The Political Economy of Local Governance and Service Provision

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Abstract

THE POLITICAL ECONOMY OF LOCAL GOVERNANCE AND SERVICE PROVISION

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Local governments have a large impact on the wellbeing of individuals. They are the providers if not the funders of most public services and they enact and enforce many of the laws that determine the productivity of individuals within the economy. This dissertation looks at three aspects of the effect of local governance incentives on public service provision. The first chapter looks at the relationship between federal funds and local governance. The analysis suggests that federal aid weakens the competitive discipline that Tiebout competition enforces on local governance resulting in greater incentives for corruption. The second chapter examines the effects of urban decline on disaster response and reconstruction. Cities that have experienced urban decline before a disaster experience coordination failures that result in slower population recovery. The final chapter compares the provision of flood protection by a centralized body, the United States Army Corps of Engineers, with the potential provision by local governments. This chapter uses the analysis of the Interagency Performance Evaluation Task Force’s
Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System, released March 2007, to identify specific failings of centralized control.
1 Introduction

In the 18\textsuperscript{th} century the founding fathers of the United States of America undertook an “experiment” of such importance that its success or failure is still being debated today. Fundamental to the design of the new American democracy was the federalist governance structure; separate levels of government, each with its own finances and sovereign mandates. These competing governments should offer citizens protection of individual liberties while allowing for government to provide those services that the private sector finds too difficult or unprofitable to provide. Thus, federalism is seen as an answer to the central dilemma of governance; a government large enough to protect our rights is also large enough to ignore them (Weingast 1995).

In 1956 Tiebout introduced an argument for the economic efficiency of federalism when he theorized that the presence of many jurisdictions would guarantee efficiency of public goods provision. While the Tiebout hypothesis was dependent on a number of unrealistic assumptions, its basic intuition has remained part of the economic and political science body of knowledge. The primary lesson of Tiebout’s model is that jurisdictional competition is good for residents. By facilitating exit from unfavorable situations, multiple jurisdictions create some of the benefits of market competition in the public sphere. With this step, federalism became the means of assuring the most effective governance, in terms of provision of public services.
Federalism mitigates two potential difficulties of effective public service provision. First, individuals have different preferences for public services. These disagreements make it increasingly difficult to provide efficient public services as the number of individuals within a particular jurisdiction increases. However, federalism, by providing alternative governments on the same level, allows for individual sorting according to preferences for public services. Second, providing public services, like the provision of any good, requires marginal decision-making. However, public officials are required to produce and provide these services in an atmosphere lacking a residual claimant, competition or market prices. Furthermore, giving a non-residual claimant control over the operating budget creates the incentive for corruption; the use of public resources for private gain. Competing governments create some of the benefits of market discipline, including a non-political means of solving the principle-agent problem of representative government.

These arguments suggest that a decentralized, fiscally separated federal system of governance is the most capable of effectively providing public services as well as limiting abuses of power by political officials. Within this structure, local governments play an important role. It is the competition between these governments that generates the discipline responsible for assuring that political officials act in the interest of residents. Therefore, it is worthwhile to examine the determinants of the quality of local governments as well as the impact that these governments have on individuals.

This dissertation is meant to further our understanding of the incentives facing local government officials and the effects that the resulting policies have on the wellbeing
of individuals. The analysis focuses on the effects of Tiebout competition on the effectiveness of local governance. The benefits of Tiebout competition extend beyond the ability to sort individuals according to their preferences for public goods or assign jurisdiction of public goods to the scale of government that best internalizes externalities. The impact that competition has on the behavior of government officials should also be taken into account.

There is a tremendous amount of control over individuals daily lives exercised in local governments. Much of the effect of government policy flows through the actions of local government officials and the reactions of residents. Most federal and state mandated services are still administered through local governments. Those who face competition must respond by putting their efforts toward making a better community and those who do not face competition are able to focus on their own betterment at the expense of the community. If it is in the local government’s interest to see a community prosper, then it is more likely that it will.

There is, of course, more than Tiebout competition facing local governments. The threat of out-migration by residents is not effective unless the government official can be reasonably sure of remaining in office. Political competition, then, plays an important role in determining the behavior of local governments. However, this analysis will largely ignore the role of political competition in order to focus on the effectiveness of economic, or Tiebout, competition in aligning the interests of local government officials and residents.
This study looks at the effectiveness of economic competition in the political process. The focus is on the incentives facing local government officials and the results that those incentives have on local policy and local communities. The second chapter, Understanding Corruption in American Cities, explores the relationship between federal grants and the provision of local public services. It attempts to show that federal grants to local governments weaken the effects of Tiebout competition by providing a resource on which local officials can collect rents and by weakening the link between good governance and revenue. The result is poor provision of public services and urban decline.

The third chapter, The Political Economy of Flood Protection, looks at the arguments for local government responsibility for flood protection. The arguments for federal provision come from the presence of significant externalities in the provision of flood protection that could result in under-provision. The arguments for local provision come from the fact that local governments are more likely to accurately translate the value of flood protection into money spent on flood protection as well as some positive social benefits of many providers. The result is that the benefits of centralized provision are often not realized and the alternative is clearly viable.

The forth chapter, Decline Before Crisis, looks at the effects of previous urban decline on the ability of local governments to respond to and recover from disaster. This chapter analyzes New Orleans’ chances of recovery in the face of a long history of poor governance and urban decline. Specifically, I examine the effects of population loss, poor public services and poor governance on New Orleans’ recovery efforts. These
characteristics of the New Orleans community have generated coordination around a low recovery equilibrium, making New Orleans’ full recovery doubtful.

This dissertation looks at how the specific role of local governments within a federalist structure creates incentives that affect public service provision and rent-seeking. The impact of competition on the incentives of local government officials is central to this analysis. Therefore, this analysis will proceed with an examination of how deviation from fiscal independence of local governments affects the incentives of local officials.
2 Understanding Corruption in American Cities: The Effect of Federal Expenditures on Tiebout Competition

2.1 Introduction

In 1976 Charles Swibel, then Chairman of the Chicago Housing Authority, sold the General Services Administration—the federal agency responsible for social security—a parcel of land to build its Chicago headquarters. This same land had been sold to Swibel in 1968 by the city of Chicago—in the person of Mayor Daley—at a deeply discounted rate as part of an effort to revitalize downtown Chicago. The terms of the deal expressly forbid anyone other than Swibel developing the land as well as selling it for profit. Not only did he repeatedly violate the terms of this deal, he also used his position as Chairman of the Chicago Housing Authority to gain financial advantages in his private business dealings. For example, by placing CHA funds in low interest savings accounts in local banks he enjoyed a $50 million personal line of credit.¹

Stories like this are not uncommon. At times corrupt officials in state and local government seem to outnumber honest ones and often there is some connection to a federal spending program. Perhaps the connection is not spurious. It has long been a conclusion of the public finance literature that federal grants do not have the desired effect on state and local spending. This analysis claims that federal grants to state and local governments do more than disappoint. Federal grants make state and local

¹ This story is related in Ross Miller’s (1996), Here’s the Deal: The Buying and Selling of a Great American City, as part of a long and sordid history of shady land deals involving the city of Chicago.
governments more likely to be corrupt by decreasing the effects of competition between
governments. By providing them with revenue that is not conditioned on the economic
welfare of their constituents, federal grants erode the effectiveness of the primary non-
electoral constraint on local officials.

In this chapter I will focus on the proportion of tax revenue that a local
government chooses to spend on the provision of public goods. Whatever proportion
they choose not to spend must be extracted through indirect means such as extorting
kickbacks, degrading the value of public services or embezzlement. Competition among
local governments should result in 100% of local budgets being spent on public goods.
However, the addition of federal funds into local budgets erodes this competition creating
the incentive for revenue extraction by local governments.

Local officials may have no incentive to spend the additional revenue on
beneficial public services but they have every incentive to appear to do so. While federal
grants may allow local officials to bypass the constraint of intergovernmental
competition, the same cannot be said of federal government oversight, electoral or legal
consequences should they simply appropriate the extra funds. This leads to wasteful and
corrupt practices that are designed to filter resources and money into the pocket of local
officials while appearing to be providing services to the public. This tendency can help
explain some of the trends seen in the economics of metropolitan areas; specifically, the
difficulties faced by central cities.

This chapter will proceed with a review of the theoretical and empirical
foundations of this argument in section 2.2. Section 2.3 will provide a theoretical
justification for the result that federal grants create more corruption and Section 2.4 will explore the mechanisms that local officials use to extract the rent and their effects on the provision of public goods. Section 2.5 will conclude.

2.2 Theoretical and Empirical Foundations

The plight of American cities has been the focus of research in the social sciences for over a century. More recently, the focus has shifted to the fiscal difficulties faced by metropolitan centers in an age of growing suburbs. Specifically, urban centers have found their tax bases shrinking and the demand for public goods and services increasing simultaneously. Shrinking tax bases are the result of better opportunities in the suburbs for upper and middle income residents, while increasing demand for public goods and services is the result of an increase in lower income residents.

This dilemma is essentially created by the societal goal of providing a safety net for the poor. The practical action toward this goal often falls on local urban governments. However, if city governments are to maintain their tax bases, they must concentrate on providing public goods and services that clearly benefit upper and middle-income residents as well as low-income residents. Buchanan (1971) demonstrates the results of attempts to force high-income residents to contribute to the joint consumption of goods that do not exhibit this jointness characteristic. Since there is no economic incentive for high-income residents to agree to such an arrangement, they will simply withdraw from the political process that produces it by moving to another jurisdiction.
While some services that city governments produce clearly do exhibit jointness characteristics—road maintenance, water treatment, sewage disposal and police protection—many of the services that are aimed directly at the poor do not—public housing, public transportation, public schools, social services.\(^2\) When city government attempts to fund too many services aimed at the poor at the expense of middle and high-income residents, those individuals will tend to migrate to accessible suburbs. Furthermore, low-income residents who once took advantage of lower property values outside of the city will migrate into metropolitan centers.

These dual tendencies are often used as justification for federal grants. The federal governments provides funding for those services that provide a social safety net as well as those that exhibit wider externalities—highway maintenance, public schools, housing etc. The system of intergovernmental transfers allows city governments to provide these services without increasing taxes and driving away middle and high-income residents. However, federal grants have been important to city finances since the 1950’s and yet cities have continued to experience the same problems.

The problems with federal grants have been well documented both theoretically and empirically. Grants have been shown to have varying effects on the budgets of local governments depending on the specific form of the grant as well as various restrictions

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\(^2\) Some of these services, particularly public schools and public transportation can indeed exhibit jointness characteristics if they are provided in a manner valued by middle and high income residents. For example, the subway systems in many major metropolitan areas are extremely valuable to those residents. However, a poorly performing public school system will not be supported. Therefore, it is important to realize that the specific characteristics of the public service can influence this distinction.
placed on its use. These problems mean that it is difficult to predict the effects that federal grants will have on the provision of public goods. However, there are two mechanisms that have been shown to distort the effect of federal grants on budgetary decisions of state and local governments: the displacement effect and the fly-paper effect.

The displacement effect refers to the potential for local government officials to accept federal funding for a program that they would have funded themselves. In this case, the federal funds simply displace local government funds without increasing total spending on the program. The revenue that is freed up is either used for other programs or is used to allow a reduction in taxation. Empirical studies of the displacement effect show that it varies depending on the type of grant that is used with open-ended categorical matching grants creating this biggest effect and closed-ended categorical matching grants creating the smallest. This is probably due to both the fact that open-ended grants allow for greater sums of money to be transferred to the lower levels of

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3 Gramlich (1977) identifies three distinct types of federal grant; open-ended categorical matching grant (Type A), lump sum general revenue sharing grant (Type B) and closed-ended categorical matching grant (Type C). Each of these grants has different predicted effects on the budgetary decisions of local governments. A Type A grant reduces the relative price of grant-aided public services and thus is predicted to increase government spending by either less than equal to or greater than the amount of the grant based on the price elasticity of demand for public services. A Type B grant creates an income effect and so is predicted to increase government expenditures by less than the full amount of the grant with the exact number being determined by the income elasticity of demand for public services. A Type C grant both lowers relative prices and creates an income effect and is therefore predicted to have and impact somewhere between the two previously mentioned grants.

4 Studies show the amount of expenditures stimulated by Type A grants to vary from very small- Orr (19770, 15%; Ohls and Wales (1972) found negligible stimulation for all expenditures except highways- to close to 100% of the value of the grant- Gramlich and Galper (1973), 80%; Inman (1971), 80% ; Feldstein (1975) around 100%.

5 Studies show the expenditures stimulated by Type C grants are usually much higher than those of Type A grants ranging from 30% (Bolton, 1969) to over 200% (Kurnow 1963, Pidot 1969, Johnson and Junk 1970) with the majority estimating over 100% of the grant amount (Gramlich 1977, 119).
government and the specific programs that tend to be funded by each particular grant (Gramlich 1977, 120).

The second case in which federal grants fail to perform their stated function is the fly-paper effect. The fly-paper effect is seen when general revenue sharing grants- lump-sum grants with no use restrictions- stimulate more spending on public services than the residents’ income elasticity of demand would predict. In other words, a general revenue sharing grant should produce the same increase in public spending as a reduction in federal income taxes would. However, many studies have found that the amount of public expenditures increases more than any measure of income elasticity could account for. This tendency is attributed to the power that bureaucrats have over budgetary outlays combined with the bureaucratic incentive to over-produce public services. (Niskanen 1968, and McGuire 1973).

These two effects make it clear that local government officials have much more slack in the use of federal grants than theoretical justifications for grants account for. The displacement effect operates so that the aims of the central government are frustrated to the benefit of the median voter in local districts. The fly-paper effect is more insidious. It operates so that the aims of the constituents in local districts are frustrated to the benefit of local politicians and bureaucrats. It is, however, a long way from disappointment in the performance of federal grants to the assertion that they cause corruption.

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6 Estimating the magnitude of this effect is obviously difficult due to the fact that it requires exogenous measurement of residents’ income elasticity of demand. Estimates of income elasticity are generally close to unity implying a very small change in public expenditures for changes in income, while estimates of expenditure stimulation vary between 50% and 100% of the grant (Gramlich 1977). This means that there is a large difference in whether the money comes to the residents in the form of a federal tax cut or a lump-sum transfer to state and local governments.
Much of the literature on the causes of corruption focuses on political and institutional factors that may increase the amount of corruption in a society. This literature is anchored theoretically by Shleifer and Vishny (1993) and empirically by Treisman (2000). Shleifer and Vishny (1993) show that corruption is more distortionary than taxation and that decentralized bureaucracies tend to create more corruption than centralized ones because of the presence of externalities in the production of political favors. Decentralized bureaucrats will fail to take into account the effect of their bribe seeking on others within the government, leading to wealth decreasing corruption.

Treisman (2000) tests this and other theories of the causes of corruption. Tresman’s findings support the theory that decentralized governments produce more corruption. Among other things he finds that being a federalist country increases corruption. More recent studies have tended to corroborate these findings (Gerring and Thacker 2004), however, there are some dissenters (Fisman and Gatti 2002). Furthermore, many of the factors that tend to decrease corruption in empirical studies—such as political accountability (Aidt et al 2008), checks and balances (Alt and Lassen 2008), political competition—are theoretically linked to federalism. The puzzle may be resolved by looking at a specific component of federalism whose effect on corruption has not been considered; intergovernmental fiscal transfers.

There have been few studies on the effect of intergovernmental fiscal transfers (federal grants) on the corrupt behavior of local government officials. Kostogiannis and Schwager’s (2008) model looks at the effects of equalization grants on local politicians’ ability to extract rent from their constituents. They find that the grants may either make it
more or less difficult to extract rent based on how transparent the equalization program is. While their predictions are consistent with those derived here, their results are based on effective political constraints on politicians’ behavior. This research differs from theirs in that it explicitly assumes no political constraints in order to analyze the effectiveness of Tiebout competition on politicians’ behavior. Therefore, it should be viewed as complementary to this research.

Within the federalist structure, intergovernmental grants perform the important role of allowing higher levels of government to provide public services that must be administered on the local level. In this way, central governments can use their political mandate to correct externalities and further broad societal goals. However, the cost of eroding the component of fiscal separation from the federalist structure may be higher than the benefit.

2.3 Creating Rent With Federal Expenditures

The purpose of this analysis is to ascertain the impact intergovernmental grants have on the behavior of local governments as agents of residents. In order to understand how effective local government will be at providing residents those public services that they prefer we must understand the incentives of local government officials. We will consider two potential motivations for government officials: power, personal revenue.7

Government officials maximize power by controlling the largest budget possible

7 There is a third motivation, remaining in office, which would have a multiplicative affect on both of the aforementioned arguments in the utility functions of local officials. However, for the purposes of this analysis it is useful to ignore that argument in order to focus on the effect of Tiebout competition on the incentives of local officials.
(Niskanen 1973) and they maximize personal revenue by extracting rent from the local budget.\(^8\)

Therefore, local governments have an incentive to provide public services when this allows for larger budgets or increases total revenue more than costs. Brennan and Buchanan (1980), in *Power to Tax*, show how a revenue-seeking, surplus maximizing government would choose the amount of revenue to spend on public goods given that there is a positive relationship between expenditure on public goods and the equilibrium quantity demanded of the tax base. The following section will present this model\(^9\) and then modify it to show how including an additional revenue source, intergovernmental grants, affects this decision-calculus.

In order to focus on the profit motive of local government officials, it is assumed that citizens have no electoral control over the government and that government’s rule indefinitely.\(^10\) Therefore, the only constraints on local government are created by competition with other local governments and limited disciplinary actions by the central government. It is assumed that migration, while not costless, is unrestricted meaning that the central government ensures no local government can regulated migration into or out of its jurisdiction. The only goal of the local government is to maximize utility and the only argument in its utility function is revenue. There is only one tax base and the rate is

\(^8\) The methods of extracting rent such as extorting bribes and kickbacks in return for favorable contracts, perks and embezzlement will be discussed later in the chapter. For now, let it suffice that extracting rent is analytically similar to extracting profit from a monopoly.

\(^9\) The base model is taken almost directly from Brennan and Buchanan (1980) Ch. 7. All references not specifically stated will be from that work.

\(^10\) Buchanan shows that the addition of typically short time horizons into a model determining tax rates causes a “high tax trap” that forces politicians into setting taxes higher than they otherwise would (Buchanan and Lee 1982, 475). This is the likely outcome in this case as well.
assumed to be proportional. Finally, there is a positive relationship between the expenditure on public services and the equilibrium quantity demanded of the tax base.

The last assumption guarantees that government has some incentive to provide public services. If demand for the tax base is positively influenced by expenditure on public services than there is some range over which government can increase expenditure on public services and increase net revenue. In this instance, the interest of government is aligned with the interest of residents as they are being provided with public services that they value.

In this situation, with a monopoly government, the analytics are those of a monopoly that cannot price-discriminate. The government will choose the rate where the marginal revenue curve intersects the marginal cost curve as the “quantity” of the tax base to produce and the tax can be measured by subtracting the competitive price from the monopoly price. Given a particular demand for the tax base, local government will always choose the tax rate that maximizes revenue.

Postulating a positive relationship, at least over some relevant range, between the expenditure on public goods and the demand for the tax base, allows us to trace out a reaction curve between the equilibrium expenditure on the tax base and the government’s expenditure on public goods. Allowing for behavioral adjustments of individuals after the revenue-maximizing tax has been imposed we have curve PP in figure 1. If we put

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11 The marginal cost curve is assumed to be horizontal for simplicity.
12 It is important to note that there are two possible constraints on government behavior; 1) limiting the revenue demanded by choosing the appropriate tax base and 2) ensuring that revenues are spent on beneficial public goods (Brennan and Buchanan 1980, 207). This analysis will deal only with the second constraint.
13 At this point it is assumed that expenditures on public goods are beneficial to tax payers, meaning that they are desired and worth the cost in taxes.
tax revenue from property on the vertical axis as well as expenditures on property we can trace out PT the reaction of tax revenue to changes in the governments expenditure on public goods.

Figure 1: Optimal Expenditure on Public Services

In order to supply public goods the government must use some of its revenue. Since all of the variables are normalized to dollars it is easy to see that OZ is the break-even
line. For any level of public good that the government wishes to supply it requires the amount of revenue represented on the vertical axis.\textsuperscript{14} The level of expenditures on public goods that a revenue-maximizing government will choose given the depicted relationship between the tax base and expenditures on public goods is determined by the point where the PT, the marginal revenue of increasing expenditures on public goods, is at its greatest height above OZ, the marginal cost of increasing expenditures on public goods.

The surplus gained by the government is shown as the distance RE. In perfect Tiebout competition, all such surplus would be eliminated and expenditures on public services would be equal the total tax revenue. However, by allowing for some differences in the preference for locations\textsuperscript{15} as well as some costs of relocating rents may be re-introduced even in a non-monopolistic model. In this case, government can extract only as much rent as that of its closest competitor, allowing for the costs of relocating. This, while not ideal in the sense of perfect Tiebout competition, aligns the interest of residents and government. Government has the incentive to provide those public services that residents prefer, which they demonstrate with higher demand for the tax base, and is constrained in its rent extracting activities by competition from other local governments.

One of the key assumptions in the model presented above was that the government has access to no other sources of revenue. In this section we will relax that assumption in order to see how federal expenditures may affect the local government’s behavior. It is to

\textsuperscript{14} Note that if PT doesn’t lie above OZ at any point it is not profitable for the government to supply any public good at all.

\textsuperscript{15} Locational rents, or rents that accrue to a particular location, can be caused by historical preference as in the case of large cities. At this point, locating in New York City has benefits that cannot be completely replicated anywhere else. Locational rents may also accrue to particularly beautiful places or culturally unique places. All locations have some locational rent given that individuals often have a nostalgic preference for the places that they have lived.
be assumed that those who provide the funds expect them to increase the expenditure on public goods or else there is no reason to disperse them. However, as will be shown, there is no guarantee that local government will have an incentive to spend federal grants on the provision of preferred public goods.

Figure 2: Optimal Public Service Provision with Federal Expenditures
First we must return to the initial reaction function between the expenditure on public goods and the equilibrium expenditure on the tax base, in this case property. To see how a block grant would affect the outcome in depicted Figure 1, first imagine the federal expenditure as a tax base that is completely unrelated to the government’s expenditure on public goods. The federal grant can then be added on to the original graph (shown in figure 2) as a horizontal line because the revenue is fixed no matter the government’s expenditure on public goods. To get the total revenue that local government can expect from any given expenditure on public goods simply add the horizontal line and the original PT line.

It is quite obvious from this graphical representation that the optimal expenditure on public goods does not change at all with the introduction of federal block grants into the budget of the local government.\textsuperscript{16} Intuitively, the addition of revenue into the local budget provides no incentive to increase provision of public services because it has no impact on demand for the tax base or on total revenue generated from the tax base. Under these assumptions the entire amount of the grant, RR, is transferred directly into the surplus that the local government receives.

The federal grant has done nothing more than to create a rent for the local government to exploit. The local government will only provide public goods if it will increase the surplus it receives. Since demand for the tax base is assumed to be strongly and positively related to the provision of public it is in the local government’s interest to

\textsuperscript{16} The addition of federal grants into the budget of local governments does allow for larger budgets; which was mentioned as an argument in the utility function of local government officials. This incentive may generate more expenditure on public services but it does not necessarily generate productive expenditure on public services. This point will be picked up later in the analysis.
provide at least some public goods. By doing so it increases the tax revenue it receives. However, federal grants\(^\text{17}\) do not change the relationship between tax revenue and expenditures on public services so there is no self-enforcing interest for the local government to spend any of that revenue on public services.

It is obvious that the assumption that local governments face no electoral constraints is very important to this analysis. However, adding some electoral constraint on the local government but allowing for lapses in the electorates ability to know what the local government is doing changes the expenditure on public services but does not eliminate the gap. Assume, as Brennan and Buchanan (1980) do, that while the local government does not have to spend all of the revenue it receives on public goods, it does have to spend some portion of it that is determined exogenously.

In this case another curve would be drawn beneath the PT line to show how much revenue the local government could keep as surplus. This could guarantee a certain amount of expenditure on public goods but would be unlikely to reduce surplus to zero. Furthermore, while it would ensure that federal block grants result in an increase on expenditure on public goods by the required amount it would not in any other way change the incentives of local government so that is all that it would increase \(G\). The fact remains that electoral constraints must be relied upon to increase the expenditure on public goods and that such constraints are notoriously soft.

There are, however, constraints on the behavior of local government officials. For one it is very difficult to imagine them simply taking the federal grants and depositing

\(^\text{17}\) While earmarked grants are obviously related to the provision of specific public goods they are not related to the total provision of public goods. This will be an important distinction later.
them in their bank accounts. The next section will address the methods that local
government officials have at their disposal to extract the rent created by federal block
grants and their effects on the provision of public goods.

2.4 The Machinery of Extraction

While it may be true that governments rarely face effective electoral constraints there
are constraints on government behavior. In reference to the preceding analysis, local
governments, whether controlled by local interests, constrained by competition or limited
by the electorate are unable to simply take the federal grants that create the available
surplus and place them in bank accounts. While the federal government may not require
strict accounting, such a practice would surely get someone’s attention. There are
however, many spheres of control within the reach of local government. The corruption
that is present in local governments is the result of officials extracting the value of rents
from those areas that are under their control.

The sources of income that city governments generally have at their disposal are
taxes, local public goods and locational benefits. If a city government wishes to extract
the value of the federal grants it must do so by manipulating these three sources. Taxes
and local public goods are obviously as they appear but locational benefits needs more
explaining.

Buchanan defines locational rents as the surplus that an individual receives from
locating in one place over his next best alternative (Buchanan and Goetz 1972, 58). This
concept has at its root, the idea of locational advantages. Things such as scenery, social
connections, entertainment and economic opportunities should all be included in locational benefits. The manner in which this category comes under the control of local government is much like the rent extraction concept developed by McChesney (1987).

Being a city official carries with it the right to enact law that may diminish or enhance locational benefits. For example, the city may enact licensing laws that discourage certain business from locating in the city. This would decrease the economic opportunities for its residents, decreasing the locational benefits. To the extent that the city government forgoes income-producing opportunities in order to preserve locational benefits it is “investing” in locational benefits. More will be said on this later when we get into the analytics of extracting rent from locational benefits.

In order to see how the local government can extract the rent created by federal grants from the sources available to them we will return to the model developed earlier and the decision calculus of the local government as it pertains to these three areas.

A. Taxes

If the expenditures on (beneficial) public goods are required to increase, the demand for the tax base will increase and thus the revenue maximizing level of tax would increase. However, the local government will not rest while the level of demand is that high because it is above the surplus maximizing level.

Beginning with taxes will give us the opportunity to recap the important points of Buchanan’s model and our adaptation of it. Looking at the graph in figure 3 it is possible to determine what local government would find in its interest given the fact that it must spend the federal grants on public goods. Recall that the increase in revenue does not
translate into an increase in the optimal level of public goods because the local government has already chosen the level of public goods for its resulting increase in tax revenue from the tax base. Since the demand schedule for the tax base is unaffected by federal grants, the optimal level of public goods does not change. This implies that the local government has no interest in increasing demand for the tax base (property) or in changing taxes for a given demand schedule.

In order to see this, let's analyze a change in taxes. The local government has received additional revenue. One theory of how they might react to this is to pass on the funds to its citizenry by reducing taxes. However, the level of taxes that is considered optimal by the local government is only determined by demand schedule for the tax base and the optimum equilibrium quantity demanded that is determined by the elasticity of demand with regards to government expenditures on public goods. If the local government were to decrease taxes it would be reducing taxes below the revenue-maximizing level for a given expenditure on public goods. There is no incentive for the government to do this. Likewise, if the government were to raise taxes, it would be raising them beyond the revenue maximizing level. Unless there is a political cost to taxes, there is no reason to change them at all with an increase in federal expenditures.

B. Public Goods

There are two ways that the local government can extract the value of the federal grants from local public goods. The first is to substitute away from locally public goods and toward federally funded public goods. In our above example we have assumed that the federal grants were block grants with no specific earmarking. However, whether that
is the case or some form of earmarking is present this strategy is relevant. Imagine the scenario when there is no earmarking but some general accounting required. The local official will use the federal money on public goods as a substitute for local money that would have been used. If however, there is specific earmarking of the federal grant, the local government can provide the federally mandated public goods and suspend or neglect provision of locally initiated public goods.

This brings up an important point. Throughout this process we will assume that the change in the mix of public goods will not change the demand for the tax base. This would require that each public good is fully substitutable for each other. Or that the provision is not affected by matters of discreteness or differences in preferences. This is a necessary simplification that I’m not sure I can justify. The goal of the federal officials is to maintain the optimal level of demand and hence tax revenue. If the federal grants were to increase public goods it would be beyond the rev-max point. Therefore, the local government will find ways to adjust the entire picture so that the original quantities are maintained.

The next potential reaction of local government to federal expenditures regarding public goods is to decrease the efficiency of all of the public goods. The easily recognizable case of overpaying employees is explained by this decision-calculus. In order to see how this works, refer to the graph in figure 3. The stipulation is that the federal grants are spent on public goods. But the local government does not want to increase the demand for the tax base, as that would be a waste of potential rent.
Therefore, it pays to weaken the positive relationship between the expenditure on public goods and the expenditure on the tax base.

Figure 3: Degrading Public Expenditures

The local government could accomplish this by spending more on public goods but to less advantage to the citizen. This would result in a new relationship between maximum tax revenue and the expenditure on public goods. The new relationship depicted by PT₁ is flatter than that one before the addition of federal grants. While the expenditures have
increased from $E_0$ to $E_1$ notice that the tax revenue has remained the same. This indicates that the overall demand schedule has remained the same despite the increase in expenditures. Therefore, in the relationships shown the entire increase in expenditures is non-beneficial and flows into the hands of local government through indirect means.

C. Locational Benefits

The local government’s control over locational benefits is a bit more complicated to understand. In order to simplify we will concentrate on the government’s ability to affect the marginal product of labor. The situation before the inclusion of federal grants is one of equilibrium similar to the equilibrium of public goods. Being the local government of an area brings with it the right to determine many laws that affect business including zoning, labor law enforcement, production rights, fees and licenses, etc. Any restraint to exercise this right is equivalent to spending resources on the productivity of labor (Buchanan 1997, 121).

In terms of the analytical setup, this is exactly equivalent to the decision of the optimal level of expenditure on public goods. Figure 4 is reaction function that depicts the relationship between forgone rent extraction by the local government and the equilibrium expenditure on the tax base. Another graph equivalent to the one in figure 1 shows the optimal level of “expenditure” on locational benefit before the addition of federal grants. The results of this model are also exactly equivalent with the addition of federal expenditures creating no more locational benefit, simply more surplus for the government.
At equilibrium, both the expenditure on locational benefits and the expenditure on public goods would be chosen to maximize overall surplus. However, if we require the level of expenditures on (beneficial) public goods to increase that would result in an increase in demand for the tax base beyond that which is surplus-maximizing. The local government then has the option of decreasing the “expenditure” on locational benefits by excercising the right of rent extraction from the local business community. This decrease
moves the level of locational benefits farther to the left with the difference between $F_0$ and $F_1$ the rent extraction.

2.5 Conclusion

The corruption in American cities is somewhat puzzling given the highly competitive position that most cities are in. The key to this mystery lies in the fact that while cities are competitive within certain bounds, the have some leeway to extract rent given the costs of migration. By itself this may not be enough to generate much corruption except in cities that have large locational advantages. Combine costly migration with federal grant programs however, and it is another story.

The limits on the corrupt behavior of governments are best seen as lower limits on the value that citizens must receive from locating in a particular place. Providing local governments with additional sources of revenue will not affect that limit, therefore, the federal grants accrue to local governments as rent. Raising the revenue without any connection to the migration calculus of individuals will only raise the level of corruption.

The effects of this increase in corruption are indirect rather than direct. Federal grants are not simply carried to the bank and deposited. Local government must manipulate those things that it has under its control in order to extract the value of federal expenditures. For this reason, federal grants negatively impact the expenditures on local public goods and the efficiency of all public goods. They also encourage local government to decrease the locational benefits of its jurisdiction.
The results of this analysis, while counter-intuitive, stem from the consistent application of the core public choice principle of parity in behavioral assumptions between private and public citizens. Federal grants, instead of increasing the well-being of private citizens, increase their exploitation. Whether the grants are block or earmarked is irrelevant. It doesn’t matter to the overall level of corruption. Any revenue taken from individuals in the form of federal taxes and redistributed to the local governments results in the exploitation of individuals.
3 The Futile Fight Against (Human) Nature: A Public Choice Analysis of the US Army Corps of Engineers

The Military Engineers have taken upon their shoulders the job of making the Mississippi over again - a job transcended in size only by the original job of creating it.

Mark Twain, 1882

3.1 Introduction: A Brief History of the Mississippi River Problem

Throughout the 19th century and into the early 20th century the Mississippi River was a topic of great interest to engineers, politicians and economists alike. The Mississippi River Problem, as the topic was generally called, was broad enough to encompass concerns about the navigability of the river, flood protection, political and financial responsibility and so forth and so on. Here we are concerned with the aspects of the problem that impacted the decision to transfer control of the Mississippi River to the federal government. Specifically, the problems concerning the protection of the Mississippi River Valley from frequent flooding and the technical problems of shipping along the river (Cowdrey 1977, 15).

In some ways, these two problems tended to work against each other with the solution for one tending to exacerbate the other. With flood protection in the hands of local governments levees tended to be the chosen method. The problem with levees for river
navigation concerned the sediment that the river carries. In its natural state the river floods its banks periodically, depositing sediment on the land around it. With levees stopping flooding the sediment wasn’t dumped and was deposited on the bed of the river instead. This caused the formation of sandbars and shallow places in the river that made navigation difficult and restricted the volume of goods that could be carried by ships up the river (Barry 1997, 40-42).

Navigational concerns were used as the first justification for federal involvement in the operations of the Mississippi River. In 1879 the Mississippi River Commission was formed as an advisory body to help solve the problems hindering navigation along the river. In its original mandate, the Mississippi River Commission was specifically prohibited from dealing with the flood issue at all. Any federal funds that were allocated to the commission or to local governments for construction on the levees were to be used only for navigational purposes (Cowdrey 1977, 25). This lasted until 1928 when Coolidge signed into effect a flood control act that transferred complete control and fiscal responsibility to the federal government (Barry 1997, 406-7).

The official reasons that were used to justify the federal control of the Mississippi River flood protection were 1) river trade is a public good and it cannot exist without the support of the people who live along the river and 2) “the levee system is only as good as its weakest link” and all districts could not afford the costs of building levees high enough to withstand the biggest floods and 3) the technical nature of the task required a single actor in order to insure that “local considerations” did not hinder the ability of
engineers to accomplish it. However, those in favor of centralized control failed to anticipate the problems that human nature would cause.

A public choice analysis of bureaucracy points to several reasons why the centralized control of flood protection along the Mississippi River may have unintended consequences. Specifically, the US Army Corps of Engineers faces inherent difficulties because of its existence as a bureaucracy: over-confidence in science over experience, information distortions and coordination problems. These difficulties, in light of the Hurricane Katrina disaster, should encourage questions concerning the bureaucratic management of flood protection.

This paper will proceed as follows. Section 4.2 will examine efficiency arguments for centralized control and Section 4.3 will examine the potential for government failure. Section 4.4 will analyze the disaster of hurricane Katrina with these problems in mind. Section 4.5 will conclude.

### 3.2 Efficiency Matters

Matters of public policy should be decided on the grounds of what is the most effective. However, there is often little ability to make a definitive judgment on whether an alternative policy would have produced better results. However, we can examine the arguments for various types of flood control in terms of economic efficiency. In this section we will examine the arguments that economic efficiency makes for and against centralized control of flood management.

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18 See Delano (1928), Haupt (1904), Jadwin (1928) and Morgan (1929).
A. Efficiency of Centralization

The idea that in order to insure adequate flood protection along the Mississippi River the project needed to be considered as a whole was responsible for the shift to federal control. The reasoning that some local governments should not be punished because of other areas’ inability to adequately fund the building and maintenance of levees was a powerful reason for placing control in the hands of a single body. If it had been true that the levee system was in fact one system and that any breach could affect all areas along the river it would have been an undeniable reason for federal control. However, the actual situation is that floodplains are distinct and quite easily determined. If a levee breaks along the river it will cause flooding in more than the immediate area, but exactly where is determined by the geography of the land.\(^\text{19}\)

The separate nature of the floodplains along the Mississippi River effectively eliminates this argument for federal control. However, there are externalities present in the production of flood protection along the river. As one local government erects a levee, the amount of water that is held by the river increases. For this reason, the decision for one area to build a levee does not take into account the full costs of the project, as the increased necessity for flood protection in other areas will not be included. Likewise, the valuation of an outlet, reservoir or spillway that would not only benefit the immediate area but areas downriver as well would not include the benefit to those other areas.

\(^{19}\) There is evidence that locals knew well where levee breaks would affect them and where they wouldn’t. The description that Barry (1997) gives of the thoughts of the residents of Greenville, MS on the eve of the 1927 flood indicates that they knew where the levees upriver should break in order to give them a respite and where it would simply flood the city from the “backdoor.”
The presence of these externalities suggests that in rating the relative merits of the different forms of flood protection levees would be oversupplied by local governments and other measures undersupplied. The over-use of levees caused by local governments discounting the effects on areas downriver was the area where federal control should have had the greatest positive effect. However, levee heights have continued to increase, resulting in greater flooding with less provocation.
Throughout the years since federal control began the flood damages have tended to increase. One report estimates that the average yearly damages caused by flooding on the Mississippi River exceed $6 billion, which is four times the average in 1900 (Galloway 2004, 3). The damages depicted in Figure 5 indicate an increase in both average and extreme damages since 1900.20

While some of this increase is undoubtedly due to an increase in population and economic value along the river, some must be due to the increased frequency and severity of flooding. The reason for the increase in floods over the last three centuries is the higher flood stage caused by increased use of levees.21 For example, the flood of 1973 was called a 200-year flood though the volume of water that the river carried broke no records and was hardly significant (Belt 1975, 1).

B. Inefficiency of Centralization

There is also reason to suggest that local control of flood protection may be the most efficient: fiscal equivalence. The principle of fiscal equivalence is simply that the population voting on and financing a public good should be the same as that affected by its provision or the quantity provided will not be the efficient quantity. What makes the Mississippi case difficult is that the population along its banks is viewed as a single group when in terms of flood protection there are several.

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21 Recall that the primary efficiency-based reason for centralization of flood management was a decreased reliance on levees.
At first glance it is obvious that individuals living on opposite sides of the river should not be considered in the same group as the action that benefits one often directly harms the other. If the levees break on one side of the river the other side is assured that its levees will hold due to the decreased pressure. The divisions are even more complex than that, however. The geography of the Mississippi River Valley divides the areas along the banks of the river into separate floodplains, meaning that a levee break in a particular place will flood a specific geographical area. The relevant group in terms of fiscal equivalence consists of individuals owning property within a specific floodplain, not those along the river in general.

The consequences for violating the principle of fiscal equivalence fall into two categories: efficiency and incompatible incentives (Tullock 1969). The efficiency problems that arise out of the violation of fiscal equivalence come from the fact that when the voting population is not the same as the affected population, there will be individuals who have a part in the decision (and more importantly who will be asked to pay) who do not value the public good in question. The result is that the public good will be either over or under provided depending on the relative strength of the block of individuals who make up the affected group (Olson 1969, 483). If the group is a minority that is unable to force its will the good will be under-funded. If, however, the group is either the majority or a minority with some power, the good will be over-funded as the

22 This truth is all too obvious in the policies of some officials in charge of flood control for particular areas. One such official made it a rule that the levees in his areas should be exactly three feet higher than any adjacent area, thereby insuring that the breach would not occur in his location but in another!
affected group will demand more because they face only a fraction of the cost (ibid., 482).

The violation of fiscal equivalence also means that the incentives of the decision-makers are not aligned with those of the affected population. The issue of political feasibility is only one way in which the incentives of politicians and bureaucrats will not align with those they are meant to serve. Local politicians’ incentives are more likely to align with the affected individuals than federal politicians because local officials face greater political costs and they are landowners in the affected areas themselves.

Economic efficiency criteria are generally assumed to operate with a perfect world where citizens are always rational and politicians are always angels. The most significant advance of public choice economics has been drawing out the implications of a more realistic view of human nature. In this more real world it is as important to analyze the effects of potential government failure as market failure. As Buchanan argues in his case for competitive federalism, the public choice implications of central control can outweigh any benefits from economic efficiency (Buchanan [1995] 2001, 67-78).

3.3 Government Failure

Even if economic efficiency were to argue for centralized control another dimension of the problem must be taken into account before such a course can be recommended. That is the apparatus in place to carry out governmental decisions; bureaucracy. The problems with bureaucratic decision-making are well known. However, any task that is completed through collective action as opposed to individual private action must involve

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23 On this point see also Olson (1969), Ostrom (1953) and Ostrom et al (1961).
this institutional structure. The particular problems of bureaucracies that are cause for concern in flood management are: over-confidence in science at the expense of experience, information distortion and inability to coordinate complex tasks.

A. “Faith” in Science

One of the most serious problems with bureaucratic management comes from the tendency to undertake massive projects the consequences of which are usually unknown. This tendency comes from the combination of bureaucratic incentives and state authority and funding.\textsuperscript{24} Since the rewards to an individual working within a bureaucracy are usually tied to his budget as well as the number of his subordinates he has an incentive to seek larger and more costly projects (Buchanan [1971] 2001, 34). Combine this with the over-confidence in scientific theories that is typical of technocrats and the results can be disastrous.

The faith in specific scientific theory causes problems when the knowledge is not sufficient to the task as most often happens on large-scale projects. The results of these engineering projects tend to be magnificent, whether successes or failures. This because a central government has the budget and authority to carry out large projects that are generally experimental in nature. This willingness to take huge risks in the name of science was certainly evident in the debate over control of the river and, as we will discuss later, was responsible for great tragedy.

\textsuperscript{24} Buchanan ([1971] 2001, 33-35) emphasizes the possibility of government failure even in the face of economic efficiency arguments due to bureaucratic incentives.
From its inception, the Mississippi River Commission planned to strengthen the levee system both as a method of flood protection and to aid navigation. By shoring up the levees the river would be confined to a smaller area increasing the force of its flow. The theory touted by the Commission (against the advice of the most prominent engineers of the time) was that the increased force would scour the bottom of the river creating a deeper bed, thus smoother navigation and decreased flood heights. The second part of this plan was to close all of the natural outlets for the same reasons. This would prove to be an unmitigated disaster.

The closing of the first major outlet of the river was at Cypress Creek in 1921 (Barry 1997, 160). The first test of the policy came only in 1922. While all of the levees built to commission standards had held, flood levels were dangerously high and 70 000 people were left homeless. The Corps clung to the fact that the levees that failed were not substandard, and thus continued its policy of strengthening the levees and closing outlets (ibid., 166).

While the Corps was claiming victory, several prominent engineers were worried. James Kemper noted that while the flood of 1922 had broken no records in areas above the Cypress Creek outlet, it had broken all of them below it (ibid., 166). This did not bode well for a great flood, as had occurred several times in the 19th century. In fact, the misgivings of Kemper would prove correct only 5 years later. In 1927, the Mississippi River valley would see a flood that would finally convince the Mississippi River Commission that its policies were flawed. Unfortunately, thousands were killed, more
than 200,000 left homeless and billions of dollars in damage had to come before they admitted their error.

B. Lack of Information

The bureaucratic tendency to favor large-scale projects based on “fad” scientific theory was recognized by both Gordon Tullock and James C. Scott. Gordon Tullock (2005 [1965]), in his work *Bureaucracy*, focuses on how the need to please his superior affects the decision-making of the subordinate as it relates to the relaying of information. All of the decisions of the subordinate are made in order to please his superior because that individual generally represents his only means of advancement (ibid., 58).

The “politician,” as Tullock names him, decides what information to relay to his superior as well as what course of action to recommend, based on what he believes his superior wants to hear (ibid., 58). Since the superior’s time is limited it is unwise, as well as impossible, for the politician to try and relay all of the information that he knows about a given topic to his superior. Therefore, he attempts to only provide information that is readily and easily explained (ibid., 75). The result is a top-down flow of information in which the superior rarely learns anything that contradicts his previously formed opinion (ibid., 76).

Scott (1998) identifies a tendency for large government engineering projects to ignore local knowledge, or rules of thumb, in favor of scientific expertise despite the

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25 This provides a clear rationale for relying on fad science. Such theories are generally well-known within the relevant community. Therefore if the politician needs to justify his decision it is easier to justify it in terms of the well-known theory rather than the particulars of a given situation.
experience of those involved. The utilization of local knowledge is a factor that is often overlooked in the analysis of political structures but that has a significant impact. There are two chief effects of the top-down information flow: uninformed decision-making and standardization.

When a good is provided through a collective or political process a certain amount of compromise and standardization is necessary because instead of each individual tailoring their consumption to their preferences, only one decision can be made for all. In this case, the smaller and better differentiated the collective is, the less need for compromise and the less wasteful is the production of the good in question. As far as flood protection along the Mississippi River goes, this is especially true because of the effect that individual areas’ levee building has on other areas.

Consider what it means that there are likely differences in the desired level of flood protection along the river. First, it is unlikely that the optimum level of flooding is zero. For a variety of reasons including land values, inherent risks and individual valuations, different groups along the river will demand different levels of flood protection. These differences could play an important role in countering the effects of the negative externalities of levees. Those areas with the highest demand for flood protection would have the highest levees. In the case of a flood area whose landowners value their land marginally less would flood first decreasing the need for higher levees downriver and creating a system of emergency flood protection that would be capitalized in land values. A standardized application of levee heights makes this impossible.
C. Failure to Coordinate

The primary difficulty of coordination within a hierarchical bureaucratic structure is that the superiors both cannot make all of the decisions and cannot allow their inferiors to make them (Tullock [1965] 2005, 208). This is especially true in tasks of great coordination. If one division must coordinate with and the officials are at the same level they must agree or pass the decision up to a superior. This “passing up” must continue until either agreement is reached or the decision is in one official’s jurisdiction. In other words, the decision must go higher into the hierarchy until its agreement is “internalized” (ibid., 163).

This necessarily places great limits on the amount of internal coordination that is possible (ibid., 136). These limits are largely determined by the complexity of the task. Flood protection, particularly along the Mississippi River is an extremely complex task. The hierarchical structure of the US Army Corps of Engineers makes coordination difficult if not possible to achieve. This may be another reason why such emphasis is placed on standardization.

These particular difficulties with bureaucratic management place strain on the task of flood protection in normal times. When faced with an event like Hurricane Katrina it is no wonder that the US Army Corps of Engineers would show its weaknesses. However, it is important to remember that any form of management would face difficulties when confronting an unusual event. For this reason, the next section will attempt to investigate only those failures that could be predicted by the particular problems of bureaucratic management.
3.4 Hurricane Katrina: A Case Study

Hurricane Katrina was a unique storm in many ways. To begin with, despite its location, New Orleans had only been hit by a few major storms in the 20th century. It has been flooded only a few more times, the most notable of those being Betsy in 1965 (IPET 1, 25). Although Katrina was only a Category 3 when it made landfall, the storm surge and waves were the largest to strike North America in recorded history (1, 32). In light of the unprecedented intensity of this storm it is not surprising that portions of the Hurricane Protection System (HPS) failed to perform as designed.

Hurricane Katrina devastated the HPS. There were over fifty major breaches of which four were caused by foundation failures with the rest being a result of overtopping and resulting scour (1, 41). This resulted in almost 80% of the New Orleans metropolitan area to be inundated and to remain so for 53 days (1, 48). It is estimated that if there had been no breaches and the pumps had been working the damage would have been about one third of the actual damages (1, 51). The fact that levees and floodwalls were breached is not in itself a failure of the US Army Corps of Engineers as a bureaucracy qua bureaucracy. However, it appears that several of the reasons for the breaches can be attributed to problems that inherently characterize centralized bureaucratic control.

The immediate cause of the breaches was overtopping, water levels reaching over the height of the levees, in most cases. Only four of the 50 breaches were the result of foundation failure. In the case of those levees that breached due to overtopping, as the

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26 The data for this case study was drawn primarily from the Interagency Performance Evaluation Task Force’s *Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System*, released March 2007. In the future the report will be referred to as IPET and all page references will be to this publication unless otherwise noted.
waves crested over the levees the pressure created extreme velocities on the unprotected side of the levees. This scoured the back of the levee effectively undermining it from the protected side. The four floodwalls that breached due to foundation failure all experienced wall deflection, the pressure from the water was able to push the wall over slightly. This opened cracks at the foundation, which allowed water to scour the levee from underneath (1, 41-46).

The ultimate reasons for these breaches span the entire planning and building of the HPS. Furthermore, many of the mistakes that were made can be attributed to characteristics inherent to centralized bureaucratic agencies. Specifically, problems due to the over-confidence in scientific theory, information distortions and coordination difficulties are evident during the entire process.

A. “Faith” in Science

Scott (1998) describes a “faith” in science to mean overconfidence in the predictions of scientific theory that has not been tested. This exactly characterizes much of the design of the New Orleans Hurricane Protection System. Two reasons for the breaches were particularly tied to this phenomenon: a too-risky I-wall design and a lack of protection for overtopped levees.

The I-wall design in itself has been particularly maligned in the media as an unnecessary risk in the construction of floodwalls (Warrick and Grunwald 2005, 1). However, some I-walls performed well despite receiving the same treatment as others that failed. A particularly striking example was the Orleans Canal I-walls which were
located near the 17th Street and London Canals, two of the canals that breached due to foundation failure. The major difference in the design of these floodwalls was a more conservative estimate of wall strength as well as soil strength beneath the wall (1, 47).

In other words, the design of the I-wall structures that collapsed left less room for unforeseen circumstances in the calculations. This same phenomenon was present in the design of the levees and floodwalls in general. They were designed to hold up to a certain water level but if they were overtopped they became extremely vulnerable to scour and failure (1, 29). This meant that there was no allowance for mistake in determining levee height.27

The overly precise measurements meant that small differences between projected conditions and actual conditions resulted in levee failure. The most striking example of this is the issue of wave periods. The predicted wave heights were generally accurate to within a few feet. However, the waves were considerably longer in duration due to the fact that they were generated in the ocean as opposed to on the lake from hurricane winds. This difference was enough to cause the deflection in the I-walls, which led to their collapse (1, 40).

Throughout the entire process overly ambitious estimates were used for the design and construction of the levees and floodwalls, despite available information. As was stated in the IPET report, “… the sheer strength of the clay soils under the 17th Street Canal levee and floodwall assumed for design were higher than warranted from the

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27 Unfortunately, as we will discuss later there were many mistakes in determining and implementing levee height.
measured data available at the time,” (1, 62). This misuse of information brings us to the next issue with bureaucratic management: information distortion.

B. Who Knew What?

Another problem endemic to bureaucracies is information distortion. Tullock ([1965] 2005) identifies how the incentives of bureau employees preclude the efficient sharing of information with their superiors. This combined with the fact that much of the decision-making is centralized basically insure that those making the decisions will not have adequate information. This was a severe problem for the US Army Corps of Engineers in two key areas: construction of levees and floodwalls to appropriate heights and predicting potential problems.

Recall that out of 50 breached floodwalls and levees, 46 of those were caused by overtopping and resulting scour. It appears that the levees were designed too low. However, the more startling fact is that many of the levees were in reality lower than they were designed to be. This was due partly to subsistence, sinking of the sandy soil beneath the levees, and partly because levees weren’t completed. However, a large part was due to the fact that designers used incorrect information about the height of sea-level when designing the levees (1, 24).

Many of the levees were as much as two feet below the designed height because of simple failure to accurately collect and relay information (1, 31). Unfortunately, there was no room for error within the calculations. Since the levees were not meant to hold if they were over-topped the fact that the levees were lower than designed was an extremely
serious issue. As we will see later, this lack of coordination was representative of the entire effort.

Another place that information distortions caused major failures were in the floodwalls that experienced foundation failure. As early as the 1980s, before much of the construction of those failed canals, Corps engineers had knowledge of both the possibility of deflection in the construction materials used in the floodwalls as well as the problems associated with gaps forming in conjunction with such structures (1, 74). However, as this research was not directly related to levees and floodwalls its implications were not brought to bear on the ongoing levee construction.

As is generally the case, each instance of failure is a result of more than one problem. In the case of the unused information regarding the vulnerability of floodwalls to foundation failure, it is obviously more than simply a perverse incentive structure. This factor in the breakdown of the New Orleans HPS was also the result of the inability to coordinate, a typical failing of bureaucratic agencies.

C. Coordination?

One of the most-used justifications for centralized control is the need to coordinate activities. Ironically, coordination is one of the things that bureaucracies do worst. The HPS is an extremely complex system from almost any perspective. Not only is there sharing of funding responsibility among federal state and local agencies. There is also sharing of operating and constructing responsibility. The geology of the area is characterized by extreme variation requiring specific knowledge for almost every
decision (1, 62). And if one component of the system is not functioning it puts unbearable strain on the other components.

The obvious solution to this problem is to allow decentralized decision-making. However, bureaucratic incentives do not allow for superiors to feel confident that their subordinates will make the decisions that they would in a given situation. This leaves a disjointed system with each portion making its own decisions and only partly coordinating with other parts. This was especially evident in two instances: design criteria and transition points.

The HPS was designed to withstand certain levels of wind, rain and waves associated with a particular representative hurricane known as the Steady-State Potential Hurricane or SPH (1, 26). The SPH was originally designed after Hurricane Betsy in 1965 from hurricane data from 1900 to 1956. In 1979, it was significantly revised to take into account more recent data, recommending stronger designs. However, this revision was only taken into account on two portions of the HPS. The Lake Ponchartrain and Orleans portions, the system that was to protect the lower ninth ward, continued to use the criteria from the 1965 SPH despite the fact that construction would not even begin on most of its floodwalls until 1992. This is an almost unbelievable failure of coordination.

Another particularly devastating coordination failure was in the transitions in levees and floodwalls. Many of the weak points were transitions between the defenses operated by different divisions (1, 66). While it is obviously difficult to coordinate such a massive and complex system, this particular inability seems to be an example out of Tullock’s book. The need to make so many specific decisions based on specific
information was beyond the ability of the decision-makers in charge. However, the structure of the organization required them to do it anyway. The result was that many decisions were made haphazardly and nothing was coordinated.

4.5 Conclusion

While it is impossible to guess how a local or decentralized flood management scheme would have performed over the last 75 years, the arguments in this paper suggest that the previous belief in centralization was unfounded. The problems characterized by bureaucratic management, over-confidence in scientific theory, information distortion and lack of coordination, will be evident whenever a good is provided through political or collective means. The one thing that should be put into focus with the advent of Hurricane Katrina is that the devastation of 2005 will not be the last great flood. Just as the flood of 1913 was not or that of 1927, or 1973 or 1993 if the provision of flood protection remains in the hands of an enormous federal government bureaucracy. History has not shown the US Army Corps of Engineers to be particularly successful at preventing disaster. Perhaps it is time we consider other options.
4 Decline Before Crisis: The Effect of Long-term Decline on New Orleans’ Recovery

4.1 Introduction

Since Hurricane Katrina flooded the city of New Orleans in August of 2005, expectations for the city’s recovery have varied wildly. Two weeks after the storm New Orleans’ Mayor Ray Nagin and other political leaders were optimistic and hopeful for a speedy recovery as they began to allow residents to return to the city (Fox 2005). Only three weeks later, however, recovery expectations had fallen as the Mayor was forced to lay off 3000 municipal employees (Riccardi and Zucchino 2005).

The progress of recovery efforts has also been unsteady. One year after the storm, the city of New Orleans had regained only 50% of its population while the metro area had regained only 76% of its population.\footnote{Post-Katrina population estimates are provided by the Brookings Institution’s Report, The Index of New Orleans. The estimates are based on residents actively receiving mail at the referenced dates.} Population growth was rapid in the second year following the storm with New Orleans increasing to 69% and metro area increasing to nearly 83% of their respective pre-Katrina populations. However, recovery slowed dramatically in the third year, as population growth slowed to just 3%. By August 2008, three years after the storm, New Orleans had regained only 72% of its population while the greater New Orleans area has regained approximately 87% of its population. This trend has continued, with the latest reports showing less than a 2% growth rate in the last
6 months. In modern times it is rare that a city ever completely dies. However, the speed and nature of New Orleans recovery is very much in doubt.

The process of urban growth and decline is conceptually related to the process of recovery. In order for a city to recover from disaster it must induce residents and businesses that left temporarily to return as well as attract replacements for those who choose not to return. Those factors that create the incentive to return to a city after disaster are essentially the same as those that created urban growth initially; urban and locational economies, employment opportunities, the public service/tax package. For this reason, trends that existed before the disaster are likely to continue, often accelerated, in the recovery period.

The city of New Orleans was being destroyed long before Hurricane Katrina scoured the Gulf Coast. New Orleans has been losing population since 1960. A city in decline has certain characteristics that create unique challenges following a crisis. Population and income decline create a situation where tax revenues are decreasing at the same time that demand for public services is increasing. Deteriorating infrastructure, housing and public facilities inhibit the initial response and make the recovery more difficult. Finally, a history of poor governance is likely to carry over into the recovery effort creating a tendency for a return to pre-disaster trends.

Each of these factors is at work in New Orleans, accounting in part for its slow and uncertain recovery. This chapter will analyze the effects of pre-disaster decline on the potential recovery of the city of New Orleans. Section 4.2 will provide a general

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analysis of disaster recovery. Sections 4.3, 4.4 and 4.5 will look at the relationship between population loss, inadequate public services and poor governance, respectively and recovery. Section 4.6 will conclude.

4.2 Challenges for Recovery

While it is indeed rare for a city to disappear or be relocated after a disaster, the nature and extent of recovery can vary greatly. In Hass, et al’s (1977) comprehensive study of disaster recovery, *Reconstruction Following Disaster*, research indicates that the rebuilding of a city following disaster can take between 2 and 10 years depending on the extent of the damages, pre-disaster trends, resources available and leadership (ibid., 1). Besides these indicators, there appears to be a direct relationship between the time it takes for a city to return to normal levels of population and commerce and the amount of time that it takes to get the initial crisis under control (ibid., 19).30

The authors postulate that the reason for the relationship is that the length of the emergency period is determined by the extent of the damages and the resources available for response. However, there is an aspect of urban recovery that is not discussed in the study that could provide an additional reason for the relationship. Urban recovery is as much a matter of coordination as it is a matter of the extent of the damages or the characteristics of the city.

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30 Hass et al (1977) divide the recovery of a city following disaster into four sequential periods; the *emergency period* is characterized by a cessation of normal activities and is considered to be over with a drastic reduction in emergency housing and feeding, the *restoration period* is characterized by repairing housing and infrastructure that can be repaired and a return of population that will return, the *replacement reconstruction* period is characterized by returning the city’s population, commerce and capital stock to pre-disaster levels and the *commemorative reconstruction* period is characterized by commemorating the loss and concentrating on future growth (ibid., 2-3).
The decision to return to or remain in a city after disaster can be represented as a coordination dilemma. The benefits that an individual can expect to accrue from a decision to return to the affected city are determined in part by the number of people that he expects to return. The more people that return, the greater the economic activity the greater the employment, the lower the average costs of supplying public services, etc. These agglomeration externalities create the potential for multiple equilibria. The
expectations of individuals determine whether the city’s population returns immediately or if it takes much longer.

The coordination aspect of population recovery after disaster is represented in Figure 6. In this depiction, the Return decision is a positive function of the expected population as well as other factors such as community ties, locational benefits etc. The return function is initially flat indicating a portion of the population that would be willing to return even if no one else did, followed by a section that is rapidly increasing as the benefits of urbanization begin to accrue and finally slowing down as diminishing returns set in.

The greater an individual’s expectations regarding others’ decision to return, the more benefit he sees in returning. However, if his expectations were faulty he will adjust his return decision in order to account for his new expectations. The 45° line illustrates the points where the individuals expectations were correct and therefore where his decision requires no adjustment. The other sections of the return function are unstable; any initial point that does not intersect with the 45° line will result in movement along the curve.

Notice in this figure that there are two stable equilibriums corresponding to two different levels of population; point (A) is an equilibrium with low population recovery and point (B) is an equilibrium with high population recovery. The relevant equilibrium point is determined by the initial population level. If initial population return is higher than point (C) those who return will find that the actual population is higher than they expected, this will result in the adjustment of expectations upward and will draw more
individuals to return. This process will continue until (B) is reached. However, if the initial population recovery is below (C), those individuals who returned will find that there are fewer people returning than they expected and will revise their expectations downward. This will result fewer people returning as well as some people leaving who initially returned. This process will continue until (A).

The importance of expectations in this initial population response cannot be overestimated, however it is not the only factor. There are at least two other factors that play a large role; the opportunity cost of returning and the locational benefits offered by the city. If the city has advantages such as an ocean port or railroad crossings more people will want to return regardless of what they believe others will do.

However, the longer that it takes to bring the city back into working order the higher the opportunity costs of returning. Individuals who evacuated the city can only live on savings and the help of the government for a limited time before they must find a new source of permanent income and permanent living arrangements. The longer the emergency period lasts, the higher the greater the number of people who have made investments in new communities.

There are therefore, three distinct factors that can impact the speed of recovery; speed of initial response and restoration, relative locational benefits and the expectations of residents. This chapter investigates how the prevailing trends in New Orleans before Katrina affect its recovery through their impact on the speed of response, locational benefits and expectations.
4.3 Population and Opportunity Costs

The recovery of a city after disaster depends on individuals wanting to return. This location decision is conceptually similar to any urban location decision. There are underlying benefits such as access to transportation routes, ports, vistas etc. that give the location advantages over other potential urban locations. There are also benefits that accrue simply because it is already heavily populated; low average tax rate, employment opportunities, cultural activities. Working against those benefits are the costs of congestion, crime and high real estate prices.

The decision to return after a disaster is similar except that the locational benefits include community ties, history and professional networks and the costs include the effects of the disaster itself as well as uncertainty with regards to the future state of the city. For this reason it is reasonable to look at New Orleans’ ability to draw residents before the storm as an indicator of its ability to recover after the storm. New Orleans’ history of urban decline has had an impact on its underlying attractiveness as an urban center and on residents’ expectations.

Urban decline is characterized by the presence of several factors, among them being declining population, per capita income, tax revenue, public services and infrastructure, housing stock and rising crime, joblessness and percentage of high school drop outs. Each of these factors helps to contribute to the downward spiral that Gunnar Myrdal (1944) deemed the vicious circle in his influential study, *An American Dilemma*. Whereby the decline of one factor decreases the desirability of living in the urban center,
which leads to further decline. These characteristics create unique challenges to a city after a major disaster.

A. Population Loss and Urban Decline

While population loss is primarily the result of urban decline, it also sets into motion forces that lead to further population loss. In other words, once population loss has begun there are often enough self-reinforcing factors to ensure that it continues. In the context of this analysis, population loss plays two roles; it is an indication of the troubles that New Orleans was having before Hurricane Katrina and it is a major obstacle to New Orleans’ recovery. In order to analyze the effects of population loss on New Orleans recovery, it is necessary to first look to the effects that population loss had on the city before the hurricane.

Urban economics tells us that cities exist because of agglomeration economies. There are economic benefits available to firms that locate near other firms known as agglomeration economies. A specific type of agglomeration economies, urbanization economies, provides the economic rationale for the existence of large diverse cities. Not only are there benefits for like firms to locate near each other, there are also benefits for different firms to locate near each other. Input sharing, labor pooling, labor matching, knowledge spillovers, joint labor supply, learning opportunities and social opportunities.

The result of these agglomeration economies is that firms are more productive when located in larger cities. Subsequently, workers are more productive in larger cities and thus are able to earn higher wages. It is estimated that the elasticity of productivity to
population is between .03 and .08 (Rosenthal and Strange 2004). Meaning that a 10% increase in population would increase output per worker by between .3% and .8%. Doubling the population would increase output per worker by between 3% and 8%.

Population size itself has an effect on firm and worker productivity, output and therefore economic growth. It follows then that population loss decreases productivity and output and causes economic decline. Regardless of its ultimate cause, population loss in itself makes cities less attractive places to locate. There is a feedback loop so that population loss generates the forces for further population loss.

Another factor helping to sustain a downward spiral is the financial consequences of population loss. Higher populations mean that the average tax burden can be lower while the average level of public services is higher. Since there are fixed costs in the provision of many public services a higher population will mean a lower average cost of producing them. This means that cities with higher populations can afford to provide more public services at lower tax rates. If a city is losing population, its tax rates must increase or its services must decrease in order to maintain a balanced budget (Chernick and Reschovsky 1997, 132).

There is also a tendency for cities facing population loss to experience declining income per capita. As locating in the city becomes less valuable, real estate values fall. This tends to encourage lower income individuals to migrate to the city. Those who leave are generally the middle-income individuals. This has two effects. One, it decreases tax revenues because poor individuals generate less taxes. Two, it increases the demand for, and often the cost of providing, public services. Therefore, city
governments are faced with consistently declining revenues and higher costs. This forces the city to try and make up the difference by reducing services or raising taxes, which of course will lead to further population loss (ibid., 147). The result is an urban center that is declining in attractiveness relative to its suburbs and to other urban centers. Such a problems would only be compounded by disaster.

B. Population Loss and Crisis

Along with the rest of the urban centers in America, New Orleans has been losing population since the 1960’s. However, unlike the rest of urban America, it did not mount a recovery in the 1990s. New Orleans population loss continued through the 1990’s, although at a reduced pace, and accelerated again after the turn of the century. According to US Census Bureau estimates New Orleans population was just 452,170 in July 2005. This was a loss of over 30,000 since 2000, a loss of almost 7%.\(^{31}\)

Hurricane Katrina devastated New Orleans’ population. In July 2006 the census bureau estimated the population of New Orleans to be just 223,388 a loss of over 50% from pre-Katrina levels. As of January 2009 New Orleans had regained only 73.7% of its population. Furthermore, growth in the last year has slowed dramatically to just under 3%. New Orleans’ trouble regaining population may be related to its history of urban decline.

The population of a city tends to churn, with many people moving in and out. At any given time there are people inside the city who would like to move out if moving were

\(^{31}\) Data taken from, *Table 1: Annual Estimates of the Population for Counties of Louisiana: April 1, 2000 to July 1, 2006 (CO-EST2006-01-22)* Source: Population Division, U.S. Census Bureau Release Date: March 22, 2007
free. Likewise, there are people outside the city who would like to move in if moving were free. In a growing city, the population who would like to move in is generally greater than the population than would like to move out because the expected benefit of living in the city is increasing. However, in a declining city, the expected benefit of living in the city is falling. Therefore, the population that would like to move out is greater than those who would like to move in.

When a disaster strikes a declining city two things happen to change this equation; people are forced to move, at least temporarily, transforming the transactions costs of moving into sunk costs, and the expected benefit of living in the city for the near future drop. The first effect basically accelerates the decline. The people inside the city who were staying because of transactions costs leave, while the people outside the city who were not coming because of transactions costs stay away. This means that when the population stabilizes it will seem to have skipped ahead in the population loss trend.

The second effect operates primarily on the residents’ expectations regarding others’ decisions to return to the city. When disaster strikes a growing city, individuals expect others to return because of the benefits of locating there. Positive expectations reinforce growth trends leading to a quick population recovery. However in a declining city, residents are unsure whether others’ will want to return. This can lead to more cautious return decisions. Lower levels of initial return can lead to a downward spiral resulting in a low level of population recovery.

In light of this analysis, it is not so strange that New Orleans’ population recovery started moderately and then slowed. It took over a month for the floodwaters to fully
recede from New Orleans. It took a month to six weeks before most residents were even allowed back into the city to inspect their homes (Whoriskey and Hsu 2005). And even when they were allowed to return most considered the condition of the city unlivable. In January 2006 only 5% of New Orleans schools were operating. The slowness of recovery and uncertainty that characterized the situation in New Orleans after Katrina had major short-term and long-term effects on the ability of the city to rebound.

In the short-term, the length of the delay before residents were able to return or even begin to make plans for their future increased the opportunity costs of returning to the city. Evacuees who were living in other cities had to begin to find employment, permanent housing and schools for their children. Once those kinds of investments are made, it was more costly for individuals to return to New Orleans. Another factor that may have worsened New Orleans’ chances at a quick population recovery was the uncertainty that existed for months after the storm. Six months after hurricane Katrina struck, homeowners were still not rebuilding, primarily because of uncertainty regarding neighborhood planning, levee strength and housing aid.

New Orleans’ residents, unsure of the future of their city, delayed making their return decisions. With coordination of expectations being such a large factor in the long-term recovery of the city, these delays become the catalyst for a downward trend in expectations. A small group of people that chooses to remain in their evacuation city

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32 Data taken from Brookings Institute report. *Katrina Index.*

33 The reasons stated for lack of rebuilding come from a report on the Katrina Index from the Brookings Institute. The report can be found at http://www.brookings.edu/metro/pubs/200603_KatrinaIndexes.pdf
may be enough to tip the return decisions of others and push the rebound population to
the lower equilibrium.

Furthermore, government response to the plight of displaced homeowners may have
unintentionally contributed to the slow population return. The city of Houston gave
vouchers for one year’s worth of housing and food to displaced New Orleans residents
(Berger 2005). In an effort to coordinate residents’ return to New Orleans, the state of
Louisiana initiated The Road Home program.\textsuperscript{34} The Road Home provides up to $150,000
per family to rebuild or relocate to another home in Louisiana. The program is meant to
cover the considerable transactions costs of returning to New Orleans. However, the
program has had limited success, failing to give out over 25% of its allocated budget.\textsuperscript{35}

Allowing residents to use the money to return to other Louisiana cities could have had
an adverse effect on individuals’ expectations regarding the future of New Orleans.
Combined with the relatively modest immediate recovery (only 16% in the first year) and
other factors relating to the time lapse before residents were allowed to return and inspect
their property these policies led to downward trending expectations.\textsuperscript{36} These declining
expectations create the conditions for slow future population growth. As New Orleans
continues to struggle with the logistic and financial strains of disaster recovery, it will
have much further to go than a city that was growing before the disaster.

\textbf{4.4 Public Services}

\textsuperscript{34} All information regarding The Road Home is found on the official website: http://www.road2la.org/
\textsuperscript{35} The Road Home Program has been criticized for lack of transparency and difficulty meeting
requirements.
\textsuperscript{36} Another factor, the length of time it took for residents to be given permission to return, will be addressed
in section 4.
While all levels of government are responsible for the funding of public goods and services, local governments are generally responsible for spending the funds. This arrangement helps to provide some discipline in the form of competition from other local governments. Cities are relied upon to provide basic utilities such as trash collection, water and sewerage services and road maintenance as well as crime prevention, schooling, public grounds, housing for the poor, emergency services and so on. The city government’s ability to provide these services at a reasonable tax affects its ability to attract residents.

Public services, therefore, play a major role in the rebuilding of a city after crisis, both in terms of responding effectively to the crisis in a timely manner and in enticing residents to return after the disaster. In declining cities, the generally poor state of the public services mean that the city will have a difficult time responding to the disaster and a difficult time competing for residents after the disaster. To see the mechanism at work it is necessary to first look at the relationship between public services and urban decline.

A. Public services and Urban decline

The relationship between a city’s ability to provide these services at reasonable levels for reasonable taxes and its ability to maintain its population in the face of competition from suburbs is, as with many of the issues discussed, multi-directional. Declining population has a negative impact on a city’s ability to provide public services to its residents. The high fixed costs in the provision of many public services mean rising average costs as a city loses population. Furthermore, if the city’s population becomes
more weighted toward the lower income per capita, it may become more expensive to provide public services.

These increasing financial pressures of population loss are compounded by the fact that cities often have intrinsically higher costs of producing public service due to the cost of maintaining old infrastructure. Chesnick and Reschovsky (1997, 138) identify three reasons why public service provision may cost more in cities than in suburbs\textsuperscript{37}; cost of servicing the poor (Bradbury et al 1984 and Ladd and Yinger 1989), the costs of aging infrastructure and the costs of providing services to nonresidents. This may be a reason why dilapidated infrastructure and failing public services are often cited as evidence of the crisis of urban decline (Weisbrod and Worthy 1997, 1; Bradbury, et al 1984; Ladd and Yinger 1989).

Helping to further the downward pressure on population is the fact that many residents choose to move based on the availability of public services that they value. Eberts and Stone (1992) find that workers accept lower wages in cities with better local infrastructure. Schools and crime being two of the major reasons cited for moving to a particular place. Given these negative feedback pressures a declining city finds itself increasingly unable to provide the kinds of public services that attract residents.

New Orleans record on the provision of public services is poor. New Orleans (Orleans Parish) per capita crime rate is generally much higher than its surrounding suburbs.\textsuperscript{38} Although crime rates have fallen dramatically over the last twenty years, New

\textsuperscript{37} In fact, this is the justification for many federal grant programs that exist to provide city governments with the means to provide public services in light of this imbalance.

\textsuperscript{38} Uniform Crime Reporting Program; http://www.disastercenter.com/crime/lacrime.htm
Orleans has higher violent crime and higher property crime than all of its suburbs.\textsuperscript{39} In 2004 New Orleans ranked 2\textsuperscript{nd} in terms of murders per capita in U.S. cities.\textsuperscript{40} In August 2005 New Orleans had more than 1600 police officers, 3.14 police officers per 1000 residents; less than half that of Washington DC.\textsuperscript{41} New Orleans police officials cited low pay as the main reason for difficulty recruiting.\textsuperscript{42}

In 2004 Orleans Parish ranked 67 out of 68 school districts in Louisiana.\textsuperscript{43} Orleans Parish public schools are one of only three school districts out of the 68 districts in Louisiana to rank as academically unacceptable according to national district performance scores. These scores are calculated using LEAP/GEE tests, the Iowa Tests, attendance and drop out data.

The water and sewage system doesn’t fair much better. The EPA mandated a plan to clean up the sewage in 1996 deemed necessary because of the age of the system and new environmental standards. The Consent Decree required by the EPA gives over 100 million in federal funds to rehabilitate the aging sewer system. All of which is at least 40 years old and much of it is over 100 years old\textsuperscript{44}.

These problems with public services are typical of urban centers, especially those that are facing decline. However, poor public services create serious obstacles for a city facing reconstruction. The time it takes to make the city habitable for residents is an important factor in determining the long-term consequences of the disaster.

\textsuperscript{39} The only exception being Tangipahoa Parish and that is because of its extremely small population.
\textsuperscript{40} Source: Morgan Quitno Press using data from F.B.I. "Crime in the United States 2004"
\textsuperscript{41} http://www.msnbc.msn.com/id/8999837/
\textsuperscript{42} In 2007 the state of Louisiana began supplementing New Orleans police officers’ salaries by $425/month or $5100/ year.
\textsuperscript{43} Source: www.psk12.com
\textsuperscript{44} http://www.swbno.org/history.asp
B. Public Services and Crisis

The impact of poor public services in New Orleans goes beyond contributing to a vicious cycle of decline. Low quality public services and crumbling infrastructure can have a large impact on the ability for a city to recover after disaster. The individual’s return vs. relocation decision depends in part on his expectations for the future of the city and on his relative costs and benefits of returning and relocating. The state of public services and infrastructure in a city can impact that decision by contributing to negative expectations and increasing the amount before residents can return.

Poor public services and neglected infrastructure can also make it more difficult to rebuild after the crisis. Without an attractive public services/tax package New Orleans will have a difficult time enticing businesses and residents to return. There are three key areas where the lack of previous investment in public goods will hinder the recovery of New Orleans: police and emergency services, utilities and infrastructure.

As of January 2007 police headquarters was still operating out of a FEMA trailer. The police department struggled to fill available positions, largely because of salary and morale. As of now, only 74% of the public schools have been re-opened. Only 19% of the buses are back in operation.\textsuperscript{45} Residents don’t trust the water and businesses worry about having to pay 80% higher bills. The cost of repairing the system is some 5.7 billion dollars. FEMA set to contribute more than $150 Million, but won’t pay for the whole thing because it only has to pay to bring it up to the state before the storm (Bohrer 2007).

\textsuperscript{45} Data taken from the Katrina Index August 2008.
Infrastructure also affects business recovery. The costs of doing business increase as long as the infrastructure remains unrepaired. Businesses that were able to hold out for some time after the storm are beginning to give up. As expectations of future recovery fall, business owners are adjusting their plans. Unfortunately, this makes the attraction of residents all the more difficult. The ever-lengthening recovery time is creating a negative feedback loop that threatens the ability of New Orleans to recover.

While the unsatisfactory state of public services in New Orleans has a major impact on the recovery and rebuilding effort it is in a very real way only a reflection of deeper problems in New Orleans. Part of the prevailing trends in a city that affect the likelihood of recovery is the quality of governance. Unfortunately, New Orleans fairs particularly poorly in this area as well.

4.5 Governance and Disaster

One of the most important aspects of a city’s economic performance is the governance. The quality of governance can affect a city’s ability to sustain growth, provide its residents with adequate public services and build a strong employment base. Governance plays a particularly influential role in speed of recovery and level of uncertainty that accompanies it.

A. Governance and Decline

Urban decline is generally blamed on the structural problems facing central cities. The crux of the problem is that cities may have a difficult time financing the public
services that residents demand making it difficult to compete with suburbs. However, central cities have some things that suburbs can never replicate, such as proximity to employment and cultural activities and many public services such as public transportation museums and universities. In fact, the primary reason to live in a suburb is to be near a city, implying that it is a second best option. How then do central cities become hollowed out; dominated by low-income populations and intense crime? The answer may be more than structural. It may lie in the governance of cities.

It is not difficult to imagine local governments making decisions that could contribute to decline. In fact, it is not necessary to imagine it at all. The history of American cities is replete with examples of government officials enriching themselves at the expense of the public, giving contracts to friends and making disastrous errors. The question is whether this kind of behavior is systematic enough to impact the economic health of the city. An analysis of the incentives of local government officials gives reason to believe that this type of behavior is systematic and potentially extremely detrimental to the economic wellbeing of a city and its residents.

The incentives facing government officials can lead to decline in two ways: it is directly in the interest of government officials to have a poorer population or it is not directly in the incentive of government officials to have a richer population. In the first instant, the local politician derives political power from the lower classes by providing them with government jobs and public services. In order to consolidate power he intentionally enacts policies that drive the upper and middle class residents from his jurisdiction. This is known as the Curley Effect, after an article by Glaeser and Shleifer
(2005). This has the impact of decreasing the level of commerce in the city but with the benefit of consolidating political power. The politician deems the tradeoff worthwhile, thereby courting urban decline.

In a less dramatic, and probably more likely scenario, the local politician simply has no incentive to govern well. The productivity of government services is notoriously difficult to measure making it difficult for residents to vote based on such productivity. National and state taxes make tax competition between local governments less important and the availability of federal grants provides revenues for many public services. Therefore, it is not necessary for politicians to forgo building the political capital that comes from awarding sweetheart deals or the personal capital from outright embezzlement and corruption.

The empirical literature gives us further reason to believe that local governments are generally not acting in the most effective manner possible. Many studies find that governments that face more competition have lower taxes and expenditures. Studies also find that when governments contract out more of their basic operations, costs go down. There is also evidence that governments with softer budget constraints tend to spend more. Taken together this literature suggests that local governments are not generally managing public services as effectively as they could.\textsuperscript{46}

\textsuperscript{46} It seems that declining cities and poor governance often go hand in hand. Specifically, competitive federalism has been shown to reduce government intervention into the market (Qian and Weingast 1977, 88), corruption (Shleifer 1993) and transfers (Buchanan 1997, 126).
Of course, there is more than just laziness at work in local governments. While not often related to small local governments in the U.S., another link in the relationship between governance and decline is corruption. It appears that in most cases, corruption hinders economic growth. Local government officials, as the gatekeepers to many funding sources, face enormous temptation to use their positions for personal gain. Corruption, or more specifically, the ability to use political power for personal gain, has a theoretically clear affect on public policy. Shleifer and Vishny (1993) document three predictable policy results of corrupt government: substitution toward policies that enable rent-seeking, denying entry to outsiders and externalities in bribe-seeking. Each of these three things results from the fact that corruption is illegal and therefore secretive in nature.

Since government officials in essence hold property rights over citizens’ ability to complete certain transactions, they can use these rights to generate personal income in the form of bribes. This ability is constrained by the threat of criminal prosecution and electoral repercussions. Therefore, local government officials will use their power to shape policy choices in ways that make corruption easier and more difficult to detect. Certain puzzling policy choices can be understood as a manifestation of this tendency.

Another characteristic of a corrupt economy is the inhibition of change and innovation especially via newcomers. Since corrupt transactions must be kept secret it is important to deal with people that you know you can trust. This necessitates the

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47 Ronald McKinnon points out that a “soft-budget constraint” created by either borrowing to fund spending or revenue sharing keeps competition from being effective. (1997, 75-76).
confinement of activities to insiders. Since innovation often comes from transactions with outsiders the result is a stagnant economy with little innovation.

Theoretically, corruption is very similar to a tax with the surplus of some activity going to the government instead of citizens. However, besides the fact that secrecy often means that inefficient means of transferring that surplus to government officials must be chosen, corruption is often more costly than taxation. The reason being that a tax is administered centrally where corruption is often decentralized. Since decentralized corrupt officials do not take into account the effects of their corruption on the overall health of the economy there may be an over-production of bribe-seeking.

Similar to a tax that is too high and thus reduces productive activity and therefore reduces revenue, over-corruption reduces productivity and eventually the ability to solicit bribes. However, as in a prisoners’ dilemma, each individual government official has no incentive to reduce his propensity to ask for bribes. This creates a situation where bribery hinders productivity instead of facilitating it.

Besides the obvious fact that New Orleans public services have not been well managed, the city is beset by a flamboyantly corrupt government. It is not clear why a government becomes corrupt or why some corrupt governments tend to work for the benefit of the city and some work against it.48 However, it is clear that once corruption becomes accepted by the residents in a city or state, it will be almost impossible to root it out. This is because the only mechanism capable of dealing with corruption in the

48 Leeson and Sobel (2007) find a connection between the level of disaster relief and the level of corruption in state governments.
modern United States is the political process of elections and once citizens no longer vote against those known to be corrupt there is no stopping corruption.

New Orleans has a storied history of corruption. When Mayor Nagin took office, he had 35 government employees arrested because of corruption concerning the city’s inspection tags.\textsuperscript{49} Louisiana is consistently the most corrupt state in the Union (Boettke, et al 2007), measured by the number of convictions of public officials, and the New Orleans district is by far the most corrupt district in Louisiana.\textsuperscript{50}

B. Governance and Crisis

It is during a crisis that the local government plays its most important role. Public services, emergency response and immediate relief are often left in the hands of local government agencies. Therefore, the residents of a community with poor governance often find that they are not only dealing with the wrath of mother nature but also with a poorly functioning safety net. It is not only that functioning of established public services that can determine the impact of disaster on individuals but also the decision-making of officials in control at the time. A corrupt bureaucratic system has difficulty making timely and coordinated decisions for the wellbeing of its residents.

Instances of poor decision-making pervade the Hurricane Katrina disaster from beginning to end. Residents were told to go to the convention center by city officials who then failed to alert the National Guard to their presence. It was five days before evacuations began and it is estimated that ten people died waiting for help (Haygood and

\textsuperscript{49} Consequently, they were all let off for supposed lack of evidence!  
\textsuperscript{50} Conviction data provided by the Department of Justice’s Report to Congress on the Activities and Operations of Public Integrity Section for 2006.
Tyson 2005). The Superdome was planned as the official shelter of last resort, however, given the reported conditions inside, it appears that the planning was inadequate.

These failures of local government serve to exacerbate the damages faced by individuals both in terms of lives lost and property damaged. However, the biggest impact may be on the expectations of residents about the future viability of the city. Many individuals apparently believed that the city was lost from the beginning and the performance of local government during the immediate aftermath did nothing to change that impression.

Poor governance is continues to be major source of frustration during the recovery following a disaster. The local government’s control over several key processes such as land use requirements, building codes, the enforcement of labor laws, commerce permits etc. means that poor government can completely stymie reconstruction efforts. Delays in making key decisions can create uncertainty while a return to the status quo, especially in a corrupt environment, can hinder economic recovery. There are two predictable effects of poor and corrupt governance on reconstruction efforts; policies are beneficial to the politically powerful not necessarily to economic growth or the wellbeing of residents and political in-fighting increases delays and uncertainty. Given the importance of speed and expectations, these tendencies can have a major negative impact on a city’s ability to recover.

In a corrupt government policies are shaped by the rent-seeking opportunities of local government officials and not by their effect on economic growth and the well-being of residents. This tendency, like many things, is intensified after a disaster. Leeson and
Sobel (2007) show that states that experience more natural disasters have greater corruption. They attribute this relationship to the fact that disaster relief funds are often handed out quickly without as many safeguards as other funds.

A result of this increased in opportunities for corruption is that many policies enacted after a disaster are directed by the rent-seeking opportunities of politicians. It is well-known that local politicians tend to use disaster as a time to push through pet projects that have been unworkable in the past. These projects often have some benefit for the politician that is not cost-effective. However, in a time of mass influx of funds from outside the city, such projects can garner more support, even though they are no more effective than they used to be.

Consider for example the push to provide mixed-income housing for the residents of New Orleans instead of the cheaper and more effective alternative of vouchers. In some cases mixed income housing facilities are only capable of housing 15% of the low income families that used to be housed in the same area (Schaeffer 2009). This does not make sense unless one looks at it from the perspective of its ability to generate bribes. While vouchers would undoubtedly generate more housing construction specifically tailored to the poor residents of New Orleans they would provide absolutely no opportunity for bribery.

Another result of poor governance is an increase in uncertainty during reconstruction. If a government is characterized by decentralized corruption, corrupt low level officials, there is great uncertainty as to the actual rules of the game and the cost of completing projects. The majority of reconstruction efforts constitute construction of
some sort. In order for construction to commence there must be an agreement over land use requirements, building codes and labor laws. However, even if these issues are settled there may still be uncertainty in a corrupt government because of selective enforcement.

In order to rebuild, individuals need to have a good idea of what a project will cost. With decentralized corruption, it may be possible to bribe local officials in order to save money on building standards, labor costs and even land use. This potential leads to severe uncertainty over the cost of completing a project. In a coordination game like returning to a city after disaster, uncertainty can ensure that a city does not return to its previous population.

Another key characteristic of a corrupt society is stagnation and lack of influx. Because doing business requires corruption and corruption is illegal, the scope of business is narrowed to people that you can trust. During the reconstruction period this is especially harmful to economic recovery because of the time element involved and because corruption exacerbates the natural tendency for disaster to eliminate marginal businesses.

4.6 Conclusion

Hurricane Katrina caused billions of dollars of damage to New Orleans, cost more than 1100 lives and uprooted more than 250,000 people. But that is not all that the residents of New Orleans must contend with. The city had serious problems before the storm that manifested in population loss, poor public services and even worse governance. These problems were only accentuated with the advent of the storm.
The ability for a city to rebound following disaster is only partially related to the extent of the damages, as large part is dependent on the response of residents, businesses and local government. Residents and businesses play a chicken and egg game of who goes back first that is strongly influenced by both the costs and benefits of returning and the degree of uncertainty surrounding that decision. Local government plays a large role in determining the speed of recovery as well.
5 Conclusion

This dissertation has intended to move forward our understanding of the determinants of the quality of local governance and its effects on individuals. Two general lessons have emerged from the analysis. One, local governance plays a major role in determining the economic welfare of individuals. The provision of public services, and consequent taxation, can potentially range from wealth-enhancing to wealth-destroying and which is largely the result of the actions of local governments. Not only are basic public services such as police protection, infrastructure and utilities under the purview of local governments but also the extent to which individuals and business are able to operate free of extortion and bribery.

Local government officials control many potentially lucrative rents. In many ways, their reactions to these opportunities determine the transactions costs of exchange in local economies. In front of the backdrop of this enormous power, the importance of competition in the federalist structure stands out clearer. Local government officials, like all men, respond to incentives. Without the discipline imposed by economic or political competition, their actions will tend to be less aligned with the interest of their constituents.

Unfortunately, political competition, or electorate discipline, is not guaranteed to align the interests of government officials and individual residents. The logic of interest group politics, concentrated benefits and dispersed costs, short-time horizons, political
business cycle theory and many others show that the business of winning elections is not
necessarily the business of protecting the welfare of individuals. Tiebout competition,
however, is not subject to these failings. Individuals choose their location based on its
relative costs and benefits. Poor public services and high taxes reduce the benefits of
living in a particular location. As long as local officials have an interest in maintaining
the tax base, they have an interest in insuring good public services and a strong economy.

There are several implications of this analysis. The debate over the relative
benefits of a more centralized government versus a more decentralized government has
continued unabated from the 18th century. It has recently gained importance again as the
possibility of exporting Western-style democracy to formerly oppressed regimes has
increased. The terms of the debate generally focus on the ability for central governments
to operate more efficiently while local governments are more responsive to individual
preferences.

This analysis suggests that the competitive benefits of decentralized government
may outweigh the benefits of internalizing externalities. There is another cost of
operating a more centrally organized government, the negative impact on the incentives
of government officials. In order to be responsive and effective, local governments must
actually face competition. This cannot be the case if federal government is providing
funding for a large portion of local budgets.

The role of the local government is much more similar to that of a monopoly with
threat of entry than a competitive firm. Given this, the addition of federal funds into local
budgets simply generates the ability to ignore the competition and extract more rent.
This relationship between central funding and local governance has implications beyond the presence of corruption in the United States. A similar relationship exists between international monetary agencies and developing countries. This analysis provides further support for the suggestion that aid causes corruption.
Bibliography
Bibliography


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