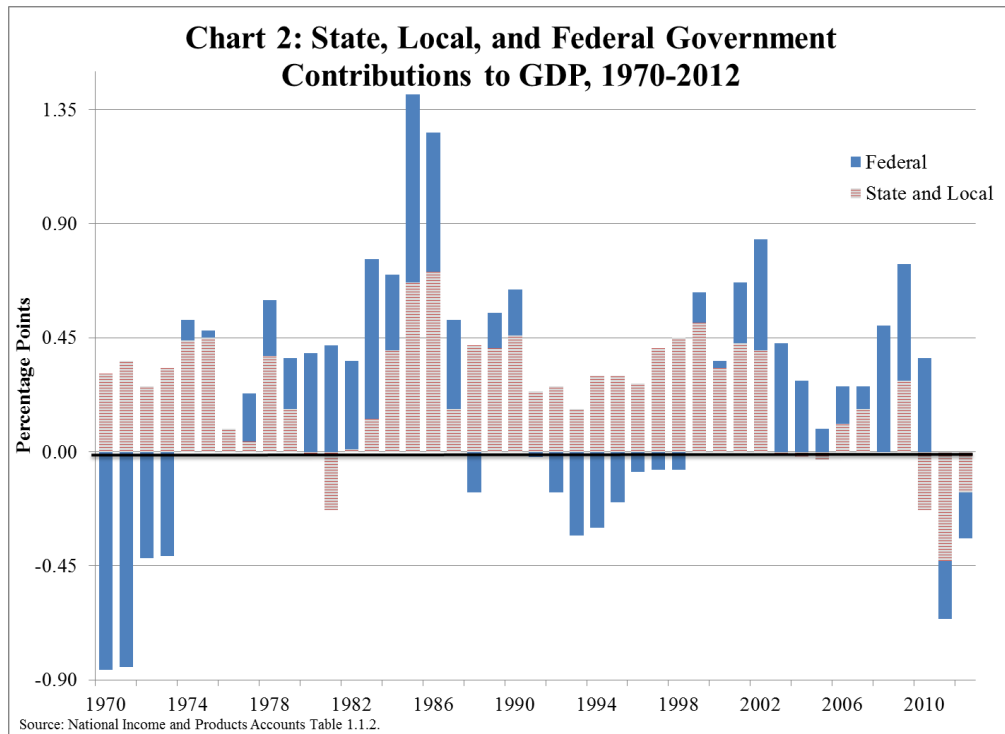
Today, expenditures other than consumption and gross investment dominate the federal budget. In contrast, the composition of state and local government spending has remained relatively constant (appendix chart 2).

⁶ The decline in defense spending over the past several decades has corresponded to a growth in health and other entitlement spending.

over the past four decades, rising from 2.6 million in 1970, to 5.0 million in 2012, while local government employment has roughly doubled from 7.0 million to 14.0 million over the same period. In contrast, federal employment has stayed remarkably constant in absolute terms at about 2.8 million from 1970, to 2012 (appendix chart 3). As a result, the share of public sector workers employed by subnational governments has risen from 77.1 percent in 1970 to 87.3 percent in 2012. Similarly, the share of the labor force employed by state and local governments has risen from 13.5 percent in 1970, to 14.2 percent in 2012, while the share of the labor force employed by the federal government has fallen from 4.0 percent to 2.1 percent over the same period.

State and local governments have steadily contributed directly to economic growth over the past four decades, while the federal government has been more volatile. State and local government contributions to GDP growth have been either positive or very slightly negative since 1970, with the exception of 1981 and the three years following the Great Recession (chart 2). In contrast, federal government spending on consumption and gross investment has contracted in 14 years since 1970. In the early 1970s and early 1990s, state and local contributions to GDP growth served to offset some or all of the negative contributions by the federal government. This is a somewhat surprising result given the presence of state balanced-budget rules, and is partially due to expanded federal grants to state and local governments during economic downturns. In the absence of federal aid to subnational governments, state and local consumption and gross investment (and by extension, contributions to GDP), would almost certainly be more volatile and pro-cyclical.⁷ Caveats aside, prior to the Great Recession, state and local governments have only been a drag on economic growth in one year during the last four decades. In stark contrast to historical experience, subnational governments contracted sharply during the first two years of this recovery.

⁷ The relationship between state spending and macroeconomic conditions is heavily influenced by state balanced-budget amendments, with states often cutting spending or raising taxes if faced with budget shortfalls from declining economic activity. With varying degrees of stringency, states are generally required to balance their operating budgets. This leaves little leverage for states to smooth consumption across the business cycle by borrowing; a tool used frequently by the federal government. As a result, cutting expenditures is a common strategy for states to address unexpected deficits, which could exacerbate recessions. Poterba (1994) finds that when faced with an unexpected deficit, states with weak balanced-budget rules cut expenditures significantly less than states with strong balanced-budget rules. However, in the most recent recessions, the federal government has increased aid to states to partially offset declines in state revenues.



This recovery is different: comparing the most recent recovery to past experiences

The United States has endured six recessions since 1970. Three were relatively short, lasting eight months or less. Recessions that began in 1990 and in 2001 each lasted exactly eight months, while the recession that began in 1980 lasted just six months (table 1). The other three recessions were more drawn-out, lasting at least 16 months. The recessions that began in 1973 and in 1981 each lasted 16 months, while the Great Recession—which began in 2007—lasted 18 months and was the longest economic contraction since the Great Depression.⁸

In all recoveries prior to the recovery from the Great Recession, state and local governments continued to boost consumption and gross investment while correspondingly raising employment. (In part, this may be due to a lag between the start of a recession and a downturn in revenues.) This activity directly contributed to economic growth and aided the recovery. As shown below, the most recent recession was dramatically different: consumption and gross investment fell, employment contracted, and revenues—especially property taxes—declined well into the recovery.

⁸ The length of the Great Recession may have affected the response by state and local governments. One possibility is that many state rainy-day funds are sufficient to smooth consumption over shorter recessions, but are inadequate to do the same during long-lasting recessions (McNichol and Boadi 2011).

Several factors likely played a role in the atypical response by subnational governments during the Great Recession. Much of this difference is likely driven by the depth and nature of the recession preceding the recovery. The steep drop in housing prices depressed property tax revenue, a principal source of revenue for local governments. This is explained in part by the disproportionate reliance on program cuts to close budget deficits during the Great Recession and the subsequent recovery. States relied heavily on budget cuts to balance their budgets: 45 percent of state budget gaps were closed by spending cuts, compared to just 24 percent from federal fiscal relief (provided mostly through ARRA), 16 percent from tax increases, 9 percent from rainy-day funds, and 7 percent from other measures (McNichol 2012). In addition, the current recovery was more sluggish than prior recoveries, leading to slower increases in state revenues.

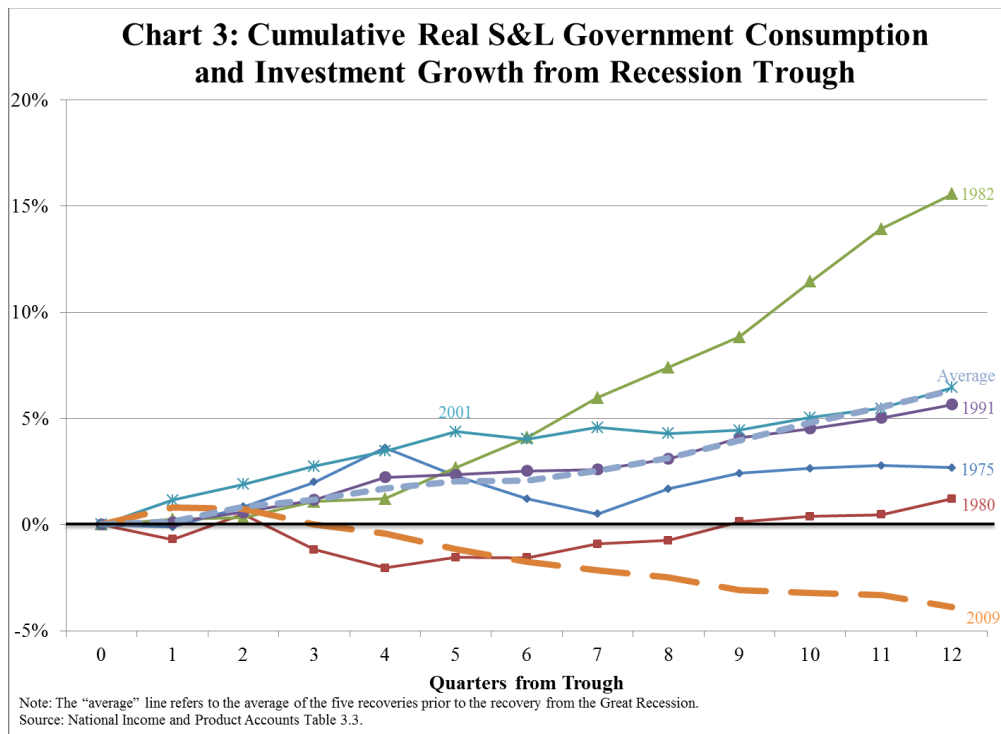
Table 1: Recession Dates

Peak	Trough	Contraction	Expansion Prior to Recession	Expansion After Recession
<i>Quarterly dates in parentheses</i>		<i>Peak to trough (months)</i>	<i>Previous trough to this peak (months)</i>	<i>Trough to next peak (months)</i>
November 1973(IV)	March 1975 (I)	16	36	58
January 1980(I)	July 1980 (III)	6	58	12
July 1981(III)	November 1982 (IV)	16	12	92
July 1990(III)	March 1991(I)	8	92	120
March 2001(I)	November 2001 (IV)	8	120	73
December 2007 (IV)	June 2009 (II)	18	73	N/A
Source: National Bureau of Economic Research.				

The unprecedented decline in state and local government consumption and investment

Subnational governments’ contribution to real GDP growth was markedly different during the recovery from the Great Recession relative to other recoveries. In prior recoveries, state and local real consumption and gross investment spending usually grew steadily in the quarters following the recession’s trough, with cumulative growth averaging about 6 percent 12

quarters after the trough (chart 3).⁹ Real cumulative growth was positive after 12 quarters in all five prior recoveries, with cumulative growth varying from between 1 percent and 16 percent. In the most recent recovery, state and local consumption and investment stagnated in the quarters immediately following the recession’s trough and by June 2012—12 quarters after the trough—it had shrunk by about 4 percent. The decline was unprecedented; never before had the state and local contribution to GDP been negative 12 quarters after a recession had passed its low point. Part of this trend may be due to federal fiscal support aimed at mitigating the effects of the Great Recession, and part may be due to the atypical duration of the downturn; isolating these factors is a worthy topic for future research.



This discrepancy is particularly pronounced for state and local government consumption. Cumulative growth in subnational government consumption is typically very strong in the quarters following the trough, on average exceeding 8 percent 12 quarters after the recession’s low-point. In the most recent recession, however, the series was mostly stagnant in the two years following the nadir and had contracted slightly after three years. The second weakest growth in

⁹ Throughout this section, change in government spending and revenues are indexed to inflation and presented in real terms.

this series, occurring after the 1980 recession, showed cumulative growth of about 4 percent after 12 quarters from the recession's trough.

The difference in state and local government gross investment in the most recent recovery, while lower than average, was not an outlier relative to the other recoveries. Gross investment is more volatile than consumption, and is a much smaller component of state and local contributions to GDP. Contractions in gross investment are more common during recoveries than contractions in consumption, reflecting the lumpier nature of investment decisions, and the possible greater ability to cut investment activity when budgets are tight. Among the other recent recoveries, the mean change in investment was a mild contraction after 12 quarters. In the most recent recovery, gross investment contracted more, falling by nearly 15 percent. Only the period after the 1975 recession showed a more severe decline. Part of the smaller decline following the Great Recession could reflect the federal funds delivered by ARRA.

In contrast to typical recoveries, state and local government employment declined by over 3 percent three years after the trough

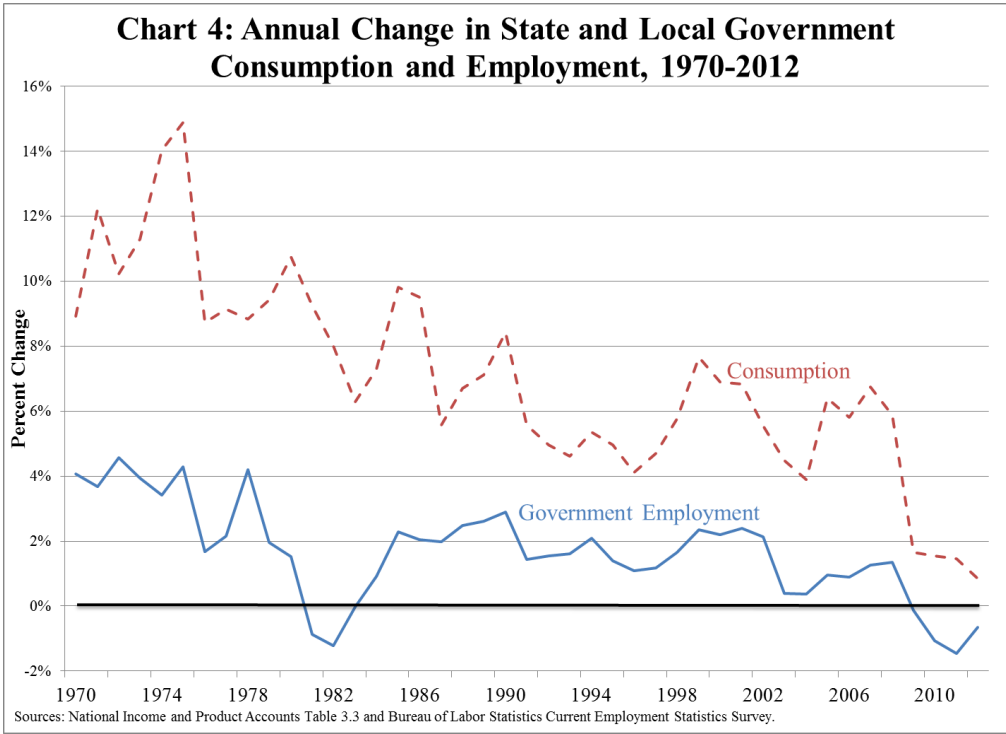
The national labor market has been slow to recover from the Great Recession relative to past experiences. Since the start of the recession, both private- and public-sector employment have suffered. Dadayan and Boyd (2012) studied cumulative labor force growth five years from the start of recent recessions, and found that local government and private sector employment each fell by about 3 percent, while state government employment fell by about 1 percent over this period. This pattern contrasts with other recessions; Dadayan and Boyd found that government employment growth was usually positive five years after the start of a recession (table 2).

While the cumulative change in employment since the start of the recession is comparable for the private sector and the state and local sector, their paths have been quite different. Private sector employment fell quickly, falling by 6 percent from December 2007 to April 2009. However, by spring 2010, the private-sector labor market began to rebound and has been climbing steadily ever since. In contrast, state and local government employment grew slowly between December 2007, and August 2008, but has been falling steadily since then, and is now 2.9 percent lower than it was in December 2007.

Recession	Private	State gov emp.	State gov. education	State gov. non-education	Local gov. emp.	Local gov. education	Local gov. non-education
1973	13.5	18.3	12.4	22.3	14.5	9.0	21.1
1980	7.3	5.9	9.3	3.8	-1.6	1.7	-5.3
1990	7.2	7.2	10.7	4.8	8.1	9.1	7.0
2001	2.0	4.3	10.7	-0.5	5.8	6.2	5.2
2007	-3.0	-1.3	4.5	-6.1	-2.9	-3.1	-2.7

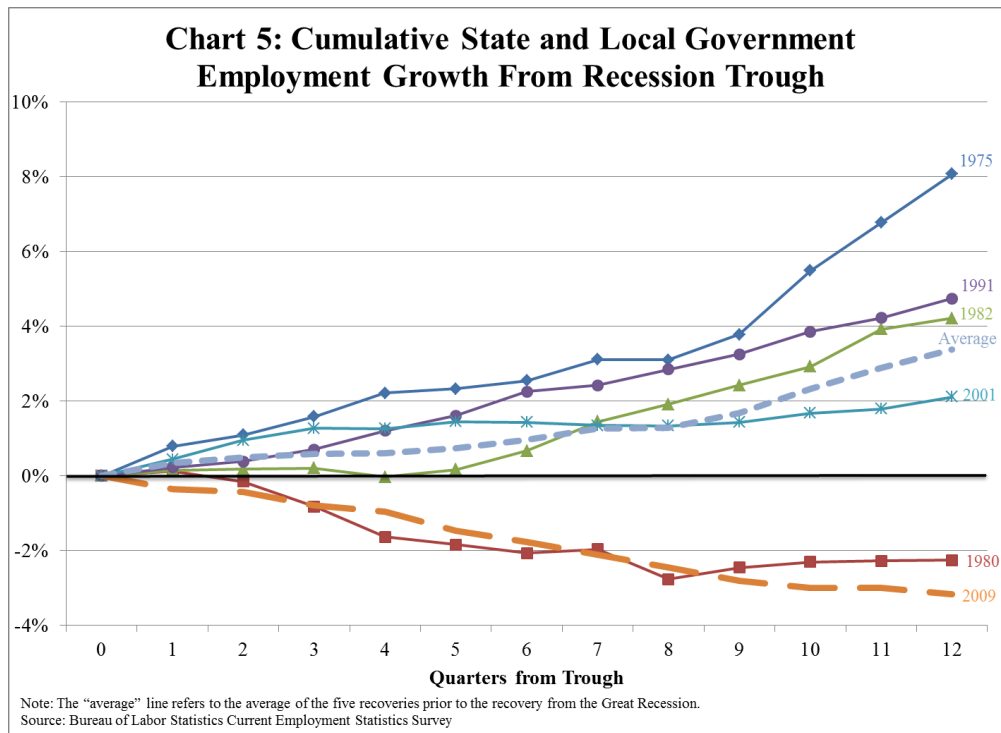
Source: Dadayan and Boyd (2013).

The declines in state and local government employment can be directly attributed to falling state and local government spending. The persistent declines in consumption spending lead to declines in employment due to the strong correlation between government consumption spending and employment (chart 4). This correlation exists since much of state and local spending is for labor. For example, in 2011, 42.4 percent of state and local consumption and investment spending was for education, which is highly labor intensive.



As with consumption and gross investment, state and local government employment after the Great Recession contracted atypically. State and local employment historically had grown

slowly for about two years after a recession's trough, and then began to accelerate.¹⁰ With the exception of the current recovery and the recovery from the 1980 recession, all recessions showed cumulative state and local employment growth in excess of 2 percent three years from the trough. Only in the most recent recovery and the 1980 recovery did employment contract (chart 5).



Local governments employ the bulk of state and local government workers. Consequently, local government patterns largely mimic those exhibited by state and local governments combined. The recent recovery, unlike all those except for the 1980 recovery, showed persistent and substantial decline in local government employment following the recession's trough. By June 2012, 12 quarters after the recession's trough, local government employment had fallen by 3.5 percent. State government employment trends in the recent recovery are similar to those for local governments, with cumulative state employment falling by

¹⁰ The brief uses data from the Bureau of Labor Statistics Current Employment Survey (CES), also known as the "establishment survey." The CES is a broad survey of private firms and government entities. In the CES, employment is a count of jobs held as opposed to other measures of employment, such as hours worked, number of individuals employed, or payroll spending.

2.3 percent after 12 quarters. The most recent recovery stands out as the sole case in which state employment had shrunk after three years.

A substantial share of state and local government employment is in education. In December 2012, 47 percent of state government employees and 55 percent of local government employees worked in education. Prior to the most recent recovery, cumulative education employment growth measured about 3.5 percent, on average, three years after a recession's trough. In the most recent recovery, however, cumulative education employment was down over 2 percent after three years. Historically, non-education employment by state and local government exhibits a less favorable post-recession pattern than education employment. State and local non-education employment in prior recoveries was, on average, about 3 percent higher 12 quarters following a recession's trough. In the most recent recovery, non-education employment by subnational governments continually contracted in the 12 quarters following the recession's trough, falling by a cumulative 4.1 percent.

Growth in income and sales tax revenue mirrors prior trends, but property tax revenue remains substantially depressed relative to prior recoveries

Overall, state and local tax revenues showed less robust growth in the most recent recovery relative to the historical experience. However, this response was largely driven by property tax revenues, which declined (unlike the growth found during and after other recessions) while income and sales tax revenues responded in a more typical manner (table 3).¹¹ Income tax receipts, which comprise about 22 percent of state and local tax revenue, grew at a smaller rate (12.3 percent) than in prior recoveries (18.6 percent).

The pattern for sales taxes was similar. Sales tax receipts, which make up about 26 percent of state revenues and about 8 percent of local revenues, on average increased 13.7 percent three years after the recession's trough. In the current recovery, cumulative sales tax growth mirrored the mean trend for prior recessions for about eight quarters, after which growth slowed relative to the prior trend, and ended up 7.1 percent.

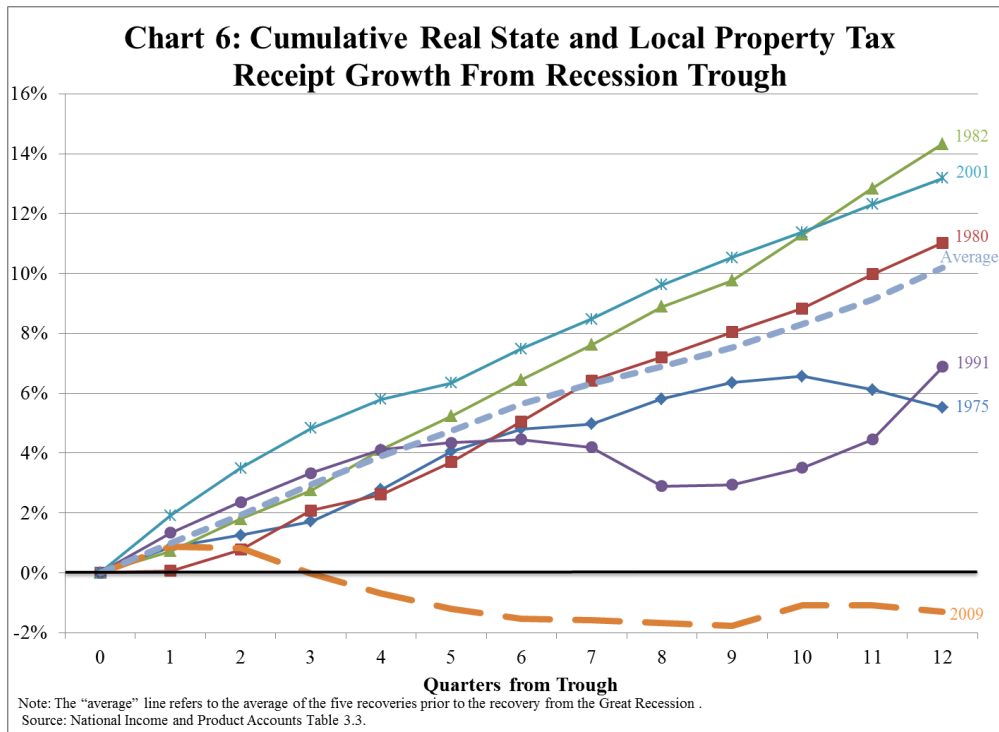
¹¹ Using data through 2009, Lutz, Malloy, and Shan (2011) find that lower housing prices affect state and local tax revenues through several channels, including property tax, transfer tax, income tax, and sales tax revenues. They find little historical evidence prior to 2009 that lower housing prices affect property tax revenues, and attribute this weak relationship to both the lag between housing price declines and property tax assessments and to the inclination for governments to change their tax rates in response to changes in housing prices.

Recession Start	Recession Trough	Total Tax Revenue	Income Tax Revenue	Sales Tax Revenue	Property Tax Revenue
November—73	March—75	13.7	30.1	13.4	5.5
January—80	July—80	10.6	16.5	9.5	11.0
July—81	November—82	20.9	26.4	22.4	14.3
July—90	March—91	11.1	13.6	14.0	6.9
March—01	November—01	12.8	6.6	9.3	13.2
December—07	June—09	5.9	12.3	7.1	-1.1
Average		13.8	18.6	13.7	10.2

Note: “Average” refers to the average of the five recoveries prior to the recovery from the Great Recession.
Source: National Income and Product Accounts Table 3.3.

In past recoveries, property tax growth remained robust following the recession’s trough, showing cumulative growth of about 10 percent after 12 quarters. The weakest cumulative growth, observed after the 1973 and 1990 recessions, still amounted to about a 6–7 percent increase after three years. In contrast, property tax revenue shrank after the 2007 recession’s trough, falling by about 1 percent after 12 quarters (chart 6). This pattern resulted from the nature of the 2009 recession, which—as has been well-documented—was driven by steep and sustained declines in housing values.¹²

¹² When measured five years from the start of the recession rather than three years from the start of the recovery, the unique nature of the 2009 recovery is even more dramatic. Five years from the start of the recession, revenues increased by 17.4 percent on average, compared to a fall of 1.8 percent in this recovery. On average, income tax and sales tax revenues increased by 22.2 percent and 18.9 percent, respectively, while most recently, these revenue streams fell by 1.1 percent and 3.1 percent. Similarly, property tax revenues increased by 13.5 percent on average compared to an increase of just 2.6 percent in the most recent recession and recovery. These trends, however, are likely influenced by the longer duration of the Great Recession.



Conclusion

In a macroeconomic framework, one of the traditional benefits of state and government spending is that it provides a constant source of growth even in a time in contraction. Perhaps more importantly, state and local consumption and investment have served to offset steep contractions in federal contributions to GDP. However, this trend reversed in the most recent recovery, when state and local contributions to GDP declined substantially. As a consequence of reduced spending, state and local payrolls shrank rapidly, adding further pressure on the national labor market.

This declining trend in state and local tax revenue was also atypical. In particular, property tax revenue—driven by steep declines in the housing market—was cumulatively about 1 percent less three years into the recovery. On average, this revenue source has been about 10 percent higher three years following a recession’s trough.

The lackluster performance of the state and local government sector raises questions about the sector’s role in future (and inevitable) downturns in the business cycle. Constraints on state borrowing, volatile sources of revenue, and a reticence by some governments to increase

tax rates likely played a role in the sharp spending contraction in by state and local governments. This downturn warrants future attention to the fiscal tools available to policymakers directing subnational government policy.

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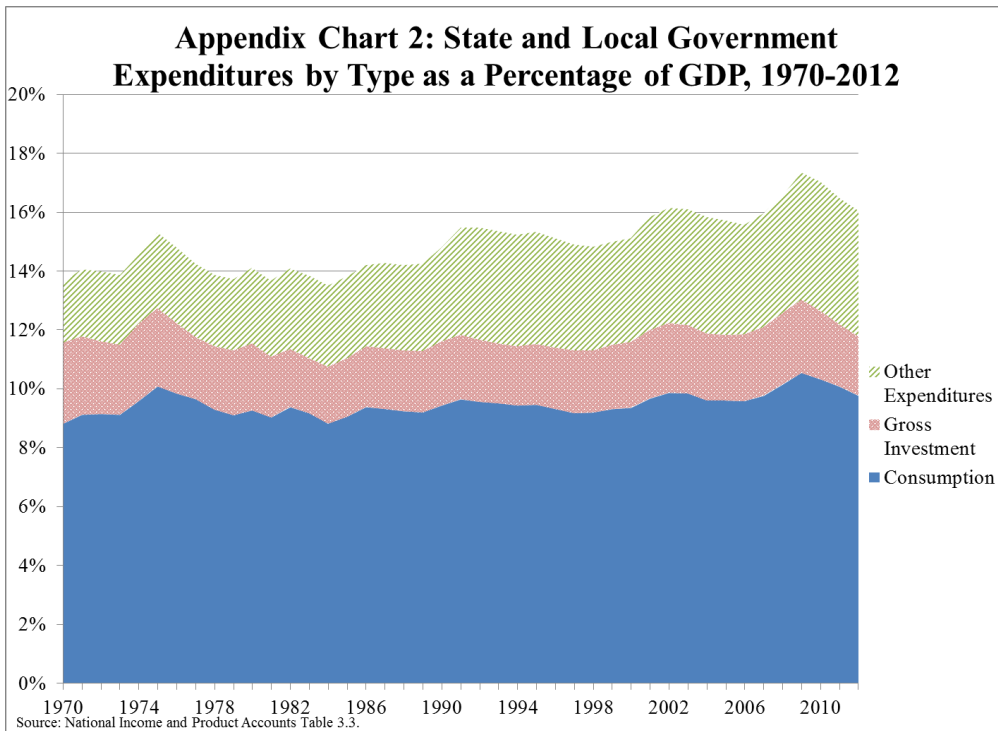
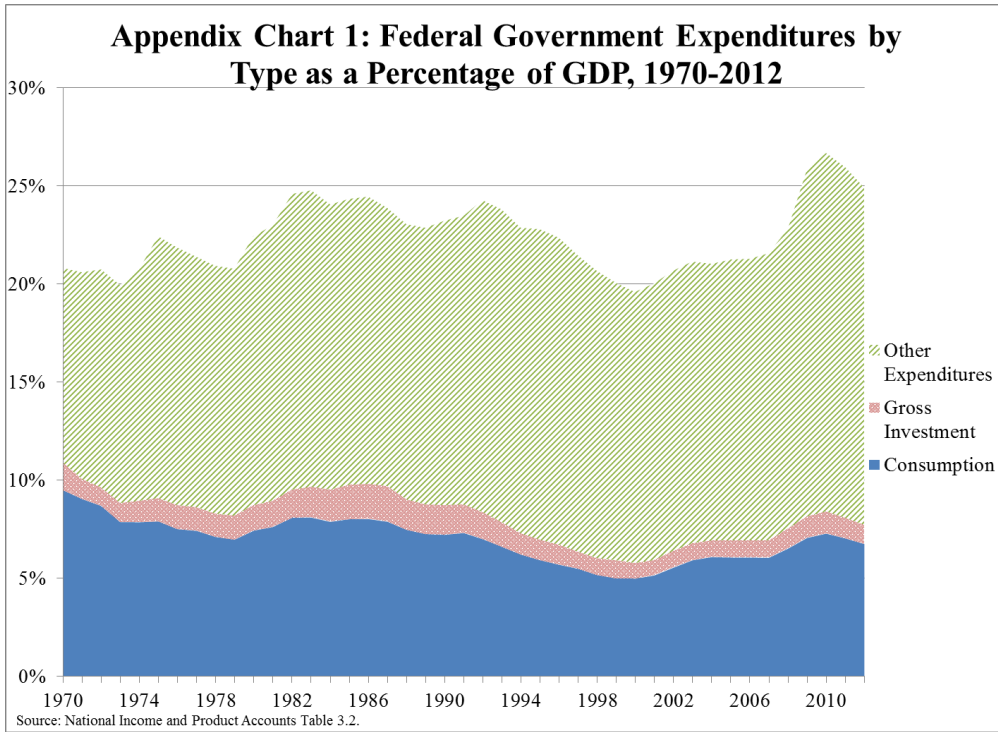
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Appendix Chart 3: Local, State, and Federal Government Employment, 1970-2012

