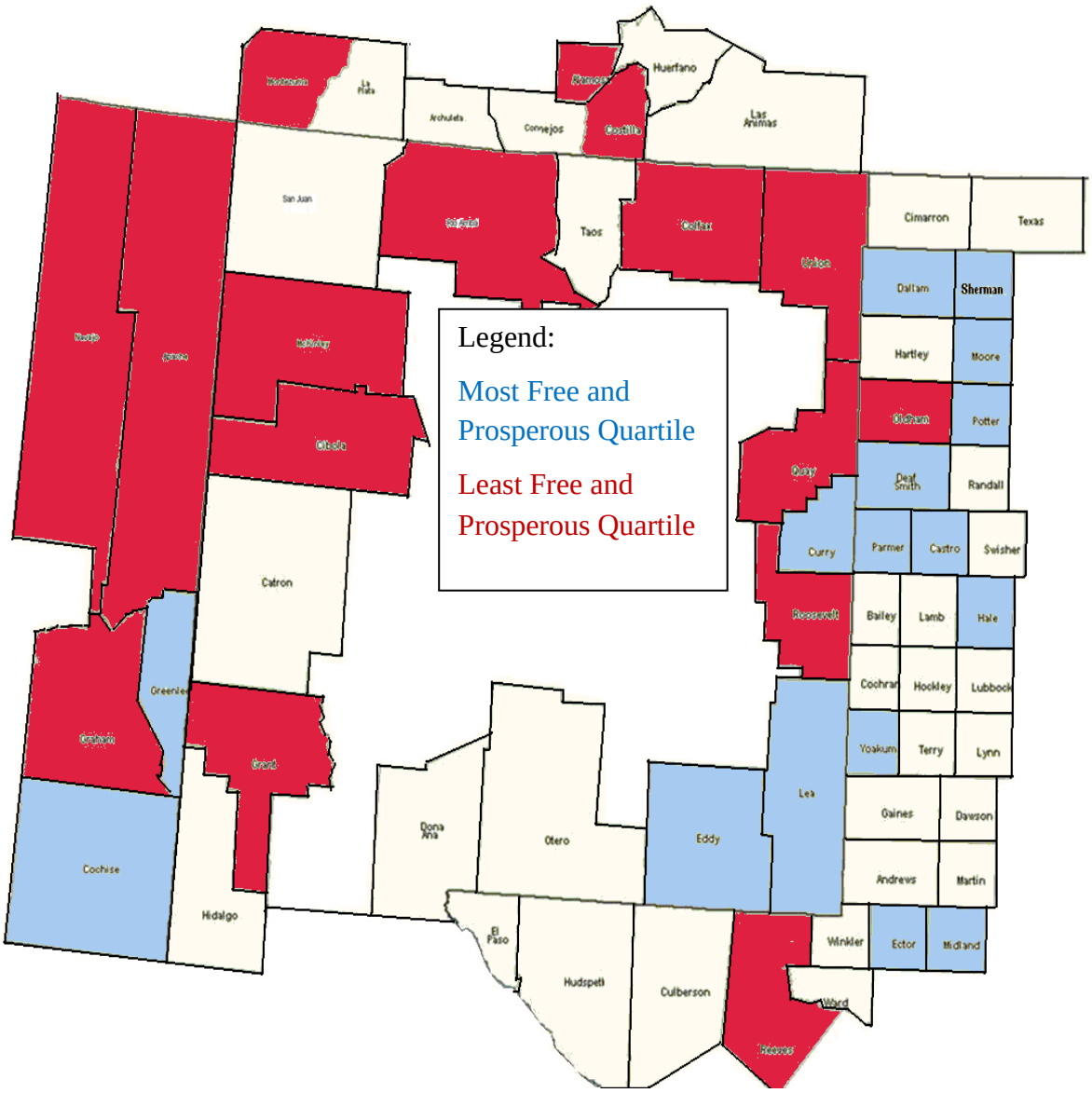
Rio Grande Foundation

Liberty, Opportunity, Prosperity

New Mexico

Liberty, Opportunity, Prosperity along New Mexico's Border



Neighboring Counties along New Mexico's Border

Summary

A large body of scholarship over the past few decades has given us compelling evidence that prosperity emerges in the presence of economic freedom. Whether it is among countries throughout the world or among states and provinces throughout North America, the greater is economic freedom the greater is prosperity. That evidence, coupled with well-known prosperity-reducing incentives within government, strongly suggests that we should also find compelling evidence at more decentralized levels. If greater economic freedom begets greater prosperity internationally and at state and provincial levels, then shouldn't it do so at the county level, too?

If greater economic freedom begets greater prosperity internationally and at state and provincial levels, then shouldn't it do so at the county level, too?

The purpose of this study is to examine that question empirically. We do so by examining 66 neighboring pairs of counties on each side of New Mexico's border. New Mexico borders Texas, Oklahoma, Colorado and Arizona; and confining the data set to neighboring border communities with similar culture, climate, geography and natural resources is a distinct advantage of this approach. Statistical errors associated with such characteristics should be reduced relative to prior studies.

What is prosperity and why does government tend to overreach? Prosperity emerges from *voluntary exchange* among countless individuals in their roles as buyers and sellers. Voluntary exchange makes both parties to each exchange better off, creating value and thereby prosperity in the process (otherwise those exchanges would not take place). Unfortunately governments at all levels tend to grow too coercive, impeding voluntary exchange and undermining the discipline of competition. Reducing that excessive coercion (increasing economic freedom) would increase voluntary exchange and prosperity.

The explanation for excessive coercion has become standard doctrine in economics. It's not that the politicians and bureaucrats from whom collective decisions emerge are not generally well-intentioned. It's that they tend to be overly influenced by the differential power of well-organized interest groups. Their *incentives* are misplaced when contrasted with the incentives of buyers and sellers engaging in *voluntary* exchange in the marketplace.

As a result special privileges are legislated directly by providing interest groups a monopoly privilege, special tax advantage or direct subsidy. Licensing, health care mandates, minimum wage laws, construction permitting and inspections and "certificates of public convenience or necessity" are prime examples. Or they are provided indirectly by special privilege to government's resource providers, making provision of core functions more costly than they otherwise would be. The *coerced* costs of each of these privileges are widely spread among the

citizens. Because the costs of each special privilege are widely spread, the cost to each citizen is so small as to be invisible; and the individual citizen has no incentive to become informed or do anything about the problem.

What affect do the special-privilege impediments to voluntary exchange have on prosperity? The primary goal of this study is to statistically test our expectation that fewer impediments to voluntary exchange lead to greater prosperity. We do so by estimating how *differences in prosperity* in neighboring counties on each side of New Mexico's border are affected by *differences in their impediments to economic freedom.*

Since prosperity may also be affected by differences in federal presence in each locale, the test also includes the difference in federal presence between paired counties. We often hear assertions from "economic development" specialists about how an increased federal presence will benefit the local economy by a multiple of the increase (the so-called multiplier effect). In essence, though, they are really stating the trivially obvious proposition that increased number of local federal workers and spending will increase the demand for goods and services in their locale. But how does the influx of workers, federal spending and/or subsidies affect the prospects for individuals to prosper in any particular locale? Does it improve or worsen conditions that allow each individual the opportunity to flourish?

This is a particularly interesting question. Historically, New Mexico's federal legislators have been particularly adept at "bringing home the bacon." Nonetheless the state is still relatively poor, and that should make one skeptical of equating multipliers with prosperity. We test the effect of federal presence by estimating how *differences in prosperity* in neighboring counties are affected by *differences in their federal presence.*

How do we measure prosperity? We cannot measure it directly. But the voluntary nature of the exchange process suggests a measurement that should be highly correlated with prosperity, namely the earnings of those involved in private transactions.

Also, we cannot measure economic freedom directly; but we have reasonable metrics for impediments to economic freedom, namely the relative size of each county's state/local government. The size of state/local government should be proportional to those impediments at the margin. Why is this so? Impeding voluntary exchange requires resources, as does subsidizing involuntary exchange. Governments that are more susceptible to privilege seeking should therefore be relatively larger than those that are less susceptible.

Similarly, we should be able to detect the effect of federal presence on prosperity, if any, by comparing its relative size between counties.

Using data available from the Bureau of Economic Analysis for 66 pairs of counties along New Mexico's border, we tested the hypothesis that economic freedom promotes prosperity. Two sets of empirical tests were conducted, one each for calendar years 2001 and 2010. Each of those

tests supported the proposition that economic freedom advances prosperity. Moreover, each test found that those counties having a larger federal presence suffered from reduced prosperity.

Two sets of empirical tests were conducted, one each for calendar years 2001 and 2010. Each of those tests supported the proposition that economic freedom advances prosperity. Moreover, each test found that those counties having a larger federal presence suffered from reduced prosperity.

Statistically speaking, the results for each test are significant at any of the usual predetermined levels of significance (0.05, 0.025, and 0.01). Simply put, it is highly unlikely the results could have been obtained by chance alone. Moreover, the estimated effects are consistent with observed increases in prosperity from 2001 to 2010, lending even more support to the proposition that economic freedom matters at the county level.

How much does it matter? We can estimate "what might have been" for a poor county. The typically poorer county (Rio Arriba, NM; Grant, NM; Roosevelt, NM; Quay, NM; Costilla, CO; Apache, AZ) with low economic freedom on average devotes a profligate 35 percent of its resources to state/local government, while the typical county with high economic freedom (Curry, NM; Lea, NM; Midland, TX; Dallam, TX; Greenlee, AZ) devotes a much more parsimonious 10 percent of its resources. Using earnings per private worker in 2010 as our indictor of prosperity, we estimate that, had it emulated the freer county, the poorer county would have been 75 percent more prosperous (earnings per private worker estimated to average $42.5 thousand rather than observed $30 thousand per year).

Similarly, we can estimate how much federal presence matters for prosperity. Take a county like Curry County in New Mexico, for example. 40 percent of its resources are devoted to federal presence in the county, mostly due to Cannon Air Force Base (which has managed to avoid being closed several times in recent years). Say that Curry County had had a more modest federal presence of five percent without Cannon. In that case Curry County's estimated prosperity would have been 40 percent higher (earnings per private worker estimated to be $61.5 thousand rather than the observed $44 thousand per year).

We don't want to overstate the precision of our estimates. They are estimates only, and the study discusses some possible sources of error in the estimates. Nonetheless, the study provides compelling evidence of the direction and approximate magnitude of state/local government's affect on prosperity. Assuming that laying the ground work for maximum prosperity should be the aim of government, policy makers should give emphasis to making their counties more resistant to privilege-seeking.

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Economic freedom leads to less poverty and improvements in the general living conditions of a society… countries with persistently high levels of economic freedom have lower poverty rates. Moreover, those that move toward more economic freedom enjoy better living standards across multiple dimensions.[1]

Introduction and Background

We notice that different locales throughout the country, indeed throughout the globe, enjoy varying levels of prosperity. Some of the variation is certainly due to climate, geography, culture or just plain luck. But how does the scope of government at each of its levels (federal, state, and local) affect prosperity, if at all? In answer to that question many scholars over past several decades have been paying particular attention to economic freedom. Their hypothesis is that greater economic freedom leads to increased prosperity by virtue of increased voluntary exchange in free markets. Putting that hypothesis differently, governments at all levels tend to grow too coercive; reducing that excessive coercion would increase voluntary exchange and thus prosperity.

If greater economic freedom begets greater prosperity internationally and at state and province levels, then shouldn't it do so at the county level, too?

To wit: Empirical studies comparing countries throughout the world or states and provinces throughout North America provide compelling evidence that greater economic freedom begets greater prosperity[2].

That evidence, coupled with the well-known prosperity-reducing incentives faced by those administering the governing apparatus, strongly suggests that we should also find compelling evidence at more decentralized levels. If greater economic freedom begets greater prosperity internationally and at state and province levels, then shouldn't it do so at the county level, too?

[1] James Gwartney, Robert Lawson, and Joshua Hall, *Economic Freedom of the World 2011 Annual Report*, 2011, p.1, Fraser Institute, Vancouver, BC, http://www.freetheworld.com/release.html

[2] See Appendix A for a summary of these studies.

The first goal of this study is to answer that question. In particular we do so by illuminating differences in economic freedom and prosperity between New Mexico counties and its neighboring counties across the border in Texas, Oklahoma, Colorado and Arizona.

Why does government tend to overreach?

Why does government tend to overreach? The second goal of this study is to examine prosperity reducing incentives inherent in political process.

Assuming that laying the groundwork for maximum prosperity should be the aim of government, how do we go about achieving that outcome? The third goal of this study is to offer recommendations for doing so.

Assuming that laying the groundwork for maximum prosperity should be the aim of government, how do we go about achieving that outcome?

With that background, the study proceeds as follows:

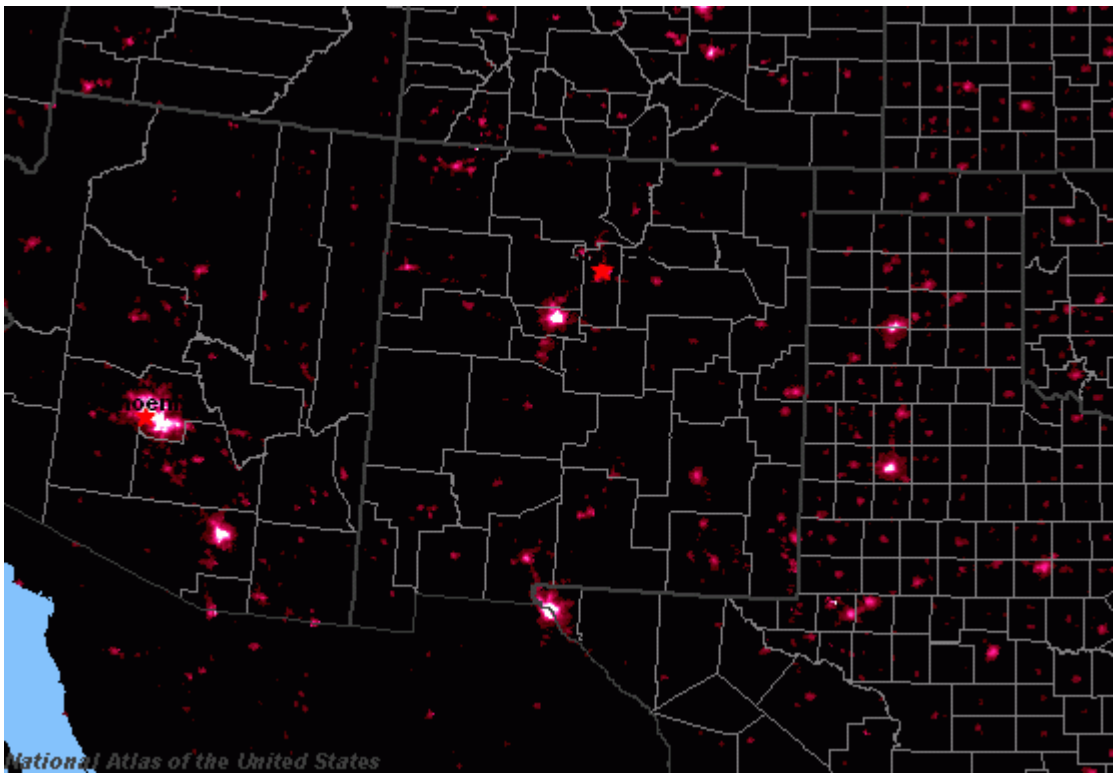
1. Overview of the similarities and differences among bordering counties.
2. Explanation of prosperity, why it is important and how we go about measuring it.
3. Explanation of why government overreaches and how it reduces prosperity.
4. Empirical tests of the proposition that counties with greater economic freedom facilitate greater prosperity. The tests use an interstate paired comparison of neighboring counties along New Mexico's border.
5. Conclusions and recommendations for changes in the policy regime that will promote greater prosperity.

We turn first to a big picture overview of the bordering counties under study.

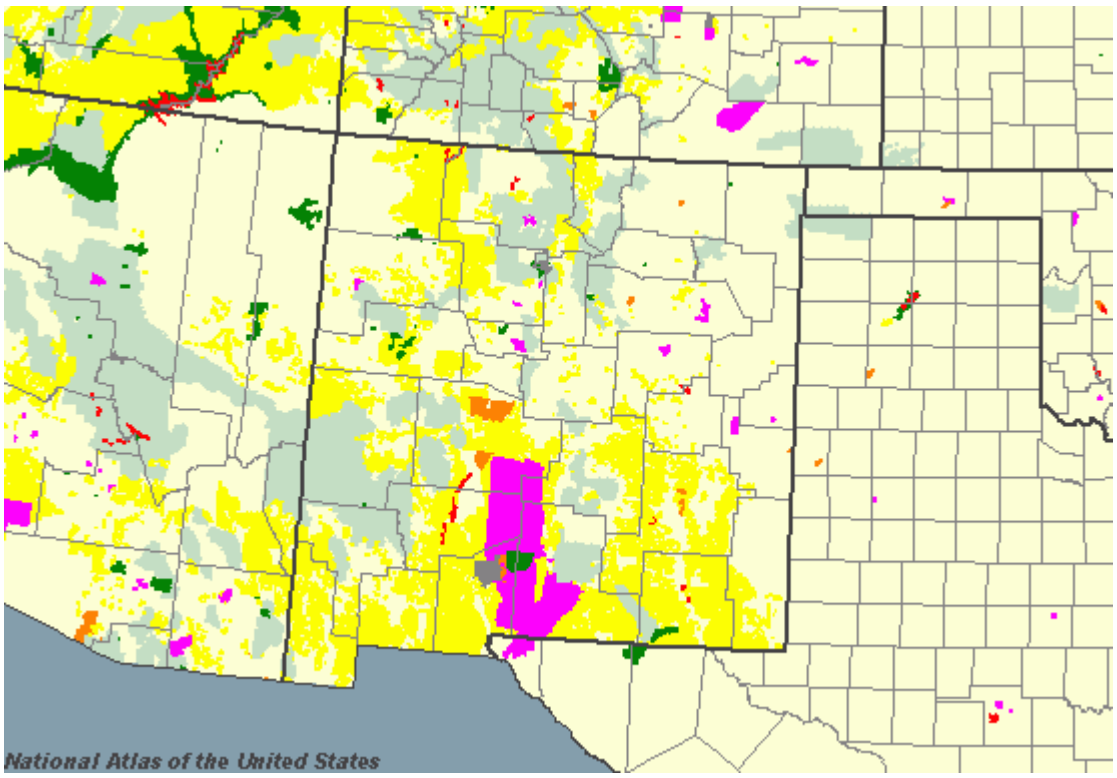
Overview of bordering counties in the region

We expect to find that economic freedom improves the outlook for prosperity at the county level. Confining the data set to neighboring border communities with similar culture, climate, geography and natural resources is a distinct advantage of this approach. Statistical errors associated with such characteristics should thereby be reduced relative to prior studies. However, even with distinct similarities, nearby counties may differ in important ways.

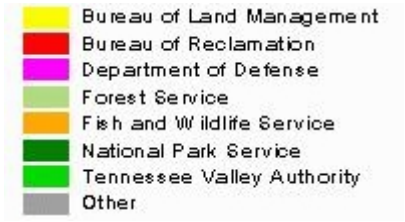
For example, population density often varies greatly from county to county. This aerial view of the night lights of New Mexico and adjacent states illustrates the similarities and differences along its border quite nicely:



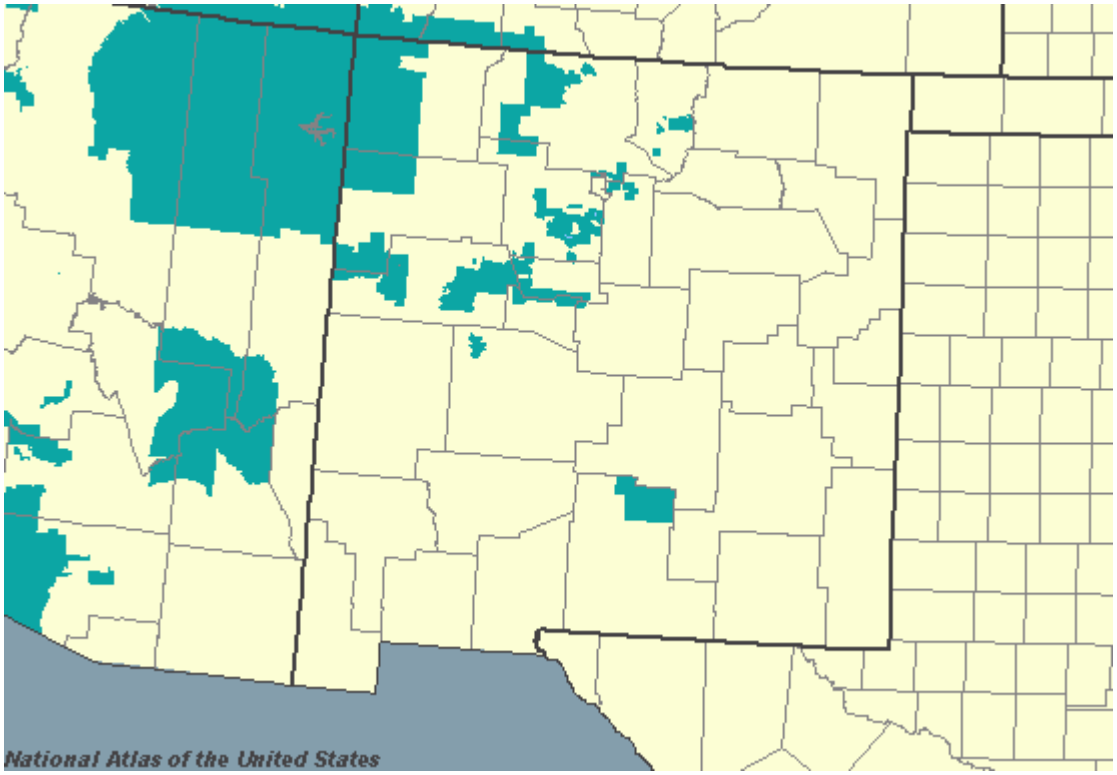
Similarly the preponderance of federally owned and managed land differs greatly in some locales. Compared to its neighbors, New Mexico generally has a larger percentage of land managed by the Bureau of Land Management and the Forest Service. New Mexico has more military facilities than its neighbors. New Mexico has a particularly large percentage of land under federal control relative to Texas. The presence of federal facilities and land may affect prosperity in nearby locales. This map gives you an overview of the similarities and differences in federal land ownership for the areas under study:



Federal Lands Source: U. S. Geological Survey



A large proportion of Indian reservations exist throughout the region under study, particularly in Northeast Arizona and Northwest New Mexico. Indian reservations are usually characterized by lack of economic freedom and lack of well defined property rights; and that is particularly relevant to this study. Here is how Indian reservations are distributed throughout the region under study:



With that big picture of how neighboring counties differ, the next section describes what we mean by prosperity.

What is Prosperity?

Prosperity emerges from *voluntary exchange* among countless individuals in their roles as buyers and sellers. Voluntary exchange makes both parties to each exchange better off, creating value and thereby prosperity in the process. Prices play a crucial role in this process, guiding buyers and sellers (each having local knowledge in the form of "dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess") to employ resources in their highest valued use[3]. In the process buyers are constantly searching for ways to economize in satisfying their wants while sellers are constantly searching for ways to reduce the

[3] See F. A. Hayek's famous essay "the Use of Knowledge in Society," *American Economic Review* 35, no.4, Sept. 1945), pp. 519-530. It can be found online at http://www.econlib.org/library/Essays/hykKnw1.html.

cost and improve their product. Those searching processes discipline sellers; sellers must satisfy buyers or they or they have to yield to their more successful competitors. Competition disciplines sellers such that market process tends to maximize value for consumers.

Prosperity emerges from the competitive process because it provides greatest opportunity for citizens to flourish. "To flourish" is defined "to be strong and healthy or grow well, *especially because conditions are right*." Conditions become more right with fewer government-imposed impediments to voluntary exchange. Prosperity increases not only in the county where impediments are reduced but in locales far and near as well. As a practical matter for measuring changes in prosperity, it is the *direct effect* on prosperity at the local level that should readily be detectable empirically.

But why does government tend to overreach? We attempt to answer that question next.

Why Does Government Tend to Overreach?

Before conducting empirical tests, we need some perspective about the *appropriate size and scope of state and local government* and how it affects *prosperity*.

How large should government be? When does it promote prosperity among its citizens and why does it seem to grow beyond its core[4] functions? We all enjoy our individual freedom, but how much liberty should we be willing to give up?

> *Unless restrained by constitutional rules, special interest groups will use the democratic political process to fleece taxpayers and consumers.*[5]

What is now standard doctrine in economics began with Mancur Olson's path breaking book[6] in 1964. Olson examined how interest group dynamics in political process undermine the discipline of market process by granting of favors for special interest groups. Because of the dynamics examined by Olson, we conclude that governments at all levels have a natural proclivity to get too big. They expand beyond their core functions to provide special privileges to well-defined interest groups. Those privileges are provided to groups who are generally small in number (the producers), so concentrated benefits are clearly visible to, and supported by, each of the group's members. In contrast the *coerced* costs of the privileges are widely spread among the citizens

[4] There will always be disagreement on exactly what constitutes "core functions." But that is not part of the argument in this paper. The emphasis herein is on the problems of privilege seeking. If we could greatly reduce those problems, perhaps we could then have a more reasoned conversation about core functions.

[5] James Gwartney, Richard L. Stroup and Dwight R. Lee, *Common Sense Economics: What everyone should know about wealth and prosperity*, St. Martens Press, New York, 1993, p.88. By "constitutional rules" they mean binding rules that are intended to reduce this flaw in democratic process; for instance, a rule that requires a two-thirds majority in both houses of the legislature before a subsidy may be granted to a group seeking privileged treatment. The adjective "constitutional" emphasizes that these rules must be durable, meaning that they must be particularly hard to change, as is the case for most constitutions.

[6] Mancur Olson, *the Logic of Collective Action: Public Goods and the Theory of Groups,* Harvard University Press, Cambridge Massachusetts, 1965, appendix added in 1971.

(the consumers). Since the costs of each special privilege are widely spread, the cost to each citizen is so small as to be invisible, and the individual citizen has no incentive to become informed or do anything about the problem. This phenomenon is known as *rational ignorance* among economics and political science scholars.

Rational ignorance is a significant contributor to the problem of government overreach: Individuals in small groups who have the potential to receive significant, noticeable benefit have strong incentives to organize and lobby[7] politicians, regulators, and bureaucrats for preferential treatment. They do so because they have a reasonably high probability of success, since those who pay for such treatment are usually many in number with each individual being minimally impacted by his or her prorated cost of the preferential treatment. Unfortunately, each time one of these groups succeeds in obtaining preferential treatment, competitive discipline and opportunities for value-creating voluntary exchange are reduced.

It's not that the politicians and bureaucrats from whom collective decisions emerge are not generally well-intentioned. It's that they tend to be overly influenced by the differential power of well-organized interest groups. It's that their *incentives* are misplaced when contrasted with the incentives of buyers and sellers engaging in *voluntary* exchange in the marketplace. As a result special privileges are legislated directly by providing interest groups a monopoly privilege, special tax advantage or direct subsidy. Licensing, health care mandates, minimum wage laws, construction permitting and inspections and "certificates of public convenience or necessity" are prime examples. Or they are provided indirectly by special privilege to government's resource providers that make provision of core functions more costly than they otherwise would be. Collective bargaining by government employee unions, little Davis-Bacon and teachers' unions restricting competition and innovation are prime examples.[8]

There is one natural brake that partially reduces the proclivity for government overreach, particularly at the decentralized county level. Human capital is quite mobile. The more that local government extends impediments to voluntary exchange, the more it will find opportunity-seeking capital human capital relocating to other locations within the state, other states or even other countries.

How does the problem of concentrated benefits and widely dispersed costs affect prosperity? Consider Figure 1: How Privilege Seeking Reduces Prosperity, which illustrates graphically the tradeoffs available to the state/county:

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[7] This is known as "rent seeking" among economists. It is considered wasteful activity since nothing of value is produced by resources used to lobby government officials for special privileges.

[8] Two recent articles explain the privilege-seeking phenomenon in the federal sphere. Holcolmbe, Randall G., "Crony Capitalism: By-Product of Big Government," *Independent Review*, Spring 2013 (http://www.independent.org/publications/tir/article.asp?a=927) and Mitchell, Matthew, "Chapter 4: Economic Freedom and Economic Privilege," in *2013 Index of Economic Freedom*, Heritage Foundation, 2013, (http://www.heritage.org/index/download).

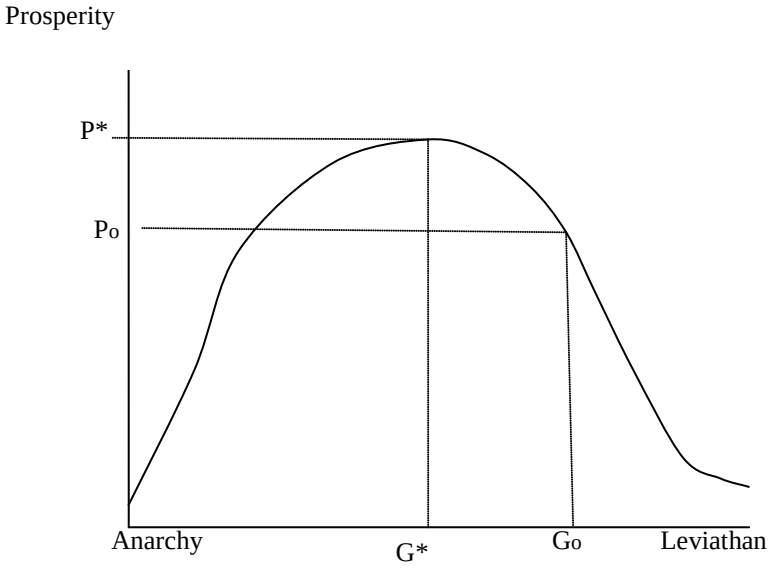


Figure 1: How Privilege Seeking Reduces Prosperity

Consider the scope of the state/county government (G) given the existing polices of the federal government and other locales. Conceptually as state/county government grows[9] beyond zero (designated "anarchy" above) it improves the prospects for prosperity by emphasizing its core functions (rule of law, enforcement of well-defined property rights, equal treatment before the law and protection of property and persons). When the scope of G reaches G* government policies maximize prosperity P*.

The problem is how to induce policy makers to reduce the scope of government (increase economic freedom) by moving back toward G*.

Unfortunately, as discussed above, government has a natural tendency to grow beyond the size and scope that promotes the greatest prosperity. Because of rational ignorance among the general populace, political entrepreneurship in brokering privileges for special interests leads to outcomes emerging at points like G_o with resulting diminished prosperity P_o.[10] The problem is how to induce policy makers to reduce the scope of government (increase economic freedom) by moving back toward G*.

[9] The labels on extreme points of potential government size (Anarchy and Leviathan) are inspired by James M. Buchanan's book *the Limits of liberty*, Univ. of Chicago Press, 1975.

[10] Some of this reduction in prosperity will be due to human capital moving away from the impediment increasing jurisdiction to locales with more economic freedom.

How do counties differ in their scope of state/local government; and can we really detect greater prosperity in those counties with greater economic freedom (smaller scope of state/local government)? That's what we turn to next.

Empirical Test: Evidence that economic freedom promotes prosperity at the county level

Our primary goal is to test whether or not *differences in prosperity* in neighboring counties on each side of the state line along New Mexico's border are affected by *differences in their economic freedom.*

Since prosperity may also be affected by the federal presence in each locale, the test includes the difference in federal presence between paired counties. We often hear assertions from "economic development" specialists about how an increased federal presence will benefit the local economy by a multiple of the increase (the so-called multiplier effect). In essence, though, they are really stating the trivially obvious proposition that increased number of local federal workers and spending will increase the demand for goods and services in their locale.

As long as some economic freedom still exists, businesses and jobs will necessarily expand to support the additional workers and spending. But that is not the same thing as prosperity. The real question is "how does the influx of workers, federal spending and/or subsidies affect the prospects for individuals to prosper in the locale?" Does it improve or worsen conditions that allow each individual the opportunity to flourish?

This is a particularly interesting question. Historically, New Mexico's federal legislators have been particularly adept at "bringing home the bacon." Nonetheless the state is still relatively poor, and that should make one skeptical of equating multipliers with prosperity.

In conducting the empirical test, care is taken not to introduce what is known as "confirmation bias." There is no question that, prior to this empirical effort, the author is convinced that government grows too big and that, consequently, more economic freedom (less government) increases prosperity. The author wants more prosperity; and the way to get it is to reduce government imposed impediments to voluntary exchange. Therefore the empirical test is set up using the best summary representation of human interaction and associated measurements that we were able to uncover *prior to doing the test*. What we see on the initial try is what we get. No torturing of the data is allowed if the initial empirical results don't support the hypothesis. Moreover, potential problems with the results are discussed once they are obtained.

With that background, the hypothesis being tested may be summarized as follows: The difference in prosperity (New Mexico county minus neighbor county prosperity) depends on the difference in state/local impediments to economic freedom (New Mexico county minus neighbor county economic freedom) and the difference in federal presence (New Mexico county minus

neighbor county federal presence). The difference in impediments to economic freedom should affect prosperity negatively. In other words, a decrease in the difference in impediments to economic freedom in a county (G in Figure 1 above) should increase prosperity in that county. The difference in federal presence may or may not affect prosperity. How do we go about measuring these differences? Take prosperity first:

Measuring Prosperity

As discussed above, prosperity emerges from the voluntary exchanges that take place in market process. We cannot measure prosperity directly. But the voluntary nature of the exchange process suggests a measurement that should be highly correlated with prosperity, namely the earnings of those involved in private (including farm) transactions[11]. The more people are prospering, the higher should be their earnings in market process. The Bureau of Economic Analysis has good data for these earnings by county. Therefore, these earnings make an excellent proxy variable for prosperity.

Since neighboring counties have differing populations, our prosperity proxy variable is normalized to private earnings per worker[12]. That way the difference in each of the paired counties' prosperity is estimated by directly comparable measures: private earnings per worker in the New Mexico county minus private earnings per worker in the neighboring county. For example, Doña Ana County's report of private earnings per worker in 2010 was $37.2 thousand and El Paso's was $36.9 thousand, yielding a difference of $0.3 thousand per private worker in favor of Doña Ana.

The next task is that of coming up with a measure of impediments to economic freedom.

Measuring economic freedom:

Practically, it is impediments to economic freedom that best lend themselves to measurement. We cannot measure economic freedom; but we have reasonable metrics for impediments to economic freedom, namely the size of state/local government (G in Figure 1 above). The size of state/local government should be proportional to those impediments at the margin[13]. Governments that are more susceptible to privilege seeking should be larger. Moreover, legislators and bureaucrats must enforce government-imposed impediments to voluntary exchange in all of their dimensions (labor regulations, environmental regulations, taxes, licenses, permitting and so forth), and that requires resources. Also, subsidies for favored groups require direct expenditures by governments that, like bribes, induce otherwise involuntary exchange.

[11] Studies measuring prosperity over the years often use per capita income. Other indicators that have been used are life expectancy, quality of the environment, infant mortality, the prevalence of telephones, prevalence of air conditioning and heating units, prevalence of refrigeration and and prevalence of flush toilets.

[12] Bureau of Economic Analysis has good county data on number of workers in each category.

[13] Empirical tests draw out estimates of the margin, meaning that those functions of government that are prosperity enhancing are irrelevant. Assuming that government gets too big because of favoritism, it is how the changes in G affect changes in prosperity that are drawn out by our estimates.

Prior studies have created indexes of these impediments[14]. But that necessitates some judgment re: weighting the components of each index and consolidating into one index. By combining the estimated value of resources forgone for state/local government (G), we do not have to resort to a scheme of weighting indexes.

We can't precisely measure the size of state/local government, but earnings of government workers should provide us with a reasonable proxy[15]. While teachers, police, and fire fighters exist everywhere, the dominant activity of local government outside of those common functions involves regulating economic activity and collecting taxes on such activity. Bureau of Economic Analysis has good county data for earnings of government workers at federal, state and county levels and for private workers as well. Before detailing how the measurements are made, we need to describe how federal presence enters estimation procedure within each county.

The size of the federal presence may affect prosperity in each county. As we do for state and local workers, we use earnings of federal workers as a proxy for federal resources forgone in each county. The reader may question the rationale for using "federal resources forgone" on the same par with private and state/local resources forgone when testing the empirical effect on prosperity of federal presence within a county. After all, don't those resources (for the military base, border patrol or forest service, for example) come from on high with essentially negligible tax payments originating from local citizens?

While the answer to that question is "yes," those resources do have an opportunity cost for the county. Conceptually (not practically) those resources in the form of dollars could instead be given to the citizens of the county. Indeed, they could be given to those citizens in such a way that they would all be better off without the federal presence.

To round out our discussion of resources forgone in each county, we need to add an important category so far omitted: *private earnings*. Private earnings (as a proxy for total private spending) could be redirected to government, so they have an opportunity cost. Now we are ready to describe the opportunity cost metrics in detail:

Since counties are different, the earnings data (as our estimate of resources forgone in each category) must be normalized to make paired inter-county differences directly comparable. This is accomplished by measuring each category of earnings (federal, state/local and private) as a percentage of total earnings within each county. For example, Doña Ana County in 2010 reported (via BEA) federal workers' earnings of $498,147 thousand, state/county workers'

[14] See discussion of *Economic Freedom of the World, Index of Economic Freedom* and *Economic Freedom in North America* in Appendix A below. Other studies have used presence of absence of "right to work" legislation or state/local income tax rates as measures of economic freedom.

[15] Spending by government is probably a better measure of value of resources forgone than is earnings. But spending data are not available for counties. Spending data are available for states, however. Calculation of the correlation between spending and earnings across all states yields 0.996, indicating that earnings should be an excellent substitute for spending at the county level.

earnings of $869,531 thousand[16] and private (including farm) workers' earnings of $2,593,348 thousand summing to earnings totaling $3,961,026 thousand. That gives us an estimate of the size of state/county government in Doña Ana of 22 percent of all categories. In other words, we estimate that state and local government in Doña Ana County takes 22 percent of all resources forgone in that county. Appendix C provides a detailed example of each measurement using Parmer County, Texas for illustration.

Percentages are unit less, so the measurements are directly comparable from county to county. For example, we can compare Doña Ana County's percentage of resources forgone for state/local government of 22.0 percent to El Paso County's 15.6 percent. Which are the best and worst counties in this study for economic freedom by this measure? Here are the ten best and worst:

Table 1: 10 Best Counties for Economic Freedom

1	Dallam, TX	7.30%
2	Midland, TX	7.40%
3	Greenlee, AZ	8.50%
4	Curry, NM	9.40%
5	Eddy, NM	9.60%
6	Castro, TX	10.20%
7	Lea, NM	10.50%
8	Cochise, AZ	11.40%
9	Parmer, TX	11.50%
10	Potter, TX	12.10%

Table 2: Worst 10 Counties

1	Apache, AZ	39.70%
2	Rio Arriba, NM	39.50%
3	Reeves, TX	36.60%
4	Costilla, CO	34.70%
5	Cibola, NM	33.60%
6	Grant, NM	34.50%
7	Colfax, NM	28.40%
8	Roosevelt, NM	27.60%
9	Quay, NM	27.30%
10	Graham, AZ	27.20%

[16] County workers' earnings as an indicator of resources forgone include all taxing and regulatory jurisdictions within the county's borders.

See Appendix D for economic freedom ranking of all counties in this study.

Empirical Findings

We ran empirical tests on two sets of data, one for the year 2001 and the other for 2010. The regressions were set up as follows:

We are attempting to explain the difference in prosperity between counties. That difference is known as the "dependent variable" and its measurement (measured as described above, details in Appendix C) for each pair of counties is taken as New Mexico county prosperity minus neighboring county prosperity. Label this as *prosperity diff.*

We want to explain the difference in prosperity between counties by their difference in impediments to economic freedom. We expect that smaller impediments explain greater prosperity. The difference in impediments to economic freedom is known as an "explanatory variable" and its measurement (measured as described above, details in Appendix C) for each pair of counties is taken as New Mexico county impediments minus neighboring county impediments. For example, the Doña Ana – El Paso difference is 6.4 percent (22.0 minus 15.6). Doña Ana County forgoes the value of 6.4 percentage points more of its total resources forgone for state/local government compared to El Paso. Label this as *impediments diff.* Appendix E lists the differences for each New Mexico county from best to worst from New Mexico perspective.

We expect that the size of federal presence in each county may also affect prosperity, so we include the difference in federal presence as a percentage of total resources forgone (measured as described above, details in Appendix C) for each pair of counties as an explanatory variable. That difference is taken as New Mexico county federal presence minus neighboring county federal presence. For example, Doña Ana County's federal presence was 12.6 percent of the estimated value of resources forgone for federal activities in 2010 and El Paso's was 21.1 percent, yielding a difference of minus 8.5 percent. Label this as *federal diff.*

For sixty-six pairs of counties[17] (each pair being one observation – see the list of pairs in Appendix B) the regression to be tested is:

$$Prosperity\ diff = B_o + B_1(impediments\ diff) + B_2(federal\ diff) + e$$

Expected signs of the coefficients are B_1 negative (impediments to voluntary exchange reduce prosperity) and B_2 unknown (difference in federal presence may have favorable, unfavorable or negligible effect on prosperity). The symbol "e" is for the error term (stochastic or unexplained part of the regression). We ran ordinary least squares and least absolute deviations regressions

[17] Extremely sparsely populated Loving County, Texas was treated as if it were part of Reeves County, Texas for the empirical tests.

for each of the 2001 and 2010 data sets (four regressions total). The results in standard econometrics tabular form may be found in Appendix F: Tabular summary of empirical tests.

The estimated coefficient of *impediments diff* turned out to be negative as expected for all four regressions; evidence that impediments to voluntary exchange tend to reduce prosperity and reducing those impediments (increasing economic freedom) tends to increase prosperity. Interestingly, and contrary to Keynes and his followers (at least at the county level in the long run), the estimated coefficient of *federal diff* also turned out negative; evidence that the bigger the federal government is in a locale the worse are the prospects for its citizens to enjoy prosperity.

Interpretation of the regression results for 2010 data

The slope of the estimated[18] linear regression line is minus 0.9 for the ordinary least squares regression and minus 0.8 for least absolute deviations regression. That means reducing the size of state and local government at the county level by one percent of the value of total resources used in the county at all levels (private sector plus federal government plus state and local government) would increase prosperity by an estimated $900 per year (ordinary least squares estimate) or by an estimated $800 per year (least absolute deviations estimate) as measured by our prosperity proxy variable (earnings per private sector worker per year)[19]. For example, recall that Doña Ana County's state/county component uses an estimated 22.0 percent of all resources (private plus state/county plus federal). If it were to reduce its size by one percentage point (by 1/22 of the total or a 4.5 percent reduction in state/county government), then we would predict an increase prosperity of 2.4 percent[20] by the ordinary least squares estimate.

This is illustrated graphically in Figure 2: Prosperity-Government Tradeoff. Recall from Figure 1 that the curve in the graph illustrates the prosperity – government tradeoff. By reducing the size of state/county government from G_0 to G_1 (4.5 percent in the case of Doña Ana County), then prosperity is estimated to increase 2.4 percent (the vertical distance from P_0 to P_1 divided by P_0) by the OLS estimate. Of course this assumes that the county is able to reduce its size by reducing its granting of special privileges, a mighty big assumption given the incentives at play.

The linear regression assumes that the change illustrated can be approximated by a straight line – the straight portion of the right side of the curve in Figure 2. It also assumes that the slope of that straight line is approximately equal for all counties. In other words, the posited tradeoff between increased prosperity and reduced size of government G in Figure 2 is the roughly the same for all counties.

[18] Estimates are rounded to the nearest tenth (equivalent to the nearest $100 dollars per private worker per year).
[19] There is no particular reason to think that the stochastic part of the regression is characterized by a "normal distribution." Least absolute deviations results work better for fat tailed distributions, which may well be the case.
[20] Proxy variable for prosperity increases by $900 per year and from a base of $37,200 per year, or 2.4 percent increase as measured in 2010 dollars.

Continuing with the example, it is also *estimated* that the percentage increase in prosperity for Doña Ana would fall somewhere in the range of 3.1 percent and 1.7 percent per year with greater than 97.7 percent probability.

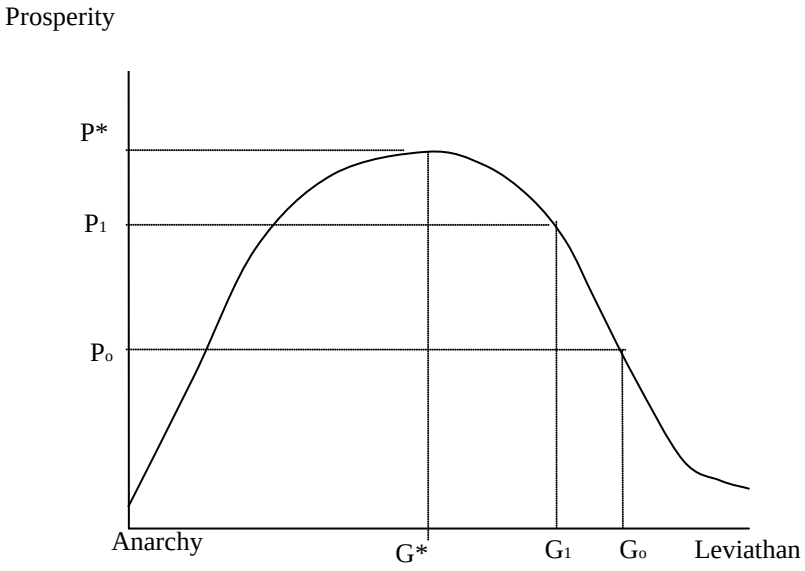


Figure 2: Prosperity-Government Tradeoff

In statistical lingo, the results are significant at any predetermined level of significance (0.05, 0.025, and 0.01). Simply put, that means it is highly unlikely these results could have been obtained by chance alone. Moreover, the results are consistent with regressions run on the 2001 data set. And the differences in estimated coefficients between 2001 and 2010 data sets are indicative of prosperity increases (as inferred from private earnings per worker) over the nine year period between data sets. Since the results for both data sets are consistent with one another, we have even more empirical support for the proposition that economic freedom matters at the county level. If the reader is still skeptical of the proposition that economic freedom begets prosperity at all levels, we ask the question: what would it take to convince you?

That means it is highly unlikely these results could have been obtained by chance alone.

We can draw further intuition from the estimates by asking the question: How much does economic freedom matter? We can estimate "what might have been" for a poor county. The typically poorer county (e.g. Rio Arriba, NM; Grant, NM; Roosevelt, NM; Quay, NM; Costilla, CO; Apache, AZ) with low economic freedom on average devotes a profligate 35

If the reader is still skeptical of the proposition that economic freedom begets prosperity at all levels, we ask the question: what would it take to convince you?

percent of its resources to state/local government, while the typical county with high economic freedom (Curry, NM; Lea, NM; Midland, TX; Dallam, TX; Greenlee, AZ) on average devotes a much more parsimonious 10 percent of its resources. Using earnings per private worker in 2010 as our indictor of prosperity, we estimate that, had it emulated the freer county, the poorer county would have been 75 percent more prosperous (earnings per private worker estimated to average $52.5 thousand rather than observed $30 thousand per year).

Turning to the effect of federal government presence, we find that *reducing the size of federal government presence* within a county by one percentage point *would increase prosperity* by an estimated $500 per year (ordinary least squares estimate) as measured by our prosperity proxy variable (earnings per private sector worker per year). How much does that matter for prosperity? Take a large-federal-presence county like Curry County in eastern New Mexico, for example. 40 percent of its resources are devoted to federal presence, mostly due to Cannon Air Force Base (which has managed to avoid being closed several times in recent years). Say that Curry County had had a more modest federal presence of five percent without Cannon. In that case Curry County's estimated prosperity would have been 40 percent higher (earnings per private worker estimated to be $51.5 thousand rather than the observed $44 thousand per year).

The estimates of that effect are not surprising. A federal government presence may not promote voluntary exchange. The Bureau of Land Management and Forest Service, for example, often do not make sensible[21] trade-off decisions regarding drilling, grazing, water allocation, recreation uses and timber cutting on federal land. Such decisions are subject to the same special interest group dynamics (concentrated benefits and widespread costs in political process) discussed above.

How Well Is Estimated Prosperity Explained by the Regressions?

The estimates explain approximately one-half of the variance of paired counties prosperity differences from the estimated mean of those differences, a fit that is generally considered quite good for cross-section data. We get a better sense of the fit by visually comparing how the levels of prosperity predicted by the regressions compare to our actual measurements of prosperity as differences in impediments to voluntary exchange increase. Figure 3 pictures how well the 2010 measures of prosperity predicted by the ordinary least squares regression fit with actual prosperity (the way we measured it):

[21] The reason: no well-defined property rights, little or no response to price signals.

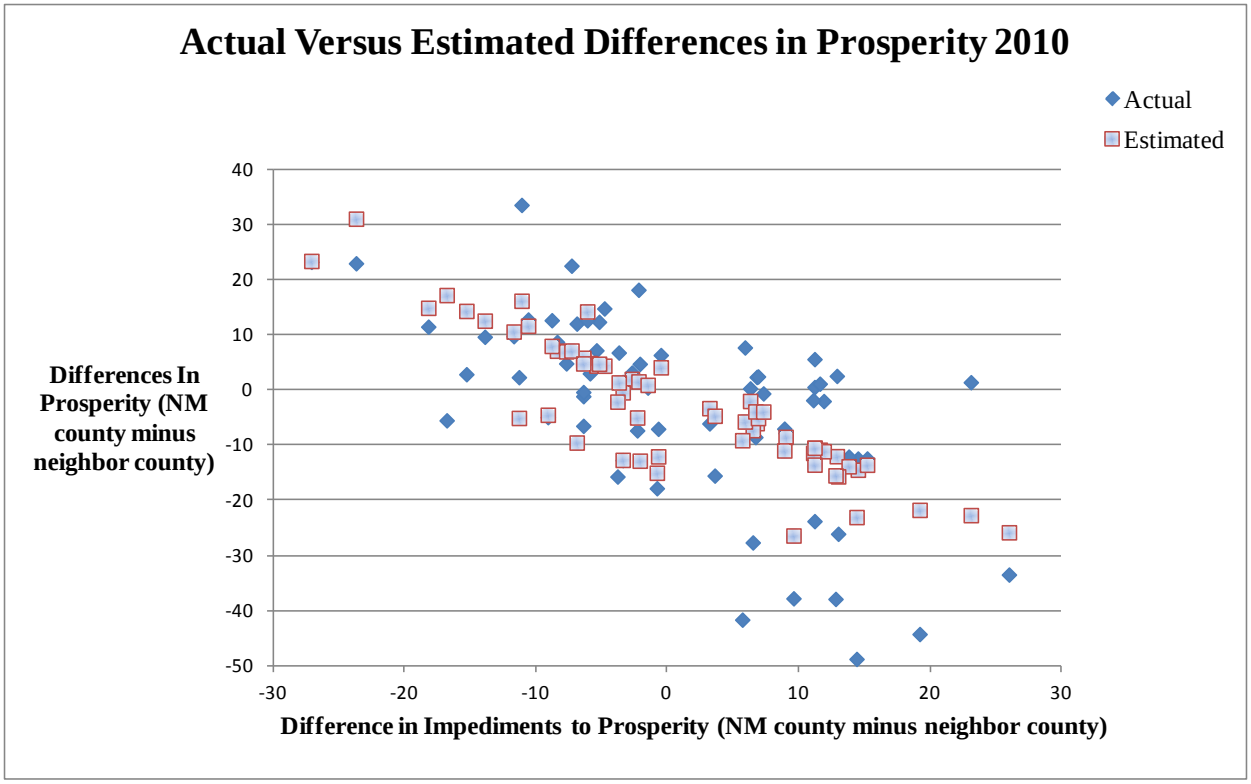


Figure 3: Actual vs. Estimated Differences in Prosperity

Notice that the fit looks pretty good by visual inspection; we see only eight of the 66 observations for which actual prosperity appears quite far from that predicted by the regression.

Problems with the results

The main problem is that we cannot actually measure prosperity. We have to use a proxy variable (private earnings per worker) that we hope will correlate well with prosperity. Certainly there is some contamination in this variable. For example, privilege seeking by interest groups is considered a waste of resources by economists; yet those earnings within private firms are included in private earnings.[22] Some earnings from voluntary exchange are unavailable in data set, primarily those transactions that avoid regulation and taxes in the underground economy.

Similarly, we cannot actually measure the size of impediments to prosperity. While it may seem intuitively appealing, we still have to hope that our proxy variable (state/local earnings as a percent of total earnings) will correlate well with the damage done by impediments to voluntary exchange in their various dimensions (regulation, licensing, labor restraints, taxes, permitting and so forth).

[22] This kind of privilege seeing is known among economists as "rent-seeking" in an extensive literature that has developed. The seminal piece was by Gordon Tullock, "the Welfare Costs of Tariffs, Monopolies, and Theft," *Western Economic Journal* 4 (June 1967), pp. 224-232.

Our assumption that the tradeoff between changes in impediments to voluntary exchange and changes in prosperity is approximately constant (can be represented by a straight line) may be (in fact, probably is) a source of error. How it may influence the results we cannot tell.

Prosperity is a moving target over time, but each regression estimates it at a point in time. The underlying assumption is that measured differences in prosperity change slowly enough that the estimates are representative of reality.

Speaking of reality, it is not realistic to think of the regression model as having stable coefficients over time. They almost certainly change as consumers react to the innovative actions of firms. We can only hope that the estimates are in the ball park with respect to how impediments to voluntary exchange affect prosperity. That seems to be the case for the nine year period between the data sets (2001 and 2010). The estimates were consistent with each other.

One problem with using the size of state/county government as an explanatory variable is that it is almost certainly correlated with the amount of prosperity itself. Lower prosperity means bigger state/local government, primarily from the effect of transfer programs Medicaid and Food stamps. In econometrics speak that means there is likely positive bias in the estimate of state/county government size on prosperity. The implication is that the estimated coefficient of state/local government (B_1) is likely more positive (less negative) than it otherwise would be without the correlation-caused bias. The bottom line is that the size of state/county government *may be even stronger* than suggested by the estimated coefficient.

Some of the observations involve one county paired with multiple counties, each pairing representing one observation. I wondered if this might cause errors in the estimates, so I ran some simulations that randomly dropped some of those observations. The results indicated that the problem caused little or no error. Details are likely of interest only to readers with some knowledge of econometrics, so I have placed them in Appendix G: Observations involving one county in more than one observation.

Conclusions

1. Examination of the incentives of politicians, bureaucrats, interest groups and average citizens by economists leads to hypothesis that all levels of government, including in particular state/county government examined in this study, have a natural tendency to grow too big. This tendency exists due to politicians' tendency to reward privilege-seeking by interest groups, reducing prosperity in the process.
2. Compelling empirical evidence offered herein clearly supports the proposition that economic freedom begets prosperity at the county level. Reduce the size of government by making the state/county more immune to privilege seeking, and its prosperity will increase.

3. Interestingly, we also find compelling evidence that the presence of the federal government within a county tends to reduce prosperity. The greater is its presence the smaller is prosperity, piercing the popular fiction that so-called “multipliers” increase prosperity at the local level.

Recommendations

Assuming that the main objective of government is to promote prosperity within its geographical boundaries, state/county governments must become more resistant to privilege seeking. They must recognize the problem and reduce the counterproductive incentives extant in political process. Here are some prosperity-enhancing recommendations for altering those incentives:

1. Require a super majority (for example, 67%) of the legislature for approving privileged treatment of interest groups.
2. Implement a sunset requirement for all licensing, regulation, minimum wage, environmental rules, certificates-of-need, subsidies, tax breaks and the like.
3. Experiment with especially poor, economically unfree counties by making them special economic zones, exempt from the all impediments to voluntary exchange discussed above. That blanket exemption would have to be durable, so that risk takers would have reasonable assurance that resistance to privilege-seeking will be maintained within the zone. This is particularly appealing for counties containing Indian Reservations with their large, untapped reservoir of human potential.

Appendix A: Previous Studies of Economic Freedom and Prosperity

Two Premier Annual Reports of Global Economic Freedom and Prosperity

The annual report of Economic Freedom of the World

Uses 42 different measures to create an index ranking of 141 countries around the world based on policies that encourage economic freedom. The cornerstones of economic freedom are personal choice, voluntary exchange, freedom to compete, and security of private property. Economic freedom is measured in five different areas: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) freedom to trade internationally, and (5) regulation of credit, labor, and business.

Research shows that individuals living in countries with high levels of economic freedom enjoy higher levels of prosperity, greater individual freedoms, and longer life spans.[23]

The Latest Annual *Index of Economic Freedom*

Countries with higher levels of economic freedom substantially outperform others in economic growth, per capita incomes, health care, education, protection of the environment, and reduction of poverty, according to data collected for the 2013 Index of Economic Freedom[24].

The highlights section of the Heritage report for 2013 gives us good visual interpretation how four indicators of prosperity increase with economic freedom. Figure 4 reproduces the Heritage graphic from its chart 5:

[23] Press release for Economic Freedom of the World: 2011 Annual Report, http://www.freetheworld.com/release.html . The report is copublished by the Cato Institute, the Fraser Institute in Canada and more than 70 think tanks around the world. All of their annual reports are available online at www.freetheworld.com.

[24] Highlights, interactive graphs as well as easily accessible chapters of Heritage Foundation's 2013 *Index of Economic Freedom* may be found at http://www.heritage.org/index/download.

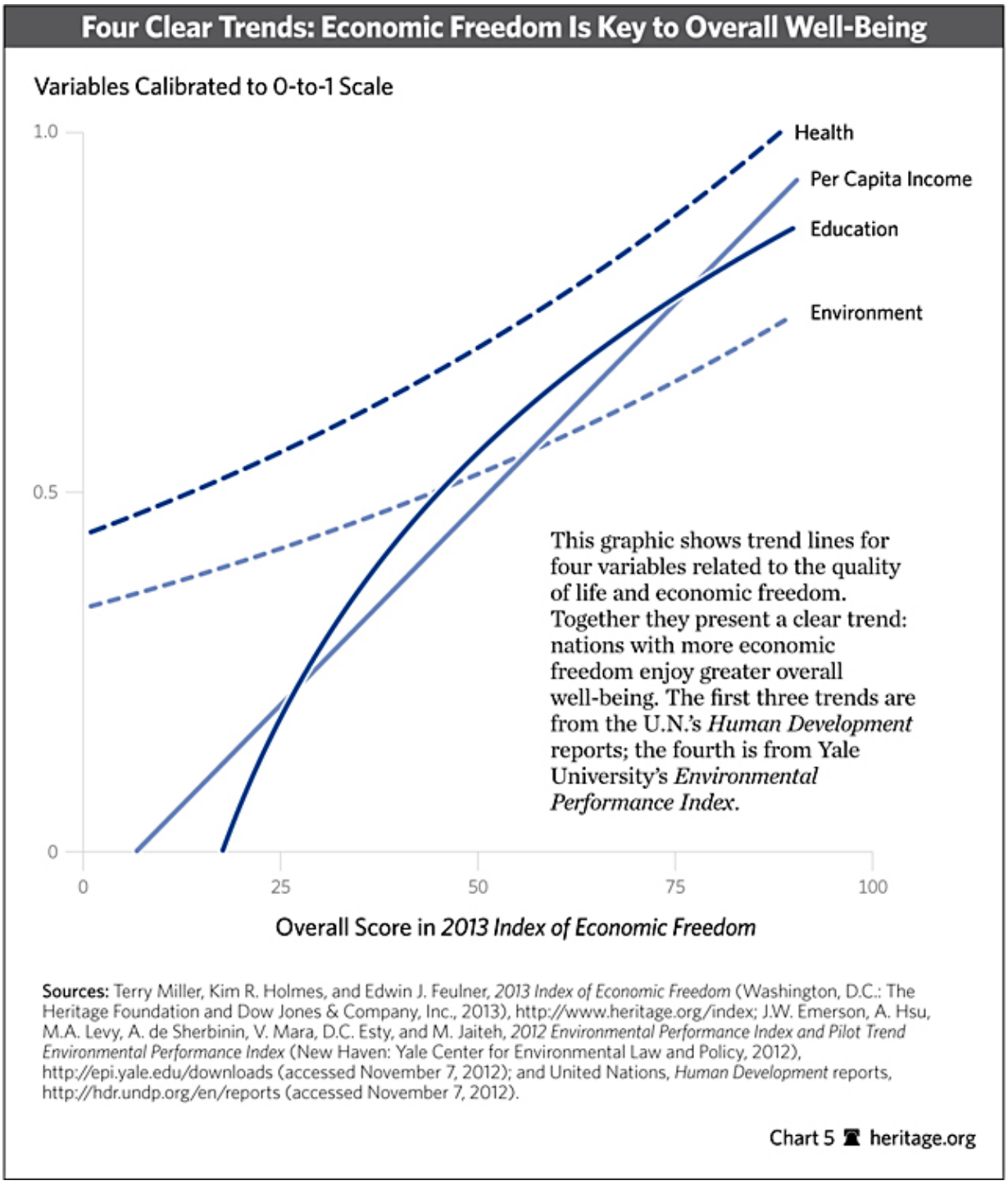


Figure 4: Four indicators of prosperity that increase with economic freedom

Studies of Economic Freedom in North America

More compelling evidence linking economic freedom to prosperity comes from the Fraser Institute's comparison of states and provinces in North America. Indexes of impediments to voluntary exchange and measurements of prosperity for each of the 60 states and provinces

indicate greater economic freedom (fewer impediments to exchange) leads to greater prosperity combined with faster growth rates of their economies.[25] Among the study's 60 states and provinces the economic freedom ranking of New Mexico and its bordering states is as shown in Table 3 (the lower the numerical rank, the greater the economic freedom):

Table 3: Comparison of Ranking of Economic Freedom for States in this Study

Arizona	24
Colorado	8
New Mexico	49
Oklahoma	21
Texas	3

The Mercatus Center at George Mason University has produced a comparative study of personal and economic freedom for the 50 states.[26] Indexes of impediments to voluntary exchange and measurements of prosperity for each of the 50 states once again indicate greater economic freedom (fewer impediments to exchange) leads to greater prosperity. Among the study's 50 states the economic freedom ranking of New Mexico and its bordering states is as shown in Table 4 (the lower the numerical rank, the greater the economic freedom):

Table 4: Mercatus Center's Rankings of Economic Freedom

Arizona	22
Colorado	10
New Mexico	45
Oklahoma	8
Texas	15

Books Explaining the Rationale for Economic Freedom for the Non-economist

Still further evidence linking economic freedom to prosperity comes in two path breaking books entitled *Unleashing Capitalism.* The books are coauthored by a fine group of economists. In fact, the two books are so well written that they should be required reading for legislators and bureaucrats throughout the land. They provide a clear explanation of a wide range of policies and

[25] Nathan J. Ashby, Avilia Bueno, and Fred McMahon; with Deborah Martinez, *Economic Freedom of North America 2011*, Fraser Institute, Vancouver, BC, 2011, http://www.freetheworld.com/efna2011/Complete-Publication-CA.pdf

[26] Jason Sorens and William Ruger, *Freedom in the 50 States: an Index of Personal and Economic Freedom*, Mercatus Center at George Mason University, Arlington, VA, 2011, http://mercatus.org/freedom-50-states-2011

their pitfalls for the non-economist. They are an excellent primer for understanding human interaction written specifically for policymakers[27].

Common Sense Economics: What everyone should know about wealth and prosperity by three prominent economists[28] explains and contrasts human interaction in markets and political process. What needs to be done to promote prosperity? That book explains the intuition much better than I do.

[27] First book: Russell S. Sobel, ed., *Unleashing Capitalism: Why Prosperity Stops at the West Virginia Border and How to Fix it*, Public Policy Foundation of West Virginia, Morgantown, WV, 2007 (winner of the 2008 Sir Antony Fisher International Memorial Award), http://sobelrs.people.cofc.edu/UC/Unleashing%20Capitalism%20WV.pdf. Second book: Peter T. Calcagno, ed., *Unleashing Capitalism: a Prescription for Prosperity in South Carolina*, South Carolina Policy Council Education Foundation, Columbia, SC, 2009, http://sobelrs.people.cofc.edu/UC/Unleashing%20Capitalism%20SC.pdf

[28] James Gwartney, Richard L. Stroup and Dwight R. Lee, *Common Sense Economics: What everyone should know about wealth and prosperity*, St. Martens Press, New York, 1993.

Appendix B: Paired counties in the data sets for 2001 and 2010

Observation	Counties	Observation	Counties
1	Doña Ana - El Paso	34	Quay – Potter
2	Otero - El Paso	35	Quay – Moore
3	Otero – Hudspeth	36	Quay – Hartley
4	Eddy – Culberson	37	Union – Hartley
5	Eddy – Reeves	38	Union – Moore
6	Lea – Winkler	39	Union – Sherman
7	Lea – Ward	40	Union – Dallam
8	Lea – Ector	41	Union – Cimarron
9	Lea – Midland	42	Union – Texas
10	Lea – Martin	43	Union - Las Animas
11	Lea – Andrews	44	Colfax - Las Animas
12	Lea – Gaines	45	Colfax – Huerfano
13	Lea – Dawson	46	Taos – Costilla
14	Lea – Lynn	47	Taos – Conejos
15	Lea – Terry	48	Taos – Alamosa
16	Lea – Yoakum	49	Rio Arriba - Conejos
17	Lea – Cochran	50	Rio Arriba - Archuleta
18	Lea – Hockley	51	San Juan - La Plata
19	Lea – Lubbock	52	San Juan - Montezuma
20	Roosevelt – Hale	53	San Juan - Apache
21	Roosevelt – Lamb	54	McKinley - Apache
22	Roosevelt – Bailey	55	Cibola – Apache
23	Roosevelt – Cochran	56	Catron – Apache
24	Roosevelt – Hockley	57	Catron – Greenlee
25	Roosevelt – Lubbock	58	San Juan – Navajo
26	Curry – Swisher	59	McKinley - Navajo
27	Curry – Castro	60	Cibola – Navajo
28	Curry – Parmer	61	Catron – Navajo
29	Curry - Deaf Smith	62	Grant – Greenlee
30	Curry – Randall	63	Hidalgo - Greenlee
31	Quay – Randall	64	Hidalgo – Cochise
32	Quay - Deaf Smith	65	Hidalgo – Graham
33	Quay – Oldham	66	Grant – Graham

Appendix C: Example of measurements for empirical test

Here is an example of measurements of prosperity, impediments to economic freedom and federal presence for Parmer County, Texas for years 2001 and 2010:

Parmer County, Texas (earnings are in $1,000)		
	2001	2010
Population	9,842	10,302
Per capita personal income (dollars)	27,822	31,584
Farm earnings	99,881	82,071
Nonfarm earnings	144,053	188,753
Private earnings	118,199	150,583
Government earnings		
Federal, civilian	4,194	5,951
Military	380	1,118
State and local	21,280	31,101
Employment (number of full and part time employees)		
Farm employment	1,298	1,198
Private employment	4,198	4,533
Government employment		
Federal, civilian	66	68
Military	24	23
State and local	829	890

Prosperity is measured for each year as the total of farm earnings plus private earnings divided by the total of farm employment plus private employment. That gives us the total of private earnings per worker where farm earnings are counted as private. For 2010 that calculation is the total of $82,071 plus $150,583 divided by the total of 1,198 workers plus 4,533 workers equals $40.6k earnings per worker.

Impediments to economic freedom for each year are measured as state and local earnings divided by the total of farm and private earnings plus federal (including civilian and military) earnings plus state and local earnings. For 2010 that calculation is $31,101 divided by the total of $82,071 plus $150,583 plus $5,951 plus $1,118 plus $31,101 equals 0.11 (state and local earnings are 11 percent of total earnings).

Similarly the percent of federal presence is measured by summing civilian plus military earnings and dividing that total by the total of farm and private earnings plus federal (including civilian and military) earnings plus state and local earnings. For 2010 that calculation is $5951 plus $1,118 divided by the total of $82,071 plus $150,583 plus $5,951 plus $1,118 plus $31,101 equals 0.026 (federal presence is 2.6 percent of total earnings).

Appendix D: Ranking of Counties by Economic Freedom by State

Table 5 Ranking of Counties by Economic Freedom

New Mexico

Curry	9.40%
Eddy	9.60%
Lea	10.50%
Otero	14.90%
San Juan	16.00%
Taos	16.60%
Hidalgo	18.10%
Doña Ana	22.00%
Catron	22.90%
McKinley	24.40%
Union	26.50%
Quay	27.30%
Roosevelt	27.60%
Colfax	28.40%
Cibola	33.60%
Grant	34.50%
Rio Arriba	39.50%

Oklahoma

Texas	15.70%
Cimarron	23.70%

Colorado

Archuleta	16.40%
La Plata	19.80%
Huerfano	22.50%
Alamosa	23.00%
Montezuma	24.80%
Conejos	28.30%
Las Animas	29.90%
Costilla	34.70%

Texas

Dallam	7.30%
Midland	7.40%
Castro	10.20%
Parmer	11.50%
Potter	12.10%
Deaf Smith	12.80%
Ector	13.20%
Yoakum	13.40%
Moore	13.50%
Sherman	13.70%
Hale	14.70%
Hudspeth	15.50%
El Paso	15.60%
Hockley	15.60%
Gaines	15.90%
Bailey	16.00%
Randall	16.20%
Ward	16.40%
Lamb	16.40%
Andrews	16.90%
Lynn	17.00%
Terry	18.20%
Cochran	18.60%
Winkler	18.90%
Martin	19.40%
Swisher	20.60%
Culberson	20.70%
Lubbock	20.80%
Hartley	20.80%
Oldham	23.70%
Dawson	24.40%
Reeves	36.60%

Arizona

Greenlee	8.50%
Cochise	11.40%
Navajo	26.70%
Graham	27.20%
Apache	39.70%

Appendix E: Ranking of Paired County Impediments to Voluntary Exchange Differentials by New Mexico's Most Favorable

Counties	*Impediments diff*
Eddy - Reeves	-27.1%
San Juan Apache	-23.7%
Taos - Costilla	-18.2%
Catron - Apache	-16.8%
McKinley Apache	-15.3%
Lea - Dawson	-13.9%
Taos - Conejos	-11.7%
Curry - Swisher	-11.3%
Eddy - Culberson	-11.1%
San Juan - Navajo	-10.6%
Hidalgo - Graham	-9.1%
San Juan - Montezuma	-8.8%
Lea - Martin	-8.8%
Lea - Winkler	-8.4%
Lea – Terry	-7.7%
Lea - Lubbock	-7.3%
Curry - Randall	-6.9%
Taos - Alamosa	-6.4%
Lea – Lynn	-6.4%
Lea - Andrews	-6.4%
Cibola - Apache	-6.1%
Lea – Ward	-5.9%
Lea - Gaines	-5.4%
Lea - Cochran	-5.2%
Lea - Yoakum	-4.8%
Catron - Navajo	-3.8%
San Juan - La Plata	-3.7%
Union - Las Animas	-3.4%
Curry - Deaf Smith	-3.4%
Lea – Ector	-2.7%
McKinley - Navajo	-2.3%
Lea - Hockley	-2.2%
Curry - Parmer	-2.1%
Colfax - Las Animas	-1.5%
Curry - Castro	-0.8%

Otero - El Paso	-0.7%
Otero - Hudspeth	-0.5%
Lea - Midland	3.2%
Quay - Oldham	3.6%
Union - Hartley	5.7%
Colfax - Huerfano	5.9%
Doña Ana - El Paso	6.3%
Quay - Hartley	6.5%
Hidalgo - Cochise	6.7%
Roosevelt - Lubbock	6.8%
Cibola - Navajo	6.9%
Grant - Graham	7.3%
Union - Cimarron	8.9%
Roosevelt - Cochran	9.0%
Hidalgo - Greenlee	9.6%
Quay - Randall	11.1%
Roosevelt - Lamb	11.2%
Union - Texas	11.2%
Rio Arriba - Conejos	11.2%
Roosevelt - Bailey	11.6%
Roosevelt - Hockley	11.9%
Union - Sherman	12.8%
Roosevelt - Hale	12.9%
Union - Moore	13.0%
Quay - Moore	13.8%
Catron - Greenlee	14.4%
Quay - Deaf Smith	14.5%
Quay - Potter	15.2%
Union - Dallam	19.2%
Rio Arriba – Archuleta	23.1%
Grant - Greenlee	26.0%

Appendix F: Tabular summary of empirical tests

The results from running ordinary least squares and least absolute deviations for the 2001 and 2010 data sets are summarized in Table 6: Regression results for 2001 and 2010 data sets.[29]

[29] It's customary to include the intercept term even though it has no empirical significance.

Table 6: Regression results for 2001 and 2010 data sets

Ordinary Least Squares -- 2001 data

	Difference in size of State/county gov't	Difference in size of federal presence	Intercept
Estimated Coefficients	-0.576	-0.385	-1.694
Estimated standard errors	0.093	0.102	1.085
T-scores	-6.162	-3.765	-1.561

R-square	0.497
R-square adjusted	0.481
Observations	66
Degrees of Freedom	63

Least Absolute Deviations -- 2001 data

	Difference in size of State/county gov't	Difference in size of federal presence	Intercept
Estimated Coefficients	-0.635	-0.355	-0.864
Estimated standard errors	0.071	0.077	0.821
T-scores	-8.970	-4.585	-1.052

R-square	0.486
R-square adjusted	0.470
Observations	66
Degrees of Freedom	63

Ordinary Least Squares -- 2010 data			
	Difference in size of State/county gov't	Difference in size of federal presence	Intercept
Estimated Coefficients	-0.909	-0.516	-0.220
Estimated standard errors	0.135	0.135	1.550
T-scores	-6.723	-3.815	-0.142

R-square	0.515
R-square adjusted	0.499
Observations	66
Degrees of Freedom	63

Least Absolute Deviations -- 2010 data			
	Difference in size of State/county gov't	Difference in size of federal presence	Intercept
Estimated Coefficients	-0.842	-0.562	0.917
Estimated standard errors	0.109	0.109	1.253
T-scores	-7.695	-5.134	0.732

R-square	0.509
R-square adjusted	0.493
Observations	66
Degrees of Freedom	63

Appendix G: Observations involving one county in more than one observation

Some of the observations involve one county in more than one observation. For example, Lea County in SE New Mexico stretches northward and is bordered by a grid of smaller Texas counties. Therefore, Lea County is paired in separate observations with 14 separate neighboring counties in the grid (see observations 6 through 19 in Appendix B). The reason for doing so is to treat Lea as if it were several smaller counties that average to Lea's characteristics. By doing so, we don't lose the information in the multiple pairings.[30] The problem is that including Lea in so

[30] Nearby, non-bordering counties were included as long as major population areas well were within 100 miles of each other and major federal or state highways provided low cost access between them.

many observations may give Lea too much weight in influencing the estimates. To check that influence we ran 100 Monte Carlo trials that dropped 2/3 of the multiple county observations at random. In each trial we redid the regressions with the resulting fewer observations (23 observations on average). The average of estimated coefficient B_1 was -0.784 and coefficient B_2 was -0.615 (100 trials) with average measures of fit staying close to the full sample.

Figure 5 displays what the spread of the estimated coefficient B_1 looked like with 2/3 of multiple-county observations randomly dropped (100 trials):

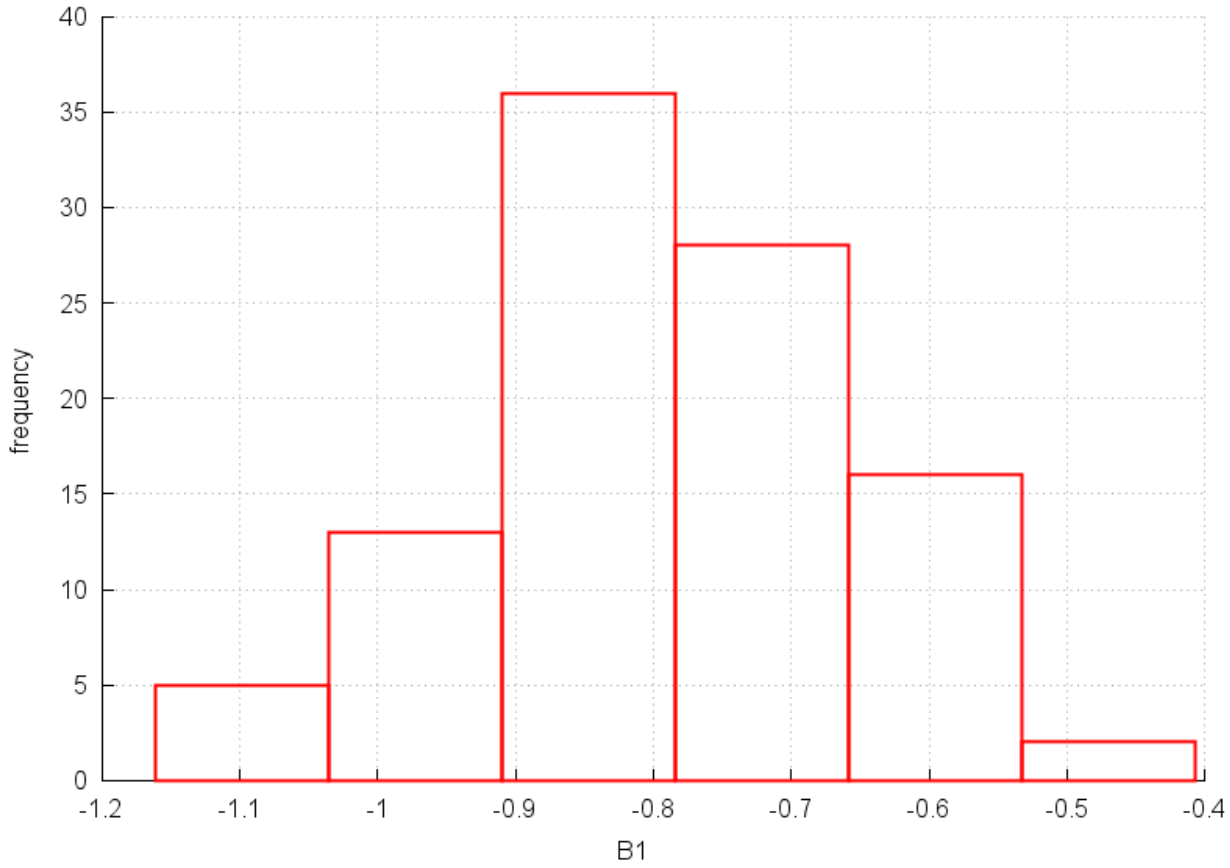


Figure 5: Effect of Randomly Reducing Multi-county Observations by two-thirds (100 trials)

Bottom line is there is little evidence that multiple observations associated with any particular county having multiple neighbors reduced efficiency of estimates.

Appendix H: Two Tales of two Counties

San Juan and La Plata Counties

San Juan County is in the Northwest corner of New Mexico. Its main population centers are Farmington, Bloomfield and Shiprock. The county is known for its production of fossil fuels, and it is a big producer of electricity for the region.

La Plata County, Colorado is north of San Juan. It is known mainly as a tourist area with emphasis on outdoor sports, particularly skiing. Its main population center is the city of Durango, which is also the home of Fort Lewis College.

San Juan measured higher on our economic freedom scale than did La Plata; and its prosperity as we measured it (private earnings per worker) was greater as expected. However, there is a mystery that needs to be solved. Per capita income (an oft used measure of prosperity in other economic freedom studies) in La Plata is substantially higher than in San Juan. The mystery: why are the different measures of prosperity so inconsistent?

Parsing the data on a per capita basis gives us hints as to the reasons:

- San Juan's Native American population is 36.4% compared to 5.2% in La Plata, suggesting that a larger proportion of the population is not in the work force in San Juan.
- 34% of income is transfer receipts in San Juan versus 19.7% in La Plata, suggesting that a larger proportion is receiving various forms of welfare in San Juan. La Plata receives only 45% of Medicaid compared to San Juan and 82% of food stamps compared to San Juan.
- The median age in San Juan residents is 31 versus 35.6 in La Plata, suggesting that a larger proportion of population is retired in La Plata. This conclusion is bolstered by the difference in dividends and interest received in the two counties: 19.2% in San Juan versus 42.4% in La Plata. Moreover, retirement benefits received by La Plata are higher: OASDI received in La Plata is 141% of San Juan and Medicare benefits are 138% of San Juan
- Ratio of workers to population in 2010: San Juan 39% versus La Plata 60%, again suggesting that a larger proportion of the population in San Juan is not in the labor force.

Bottom line: La Plata County appears to have a higher proportion of relatively affluent retirees who are not in the work force while San Juan County has a higher proportion of young, poor Native Americans who are not in the workforce. If those conclusions are correct then calculation of per capita income will be driven up in La Plata compared to San Juan.

Figure 6 below compares the major components of each county's economy.

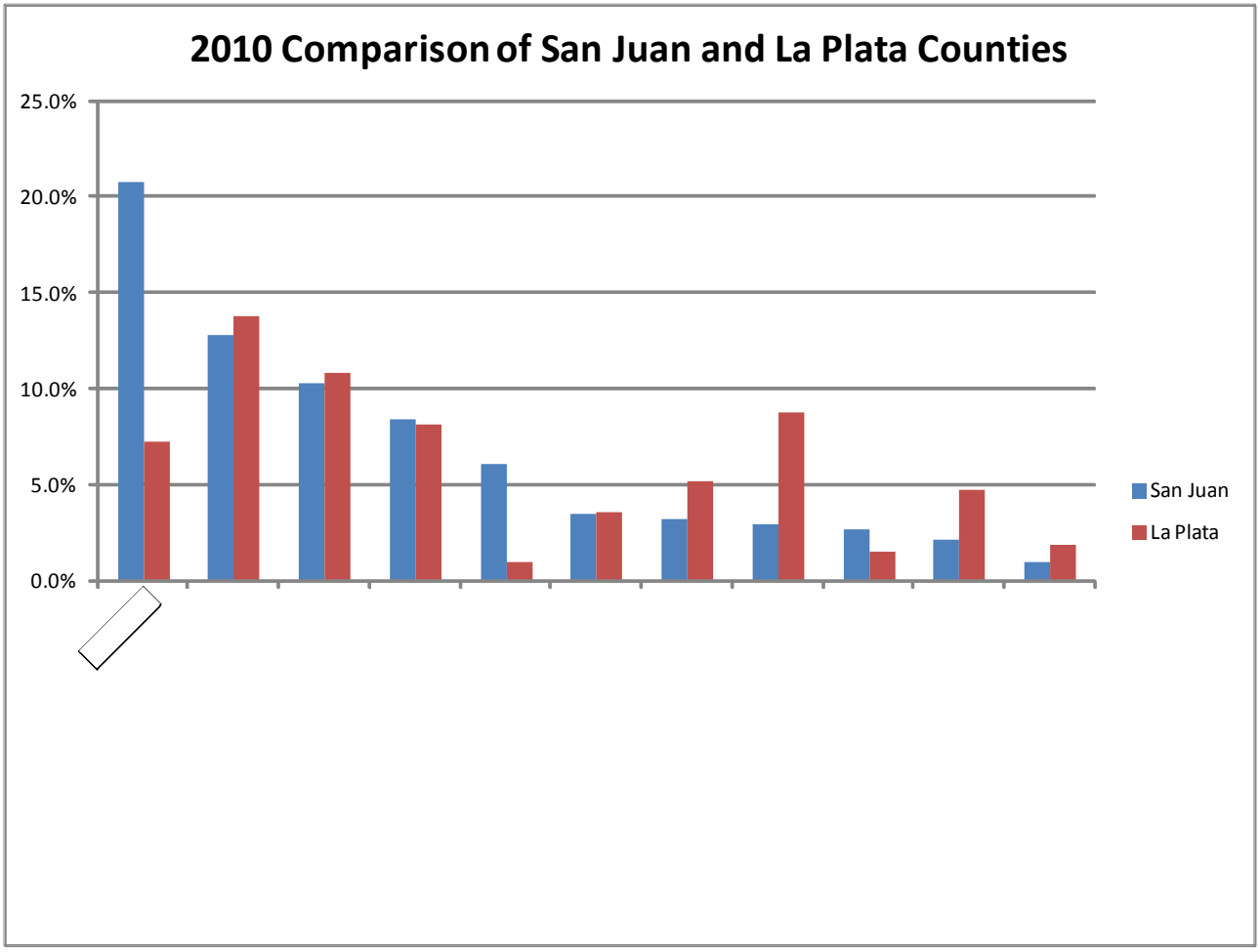
- 

Figure 6: Comparison of San Juan and La Plata Counties

Doña Ana and El Paso Counties

Doña Ana County is in southern New Mexico, just north of El Paso County in Texas. Las Cruces is the main population center in Doña Ana, and the comparatively large City of El Paso is the main population center in the El Paso County.

The regression results predicted that El Paso would be more prosperous than Doña Ana, but Doña Ana actually came out a little ahead. Perhaps there is a tentative explanation for that.

provides a visual comparison of the (mostly private) categories of earnings for each county as a percentage of total private earnings.[31] Of particular note is the second category "professional, scientific and technical services." A significant portion of that category is sales of military hardware and software to the government, so it really is quasi-government earnings. Removal of that category would reduce Doña Ana's prosperity measure by over 40 percent! Inclusion of that category may explain why Doña Ana's actual measured prosperity was greater than predicted vis a vis El Paso in the 2010 regression.

In addition, our interviews of business leaders in Las Cruces (many of whom do business on both sides of the border) opined that El Paso was more economically free. In particular, the permitting process moves much faster and government officials are much more business friendly in El Paso.

[31] Source: Bureau of Economic Analysis

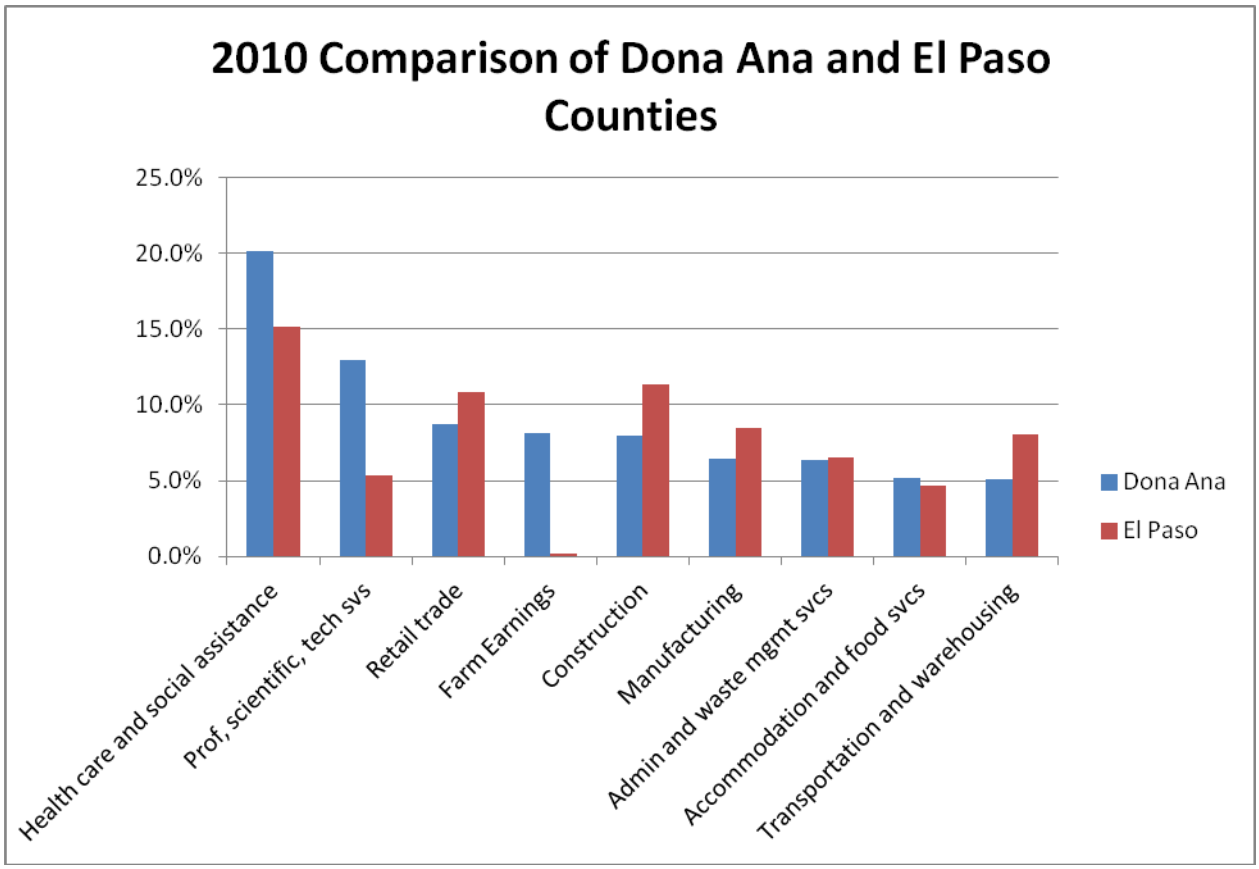


Figure 7: Earnings Percentage for Major Economic Activities in the Two Counties

It should be noted that El Paso developed as a manufacturing hub while Doña Ana did not. Perhaps it was El Paso's greater economic freedom that encouraged entrepreneurs in manufacturing.

The following overall summaries of the economies of Las Cruces and El Paso were obtained from city-data.com:

Description of City of Las Cruces (Doña Ana County)[32]:

> *The four mainstays of the local economy are agriculture, commerce, education, and defense/aerospace. Since World War II, federal, state, and local government have become the main source of jobs in the area, due to the proximity of New Mexico State University (NMSU) and White Sands Missile Range. NMSU is the city's largest employer and it also provides training and education for research facilities at White Sands. White Sands Missile Range is the Army's largest installation, and the largest military installation in the Western Hemisphere covering more than 2.2 million acres, and is used by the Navy, Air Force, and*

[32] http://www.city-data.com/city/Dona-Ana-New-Mexico.html

NASA. Other government agencies, universities, private industries, and even foreign militaries conduct research there as well.

Although Las Cruces was never primarily an industrial town, manufacturing and commerce has been growing in importance. The North American Free Trade Agreement, or NAFTA, passed in 1994, has influenced this trend, as has the opening in 1991 of the border crossing at Santa Teresa, just 40 miles south of Las Cruces. Many companies are finding it advantageous to relocate in the Mesilla Valley area in order to do business with maquiladoras, (factories) in Mexico. NAFTA and the Mexican government's maquiladora program enacted in the 1960s encourage this type of trade by lowering or completely eliminating tariffs. For example, a U.S. company may send automobile parts to be assembled in Mexico; when the assembled car is shipped back, duties are paid only on the value added in Mexico. Molded plastics and electronic components are the top materials purchased by the maquiladoras.

Description of City of El Paso (El Paso County)[33]:

El Paso's economy is impacted significantly by the Mexican government's Maquiladora Program. Established in 1965, the program was created to help alleviate unemployment on the U.S.–Mexico border by allowing non-Mexican companies to establish manufacturing operations in Mexico to produce goods for exportation. El Paso's sister city Ciudad Juárez has more than 300 such plants employing approximately 195,000 workers, many of them El Paso residents. More than 70 of the maquiladora plants established in Ciudad Juárez are owned by Fortune 500 companies operating in telecommunications, manufacturing of medical supplies, consumer appliances, electronics, and automotive parts.

[33] http://www.city-data.com/city/El-Paso-Texas.html