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### County Government Structure and Expenditure

Dovlet H. Babajanov

*Minnesota State University - Mankato*

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**County Government Structure and Expenditure**

By

Dovlet Babajanov

A Thesis Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Public Administration

American Administration Track

Minnesota State University, Mankato

Mankato, Minnesota

July, 2014

County Government Structure and Expenditure

Dovlet Babajanov

This thesis has been examined and approved by the following members of the student's committee.

Scott Granberg-Rademacker \_\_\_\_\_  
Advisor

Ihsuan Li \_\_\_\_\_  
Committee Member

Kevin Parsneau \_\_\_\_\_  
Committee Member

## **Abstract**

This research inquired into whether government structure has any influence on expenditure. On the national sample of U.S. county governments several hypotheses were tested. To estimate the influence of structure on expenditure, a linear regression analysis was used. The findings suggest that government structure does have an impact on agencies' expenditure levels. Specifically, findings indicate that traditional Commission structure tends to spend the least, followed by Commission-mayor and the most expensive being Commission-manager.

Dovlet Babajanov  
Master of Public Administration  
Minnesota State University, Mankato  
July, 2014

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## **Introduction**

U.S. county government's area is a fertile ground for research, but has not garnered the attention states, cities, and the federal government has. The majority of current literature has analyzed city government reform and its consequences, leaving out county governments. Since counties are major service providers, changing their structure may have a considerable impact on various aspect of its governance such as policy decisions, expenditure levels, and service delivery among others (Marando and Reeves, 41).

Using a national sample of counties, this research focuses on whether changing county government structure will have any impact on its expenditure levels. It will be argued that altering county governmental structure will influence county expenditure levels. The structural arrangement of political actors provides a framework of constraints and incentives, which in turn gets reflected on expenditure. Specifically, it will be argued that changing traditional commission style government structure to commission-manager, commission-administrator, or commission mayor will increase expenditures.

## **Institutional Background**

Historical development of county governments varied in different parts of the country due to diverse views and desires of colonial settlers. In New England, counties mostly performed judicial functions while cities provided governing along with economic and security services (NACo 2009, 6). Counties in New York and Pennsylvania developed political authority while in Virginia they established themselves as dominant local government entities (NACo 2009, 6). In general, however, the role of counties was primarily seen as an "arm of state government," thus only exercising the authority that

was given to them by state governments. This notion was supported in 1868 Iowa Supreme Court case *Clinton vs. Cedar Rapids and the Missouri River Railroad*. Justice Dillon opined that “Municipal corporations owe their origin to, and derive their powers and rights wholly from, the legislature. It breathes into them the breath of life, without which they cannot exist. As it creates, so may it destroy. If it may destroy, it may abridge and control” (24 Iowa 455; 1868). This became known as Dillon’s Rule.

In 1871, Chief Justice Coley of the Michigan Supreme court in *People vs. Hurlbut* opined that local governments have an inherent right to self-determination (24 Mich. 44, 108; 1871). This sparked an opposing view to Dillon’s Rule, requiring flexibility in self-determination. In 1940s and 1950s in an attempt to provide more and improved services county reforms and structural changes started taking place (NACo 2009, 6). Reform movement resulted in many counties nationwide adopting home rule, altering their structure and increasing their service provisions.

Traditionally, most counties had a commission form of governing structure. The commission usually consisted of three to five commissioners who were elected from single member districts or at-large elections (NACo 2009, 7). The commissioners were given both legislative and executive powers to manage counties. The lack of a single executive and aggregation of power in commissions have been the major criticisms of county government structure.

The adoption of home rule allowed counties to gain wider authority of self-determination in structural, functional and fiscal areas (NACo 2009, 7) Structurally counties altered themselves by either creating a chief executive position appointed by commission (hereinafter commission-manager) or at-large elected executive (hereinafter



commission-mayor). The latter completely separates executive and legislative powers and usually possesses veto power.

Functional changes were mostly adopted in the name of attempting to meet the growing demands of service needs. Home rule counties were no longer required to seek approval from the state government while providing services that were not mandated by the state such as libraries, parks and recreation, cultural affairs and others. Other functional changes usually included flexibility in regards to agreements with neighboring local governments consolidating some of the services, thus utilizing economies of scale (NACo 2009, 8).

In the fiscal area counties that adopted home rule were given authority to raise revenues through several means. Taxing authority varied widely as to areas where tax is allowed to be levied and the percent. Another source of revenue was allowance of issuing bonds. These were generally used for the construction of public facilities such as parks and libraries. Counties were also given authority to charge user fees for delivering specific services to certain geographic areas or groups (NACo 2009, 8).

### **Literature Review**

Majority of research analyzing relationship of government structure and expenditures focused on cities and municipalities. However, there is a small number of empirical works conducted specifically on counties. Bradbury and Stephenson (2003) focused on whether "Law of 1/n" held true for county governments. "Law of 1/n" states that there is a positive correlation between the number of elected district representatives in legislature and government spending (Bradbury and Stephenson 2003, 187). Representatives (commissioners) allocate spending from common tax base bear part of

total cost. Thus, as the number of districts increase the cost born by each district becomes smaller, this in turn leads to larger projects being approved (MacDonald 2008, 460). On the sample of 154 counties of Georgia the authors found that the number of commissioners is positively correlated with county government expenditures, which provided support that the theory holds true on local level. The findings suggested that adding an extra commissioner, regardless of the size of the commission, led to 4.4 percent increase in total expenditure per capita and 5 percent increase in net expenditure. In dollar terms it would be \$41.23 per capita of total expenditure and \$43.39 per capita of net expenditure. The authors also found that the relationship holds true for the following budget components: welfare, health, hospital expenditures, natural resource and sewage. The positive relationship was not found for highway spending.

Morgan and Kickman (1999) studied whether changing county government structure from traditional commission to a commission-mayor or a commission-manager had any effects on revenue and expenditures. Their findings indicated that changes in government structure for counties had no effect on fiscal behavior. Another finding was that intergovernmental revenue was positively correlated with both reformed and unreformed county structures, thus supporting that grants-in-aid stimulate additional spending. For unreformed (commission) government structure coefficient was .36, which means for every 1 percent increase intergovernmental revenue county government expenditure increases by .36 percent each year. In addition, the coefficients for unreformed counties for intergovernmental revenue were higher, which the authors interpreted as reformed counties being less dependent on aid money. As for regions,

Middle Atlantic region reformed counties received more money and had higher expenditure; the authors were not sure how to interpret these findings.

Benton (2003) analyzed whether changing county government form had any impact on their ability to raise revenue. A sample of Florida counties showed that adopting home rule charter (changing government to commission-mayor or commission manager) had significant effects on the ability to raise revenue. The author suggested that a change in government structure gives counties more flexibility from state government thus allowing them to raise more revenue in contrast to traditional commission counties. In addition, the author found that while population was significant, the adoption of a home rule was a better predictor of sales tax revenue.

Campbell and Turnbull (2003) looked into whether there was a difference in expenditure levels between elected official and professional manager in counties and municipalities. The authors found that government structure, both for municipalities and counties had no significant effect on their spending. The authors also suggested that this could be due to the trade-offs between managerial proficiency and principle agent effects of professional rather than elected management.

Morgan and Pelissero (1980) analyzed whether reformed cities (with manager, at-large election and non-partisan ballots) taxed and spent less than unreformed ones. To measure that effect authors used a quasi-experimental time-series design. They found that reformed cities had little to no effect in the long run on the basic fiscal decisions. Thus, based on these findings they claimed that reforming government structure of a city would not decrease taxing and spending in the long run.

Deno and Mehay (1987) inquired whether a council-manager form of city government is more efficient than mayor-council. Their findings indicated that there are no significant differences between these two forms of government. The findings support the hypothesis that the median voter was the decisive determinant in budget determination. The authors also found that lower wage rates in mayor-council cities were offset by higher fringe benefits in those cities, thus revealing no difference in total labor compensation.

Zax (1989) looked into whether citizen initiative influenced local public expenditures and found that government expenditures per capita are significantly higher in both states and municipalities in which citizen initiative was present. On the state level, initiative increased direct state expenditures per capita by approximately \$265. As for municipalities, initiative increased direct expenditures per capita by \$45. The author also found that expenditures increased significantly with the increase of percent of population proportions in rental units. On state level 1% increase of population proportion in rental units led to 28.8% increase in expenditures while on municipality level 1% change of population proportion led to 6.67% increase in expenditures.

Farnham (1990) examined whether direct citizen influence- the initiative, referendum, and recall-had any effects on level of local public expenditure. A national sample of 735 cities with population of 10,000 or more people was used for the study. Author divided the sample into three categories according to the number of direct democracy elements. Earlier studies (Pom-merehne 1978) suggested that the size of the income and tax price elasticities should increase as the number of direct democracy elements increased. However, the findings in this study did not reveal any pattern

regarding the estimated income and tax-price elasticities. The largest elasticities were found in communities with only one direct democracy element, which was typically the initiative. For the second regression author used the entire sample in which only referendum had significant effect on expenditure but the effect was positive, not negative as hypothesized. For the third regression author divided the sample by geographic regions, since the usage of democracy elements varied by geographic region along with the expenditure levels. The results were that initiative had significantly negative effect on expenditure in western communities while recall had significantly negative effect in the northeast. Despite these findings author reported that overall influence of the direct democracy elements on expenditures was not strong even in homogeneous geographic areas. The coefficients of the council-manager or commission government and at large council variables were not significant in any of the equations.

Sass (1991) constructed a model of municipal government choice (treated as endogenous) between representative and direct democracy. His findings suggested that government structure (when endogenous) did not affect school expenditure levels. However, opposite was true when government structure was treated as exogenous. Per capita school expenditures were sufficiently lower in representative democracies than direct democracies. For non-educational expenditures, however, both models suggested that municipal expenditures were not significantly affected by the government structure.

Reid (1991) explored whether institutional or non-institutional factors had stronger effect on local public expenditure decisions. The results of the study revealed that local public expenditure decisions reflected the distribution of voter demands regardless of the institution of governance. Both the median and the mean of voter's

expenditure demands tracked actual expenditure decisions well, holding everything else constant. Government structures, on the other hand, did not reveal any important independent effects upon collective expenditure decisions. Thus, the author suggested based on this sample of the study that in order to manage public expenditure altering government structure, the method of selecting elected officials and management was not sufficient.

As for elections, Southwick (1997) considered the effects on expenditure of at-large elections versus district representation on a sample of 1812 cities with population of 10,000 or more residents. The author found that expenditures, debt, and taxes were significantly and substantially higher in cities with district representation than in cities with at-large representation. In addition, several demographic variables were significant. The percentage of owner occupancy and percentage of white population were significant factors reducing expenditures, while education and initiative increased the level of expenditures.

Baqir (2002) inquired into whether the number of commissioners impacted city expenditures. Findings indicated that government size did increase with the number of commission members in a city government. In addition, the author found that government size increased with the racial heterogeneity of the city and in cases when income distribution is skewed. Further the author looked into the question whether the correlation between the number of council members and government size could be influenced by elections at-large or by a strong mayor (with veto power). Author found that election at-large had no effect while strong mayor was able to break the correlation between the number of commissioners and larger expenditures.

MacDonald (2008) examined whether form of government, size of the city commission, and election method of commissioners had any impact on expenditure levels. Author suggested that earlier studies may have had been subject to omitted variables bias due to the use of cross sectional estimation. The findings from cross-sectional estimation for the study did in fact show a positive correlation between commission size and expenditures however once fixed effect estimation was used the relationship became insignificant. Author suggested that the findings indicate that logrolling was not present or insignificant when it came to city governments.

Coate and Knight (2010) analyzed which form of city government, mayor-council or manager council, had less expenditure. According to the fiscal policy determination theory government spending should be less in the mayor-council form of government (Coate and Knight 2010, 20). The authors incorporated cross-sectional and panel analysis to test the hypothesis, and their findings support theoretical expectation: mayor-council cities had significantly less government spending. Their findings using panel analysis suggested that per-capita spending was approximately 9% lower in cities with mayor-council form of government.

In general, current literature reports mixed results on impact of government structure on expenditure levels. This study will contribute to the literature in several ways. First, the question of whether government structure has any impact on expenditure levels will be analyzed on the largest sample of county governments. Second, analyzing the matter on a more homogenous data may reveal different results than previous studies. In addition, having three datasets with five year intervals will ensure robustness of findings.

## Theoretical Model

Origins of the nation state and the role of government have been one of the most theoretically debated topics among and within disciplines. One of the well understood theories of the state is the theory of public good (Hardin 1997, 21). Theory suggests that, first, an individual has an incentive to join the collective action in order to increase his/her own utility since it has more potential to eliminate some of the external costs and secure some of the external benefits. Second, an individual has no incentive to bear the costs of creating a good (public good) that would also be enjoyed by the public (other individuals). Thus, it has been presumed that people intentionally created state/government in order to ensure the above mentioned. The creation of government also imposes costs on public, thus taxes are collected as a form of a payment for the goods and services provided by the government.

On the other hand, Samuelson differentiated two goods “*private consumption goods* –  $X_1, X_2, \dots, X_n$ ” and “*collective consumption goods*:  $X_{n+1}, X_{n+2}, \dots, X_{n+m}$ ” (i.e. pure public goods), where X is a good. Pure public good was defined by Samuelson as “*collective consumption goods* which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good” (Samuelson 1954, 387) This characteristic became known as *non-rivalry*. Another characteristic of pure public good is the *non-excludability* which postulates that an individual or a group cannot be excluded from consuming the good.

Public goods provided by local governments should be differentiated from pure public goods since they possess characteristic of “*privateness*” (Stiglitz 1982, 3). In other



words, the beneficiaries of *local* public goods are only the people who belong to that community not the whole society.<sup>1</sup> In addition, unlike a public good that is provided nationally in which people do not have a choice to opt out from tax, with *local* public goods people have an option of locating themselves into areas that meet their preferences.

Tiebout's model of local public good states that each individual, just as in the private market of goods, would be seeking to get to the highest level of indifference subject to a given price and tax by locating themselves in a community of their preference (Tiebout 1956, 418). Thus, various communities are competing for residents just as private companies compete for customers. The author argues that this competition leads to efficient allocation of public goods.

Stiglitz's model on the other hand argues that when it comes to local public goods individuals are utility takers, thus locating or relocating of one individual from one community to another does not have an influence on the price or quantity of local public good provided by municipalities. The model disputes Tiebout's argument of local public goods being Pareto efficient. Stiglitz points out that Tiebout's model does not address the three recognized problems associated with the delivery of public goods. First is the *revelation problem* which states that unlike in private market where preferences are registered by direct purchase of goods in public goods market, due to taxes, individuals have incentive not to reveal their true needs. Second is the *social choice problem* establishes that there is no "social choice mechanism satisfying the commonly accepted desiderata of (i) non-dictatorship; (ii) transitivity; (iii) independence of irrelevant alternatives; and (iv) Pareto optimality". The third is *management of public good* which is

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<sup>1</sup> This assumes that people cannot belong to several communities or use amenities in their neighboring communities. In addition, it assumes that there are no "spill-over" effects.

that citizens do not have incentive to gather information while selecting their public managers and that the latter's incentive to provide the public good is "absent or far from perfect" (Stiglitz 1982,1). This stems from the *self-interest axiom* stating that an individual is primarily interested in furthering his/her own goals and only after that providing benefit to others. Thus, for elected officials their interest would be remaining in the office.

Downs (1957), Buchanan and Tullock (1962) along with Niskanen (1971) proposed that government should not be perceived as an entity that attempts to maximize the welfare function for society but rather analyze its components separately. Bureaucrats, voters, businesses and legislators face different sets of constraints and incentives which as a result impacts the overall decision making process of government. The structural arrangement of political actors provides a framework of constraints and incentives. Thus, what should be examined is the influence of differing political institutional structure on political outcome.

In a traditional commission structure if members are elected from single member districts, they are incentivized to return expenditures to their respective districts. Weingast, et.al (1981) formalized that representatives (commissioners) who allocate spending from a common tax base only bear part of the cost, thus as the number of representatives increase so does the spending. The cost born by each district becomes smaller as the number of districts increases thus leading to larger projects being approved (MacDonald 2008, 460). The relationship is known as the "Law of 1/n".

If commissioners are elected at large though, their incentive to pander to the interests of certain district gets muted to a certain level. Commissioners may still favor

certain districts and/or groups. However, such behavior is less likely to occur since it may result in alienation of other districts and/or groups within a county.

Buchanan and Tullock (1962) argued that political actors will realize that “collective choices are not unique and isolated events. As rational participants, individual commissioners will recognize the time sequence of political choices which in turn will cause them to seek ‘gains from trade’ when possible” (121). Commissioners will trade their votes among each other in order to pass their legislation. Commonly known as “logrolling” it is likely to take place regardless whether commissioners are elected at large or from single member districts. This may have a stronger effect on determining the influence of commission size on expenditure, since as the number of commissioners increase, logrolling becomes inevitable in order to get projects approved (MacDonald 2008, 460). This, in turn will lead to more projects being approved thus raising overall expenditure. Thus, it can be hypothesized that as the number of commissioners increase so would the expenditures of a county.

Deno and Mehay (1987, 628) argued that in a commission-manager structure, political pressures faced by commissioners are conveyed to an appointed manager. Thus, appointing a manager does not change political spectrum, which could potentially ensure that spending is close to the needs of the median voter (Deno and Mehay 1987, 628). As for managers’ incentives, they are contingent on whether commissioners reward him/her for cost-minimizing behavior (629). However, managers prospects depend upon the size of the budget and employees managed, thus he/she is incentivized to increase the budget of the entity. In addition, counties that go through structural changes also secure wider fiscal authority, which allows them to raise revenue. Thus, theoretically it could be

expected that the expenditures for this structure would be higher than expenditures from a traditional commission.

In a commission-mayor structure, the fact that mayors face re-election provides an incentive to pay closer attention to the needs of voters. In addition, in counties where commissioners are elected by single member districts, mayors provide a counter-balance to the commissioners' incentive of the Law of 1/n. As for logrolling though, this structure does not seem to provide any mechanisms to influence the behavior. In fact the mayor will most likely utilize it in order to gain support for his/her project(s). The availability of direct citizen influence tools such as initiative, referendum, and recall should have an adverse effect on this behavior, since elected officials will realize that too much logrolling might cost them their seat. As for expenditures, counties that adopt this structure also attain wider fiscal authority, which gives them more flexibility when it comes to raising revenue. Thus, when it comes to expenditure it can be hypothesized that for this government structure it will be higher than the commission structure, since the mayor will seek county-wide projects and utilize fiscal flexibility, which will increase expenditure.

The theoretical expectation of expenditure comparisons between commission-mayor and commission manager is mixed. Booms (1966, 188) argued that managers, being professionally trained in public management and appointed instead of elected, are isolated from special interest lobbying which in turn should result in lower expenditures. However, Coate and Knight (2010, 18) argued that it is the elected executive who would have adverse impact on expenditures due to separation of powers and political competition, which would keep both entities in check.

Based on the information provided above the following hypotheses are to be tested.

H<sub>1</sub>: County government expenditure for traditional commission structure will increase with increase of the number of commissioners.

H<sub>2</sub>: County government expenditure will be higher for commission-manager structure than for traditional commission structure.

H<sub>3</sub>: County government expenditure will be higher for commission-mayor structure than for traditional commission structure.

### **Data**

The data for the study was attained from the International City/County Management Association's *Form of Government* surveys for 1997, 2002 and 2007 years. The survey collects data on the structure of county governments, election systems, provisions for referendum or recall, term limits, and the powers and authority of the county manager/mayor and commission. It is conducted every five years and is mailed directly to county clerks. For the year of 1997 it was sent to 3,052 counties, out of those 1,069 counties (35%) responded to the survey. For the year of 2002 the survey was sent to 3,046 counties out of which total, 992 counties (32.6%) responded to the survey. As for the year 2007 the survey was sent to 3,039 counties out of which 1,102 counties (36.3%) responded to the survey. The data is perhaps the most recent and comprehensive datasets available on the subject. The demographic and expenditure data for corresponding years for each county were obtained from U.S. Census Bureau's *Historical Finances of Individual Governments: Fiscal Years 1967 and 1970 - 2007* database. It contains over 500 variables on government revenues, expenditure, debt, cash and security holdings.

**Table 1: Summary Statistics**

	<b>Mean Expenditure (in thousands of dollars \$000)</b>		
	<b>1997</b>	<b>2002</b>	<b>2007</b>
<b>Non-binding referendum</b>	\$53,670.36	\$104,037.8	N/A
<b>Recall</b>	\$41,669.88	\$43,530.24	\$49,238.26
<b>Petition/protest referendum</b>	\$94,657.57	\$51,785.97	N/A
<b>Combination of several</b>	\$90,218.33	\$98,258.25	\$140,612.4
<b>Government form variable</b>			
<b>Commission</b>	\$21,181.03	\$18,903.85	\$33,410.15
<b>Commission-administrator</b>	\$133,976.1	\$67,335.97	\$127,412.7
<b>Commission-manager</b>	N/A	\$178,287.3	\$254,126.3
<b>Commission-mayor</b>	\$86,855.6	\$111,564.5	\$140,166
<b>Direct citizen influence variable</b>			
<b>Initiative</b>	\$31,029.13	\$19,411.6	\$45,929.76
<b>Legislative referendum</b>	N/A	N/A	\$126,593.5
<b>Popular referendum</b>	N/A	N/A	\$85,070.39
<b>Binding referendum</b>	\$63,542.47	\$56,774.28	N/A

In all three datasets the mean expenditures for different forms of government structure vary considerably. As it was hypothesized Commission form of county government has the lowest mean expenditure, while Commission-manager has the highest. It is worth noting that the mean expenditure for Commission-administrator for 2002 is nearly half of what it is for 1997. Among all government forms the Commission-manager has the largest increase in Expenditure (\$75,839), followed by Commission-administrator (\$60,077) from 2002 to 2007 years. As for direct citizen influence variables, the mean Expenditure for counties which allow several elements has the highest mean, while the lowest mean Expenditure belongs to Initiative and Recall.

### **Empirical Model and Methodology**

To estimate the influence of county government structure on expenditure, a linear regression of the following form was used:

$$\ln(\text{Expenditure}) = \beta_0 + \beta_1 (\ln(\text{population})) + \beta_2(\text{government form}) + \beta_3 (\ln(\text{intergovernmental revenue})) + \beta_4 (\text{veto power}) + \beta_5 (\text{commission size}) + \beta_6 (\text{commission election method}) + \beta_7 (\text{direct citizen influence}) + \mathcal{E}$$

In this equation the dependent variable is natural logarithm total county expenditure without payments on interest for 1997, 2002 and 2007. The independent variables are: natural logarithm population (continuous); three county government forms for 1997: (0) other forms, (1) commission (dummy), (2) commission-administrator (dummy), (3) commission-mayor (dummy), and four forms for 2002 and 2007: (1) commission (dummy), (2) commission-administrator (dummy), (3) commission-manager (dummy), and (4) commission-mayor (dummy); natural logarithm total intergovernmental revenue (continuous); veto power (dummy variable); commission size (continuous); two categories of commission election method for 1997: (1) at large and (2) by ward/district and three categories for 2002 and 2007: (1) at large, (2) by ward/district (categorical) and (3) combined (categorical); six direct citizen influence tools for 1997 and 2002: (1) initiative (dummy), (2) binding referendum (dummy), (3) non-binding referendum (dummy), (4) recall (dummy), (5) petition/protest referendum (dummy), (6) combination of several (dummy), and five for 2007: (1) initiative (dummy), (2) legislative referendum (dummy), (3) popular referendum (dummy), (4) recall (dummy), (5) combination of several (dummy).

All estimated models included seven variables, three of which are continuous and four are categorical. Categorical variables were recoded and  $(m-1)$  independent columns were created for each, where  $m$  is the number of categories in each variable. Residuals and variables of this model were examined to check the assumptions of normality, linearity, and homoscedasticity. Upon checking the normality assumption by kernel

density, “Q-Q” and “Normal Probability” plots it was suspected that residuals were not normally distributed and transformation of the response variable is needed. Because the response variable takes only positive values, may be skewed, and the ratio of the minimum value to the maximum value of the dependent variable is large natural logarithm transformation was applied. After the transformation the above mentioned plots were generated and they did not suggest any severe violation of normality assumption (i.e. residuals are approximately normally distributed).

Independent variables were also checked for linearity by the aid of scatter plots of response variable against predictors and augmented partial residual plots. These plots suggested logarithmic transformations for Population and Intergovernmental revenue variables. Once transformed, augmented partial residual plots were made and they did not suggest severe violations of linearity assumption. It is also worth noting that once Population and Intergovernmental revenue variables were corrected for linearity via transformation.

To check the homoscedasticity of residuals, the residual plot was created prior to all transformations, which revealed heteroscedasticity of residuals for all three models. Once natural logarithm transformation to the outcome variable as well as the two above mentioned continuous variables was employed the residual plot revealed that constant variance assumption after transformation is not severely violated.

### **Regression Results and Discussion**

According to the findings of regression analysis for year of 1997, 10% increase in Population variable will lead to approximately 4% increase in Expenditure, significant at  $P\text{-value} < 0.01$ . As for government structure variables, changing the structure from



Commission to Commission-administrator will lead to 23.90% increase in Expenditure, significant at P-value  $< 0.01$ . The coefficient for Commission-mayor variable is negative, however it is not statistically significant. As for Intergovernmental revenue, 10% increase will lead to approximately 4.6% increase in Expenditure, significant at P-value  $< 0.01$ . The Veto power and Commission size are statistically insignificant for this dataset. As for election method variables changing from district/ward election the combination of both methods will lead to 21.39% increase in Expenditure, P-value  $< 0.01$ . Among the direct citizen influence all variables for the 1997 dataset have positive coefficients, however none are statistically significant in this dataset.

For year of 2002 findings of regression analysis indicate that 10% increase in Population variable will lead to approximately 4.6% increase in Expenditure, significant at P-value  $< 0.01$ . As for government structure variables, this year's data captured the effects of an administrator and a manager. The coefficient of Commission-administrator is positive however is statistically insignificant in this dataset. Changing the structure from Commission to Commission-manager will lead to 19.11% increase in Expenditure, significant at P-value  $< 0.01$ . As for changing the form from Commission to Commission-mayor will lead to 17.31% increase in Expenditure, significant at P-value  $< 0.05$ . Ten percent increase in Intergovernmental revenue variable will lead to 4.2% increase in Expenditure, significant at P-value  $< 0.01$ . The availability of Veto power and Commission size are statistically insignificant in this dataset. Election method variables indicate that changing from district/ward election to Combined elections will lead to 17.38% increase in Expenditure, significant at P-value  $< 0.05$ . As for Direct citizen influence elements several are statistically significant. Findings indicate that allowing

Recall versus Initiative will lead to 33.55% increase in Expenditure significant at P-value  $< 0.05$ . In addition, allowing Petition/protest referendum versus Initiative will lead to 28.22% increase in Expenditure significant at P-value  $< 0.010$ . However, data shows that the largest increase, 42.97% significant at P-value  $< 0.01$ , in Expenditure is led by counties that allow combination of several Direct citizen influence variables versus Initiative.

The findings of regression analysis for year of 2007 indicate that 10% increase in Population variable will lead to approximately 5.2% increase in Expenditure, significant at P-value  $< 0.01$ . As for government structure changing the structure from Commission to Commission-administrator will lead to 19.63% increase in Expenditure, significant at P-value  $< 0.01$ . In addition changing from Commission to Commission-manager will lead to 35.40% increase in Expenditure, significant at P-value  $< 0.01$ . As for changing the structure from Commission to Commission-mayor will lead to 12.87% increase in Expenditure, significant at P-value  $< 0.05$ . Ten percent increase in Intergovernmental revenue variable will lead to approximately 3.7% increase in Expenditure, significant at P-value  $< 0.01$ . The possession of Veto power and Commission size are statistically insignificant in this dataset. As for election method variables both are statistically insignificant in this dataset as well. From the Direct citizen influence elements allowing Popular referendum versus Initiative will lead to 20.00% increase in Expenditure, significant at P-value  $< 0.010$ . In addition allowing Recall versus Initiative will lead to 39.85% increase in Expenditure while allowing combination of several Direct citizen influence variables versus Initiative will lead to 28.93% increase in Expenditure, both significant at P-value  $< 0.01$ .

From a theoretical perspective the fact that population is explanatory of the outcome variable is quite expected. The finding is suggesting that growth in population will result in increase of county government expenditure, which is expected. What should be noted though is the capacity of existing services to absorb population increases up to a certain level. In all three years findings indicate that counties have the ability to accommodate approximately about 5% increase in the population without increasing their expenditures.

Intergovernmental revenue variable was included in order to capture the effect of exogenous funding. Findings do support the theory that grants-in-aid increase local government spending (Courant, Gramlich, Rubinfeld 1979, 6). However, the magnitude of the effect was much smaller than expected. The limitation of the finding is that the data does not specify whether the grants were matched or not.

As for government structure variables the findings do support the theoretical expectations that hiring a manager (administrator for 1997 data) does not decrease the cost of government. Instead, the incentives faced by managers seem to be driving the Expenditures considerably higher for the given sample of counties in all three years. In addition, counties that adopt structural changes also secure wider fiscal authority which allows more flexibility when it comes to raising revenues. Another possible explanation of the finding is that managers, due to their professional training, are more likely to be successful in obtaining exogenous funding from state and federal sources, which in turn is effecting the expenditure. Nevertheless, data indicated that 10% of exogenous funding only stimulate about 4% increase in Expenditure in all three datasets.

In addition, these findings provide support that changing county government structure from Commission to Commission-mayor would also increase the Expenditure. Similarly wider fiscal authority, which allows flexibility in raising revenue, is most likely being utilized under this structure as well. One possible explanation for this finding could be that county mayors may be seeking larger county wide projects due to increased revenues.

Comparing the impacts of Commission-manager and Commission-mayor on expenditure reveals that for 1997 dataset they are quite similar, which is increasing it by 19.11% and 17.31% respectively. However, for 2007 dataset Commission-manager increased the expenditure by over 35% while Commission-mayor increased it by nearly 13%. These findings surely suggest that by changing the county government structure from Commission to other forms will not lead to lower expenditures. However, if citizens demand modernization or change then Commission-mayor, according to these findings, is a better fit for county governments.

The results also suggest that allowing direct citizen influence elements on county level, specifically Recall, Petition/protest referendum and Combination of several are also increasing the Expenditure with respect to Initiative. Possible explanation of this finding is that commissioners along with managers/mayors are more careful in their governing procedures. This in turn may be increasing the cost of projects and procedures they engage in.

This study has several limitations, some of which are omitted variable bias and endogeneity. Theory suggests including additional factors that may influence local government spending. The first factor is ratio of homeowner and renters. This factor may

influence local government expenditure because homeowners will likely vote for less expenditure in order to lower their taxes while renters will likely do the opposite in order to receive more services. However, theory also suggests that if the local government services are normal goods then their consumption should increase with the increase of resident's income. These two factors are contradictory to each other since residents' with higher income are more likely to be homeowners as well. Due to time restraints of the research these factors were not included in the study thus may be causing omitted variable bias.

Theory on local government expenditures and several previous studies indicated that coefficient for Commission Size would bear a positive sign. However, it was negative in all three datasets, which could be due to presence of endogeneity. This could possibly be remedied by utilizing two stage least square regression.

The study also did not look at the revenue side of the various government structures. It is possible that part of the expenditures could be explained by the revenue different structures are able to obtain. The professional training of managers could allow them to be more successful in securing various grants compared to Commission and Commission-mayor. Further research in this area would most likely shed light on overall fiscal behavior of county governments.

## **Conclusion**

This research inquired into whether government structure has any influence on expenditure. On the national sample of U.S. county governments several hypotheses were tested. The findings suggest that government structure does have an impact on agencies' expenditure levels. Specifically, findings indicate that traditional Commission structure

tends to spend the least, followed by Commission-mayor and the most expensive being Commission-manager. For 2007 dataset Commission-manager increased the expenditure by over 35% while Commission-mayor increased it by nearly 13% versus traditional Commission structure. In addition, the study found, that the sample of counties analyzed had the capacity of existing services to absorb about 5% increase in their population, without increasing their expenditure. As for exogenous funding the study did find that it has stimulative effect on local government expenditure, however the magnitude was smaller than expected. In fact, the allowance of direct citizen influence elements on county level, specifically Recall, Petition/protest referendum and Combination of several is increasing government expenditure in respect to Initiative more than exogenous funding.

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**Appendix  
Part A: Tables**

**Table 1: Variable Definitions**<sup>2</sup>

Expenditure	Total county expenditure per person in \$1,000s minus payment on interest.
Commission	Each commissioner serves as director of one or more functional departments (e.g. Public Works Director or Director of Health and Human Services) in addition to his/her policymaking role. The presiding officer may be chosen among the commissioners or elected directly.
Commission-administrator	An elected commission sets policy, adopts legislation and approves the budget. The commission appoints an administration to conduct the day-to-day country business, to prepare the budget, to oversee department heads, and to recommend policy to the board.
Commission-manager (2002 and 2007)	An elected commission sets policy, adopts legislation and approves budget. The commission appoints a manager with broad executive authority to oversee and manage county departments, hire and fire most department directors, hire and fire county staff, prepare the budget, and recommend policy to the board.
Commission-mayor	The elected commission is responsible for making policy. The executive elected at-large implements county board policies, prepares the budget, and acts as county spokesperson. The executive often has veto power, which can be overridden. The form separates the legislative and executive powers.
Intergovernmental revenue	A sum of federal and state funds received for various areas such as education, general government support, health and hospitals, highways, transit subsidies, housing and community development and public welfare.

<sup>2</sup> Definitions presented in the table were obtained from the ICMA County Form of Government questioner.

Veto power	Whether the presiding officer (manager/administrator) has the authority to veto legislative and other acts passed by the commission
Elected at large	Members of the commission are elected county wide.
Elected by ward/district	County is divided into districts from which members of the commission are elected.
Combined elections	Counties are usually territorially divided where at-large or ward elections are used in order to elect commissioners.
Initiative	Permits citizens to place charter, ordinances, or home rule changes directly on a ballot for approval or disapproval by the voters
Binding referendum (1997)	Allows voters to determine the outcome on public issues by binding the governing body to act on voters' opinions.
Non-binding referendum (1997)	Allows voter to express an opinion on a specific topic without binding the governing body to act on voters' opinions.
Recall	A vote by the citizens to remove an elected official from office before the expiration of that official's term.
Petition/protest referendum (1997)	Allows voters to delay enactment of local ordinances or by law until a referendum is held.
Legislative referendum (2002 and 2007)	Allows the commission to place any question on the ballot for voter approval or rejection. The result may be binding or non-binding
Popular referendum (2002 and 2007)	Allows voters to collect signatures on a petition to place on the ballot any charter, ordinance, or home rule change that has been adopted by the local government before the change can take effect.

**Table 2: Regression Results**

	1997		2002		2007	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Population	0.4511*	0.02591	0.4995*	0.0250	0.5356*	0.0207
Commission-administrator	0.2390*	0.0629	0.0733	0.0579	0.1963*	0.0495
Commission-manager	N/A	N/A	0.1911*	0.0670	0.3540*	0.0599
Commission-mayor	-0.0692	0.0735	0.1731**	0.0869	0.1287**	0.0654
Intergovernmental revenue	0.4681*	0.0215	0.4278*	0.0210	0.3813*	0.0154
Veto power	0.0834	0.1019	0.1439	0.1064	0.0023	0.0869
Commission size	-0.0047	0.045	-0.0049	0.0039	-0.0023	0.0037
Elected at large	-0.0552	0.0586	0.0156	0.0541	0.0335	0.0472
Combined elections	0.2139*	0.0775	0.1738**	0.0867	0.0062	0.0597
Binding referendum	0.1640	0.1407	0.1672	0.1718	N/A	N/A
Legislative referendum	N/A	N/A	N/A	N/A	0.1779	0.1087
Popular referendum	N/A	N/A	N/A	N/A	0.2000** *	0.1153
Non-binding referendum	0.0810	0.1293	0.2197	0.1659	N/A	N/A
Recall	0.0828	0.1240	0.3355**	0.1728	0.3985*	0.1191
Petition/protest referendum	0.0362	0.1301	0.2822** *	0.1610	N/A	N/A
Combination of several	0.1725	0.1160	0.4297*	0.1546	0.2893*	0.1020
N	472		459		783	
R-squared	0.9090		0.9039		0.8896	
Adjusted R-squared	0.9064		0.9009		0.8878	

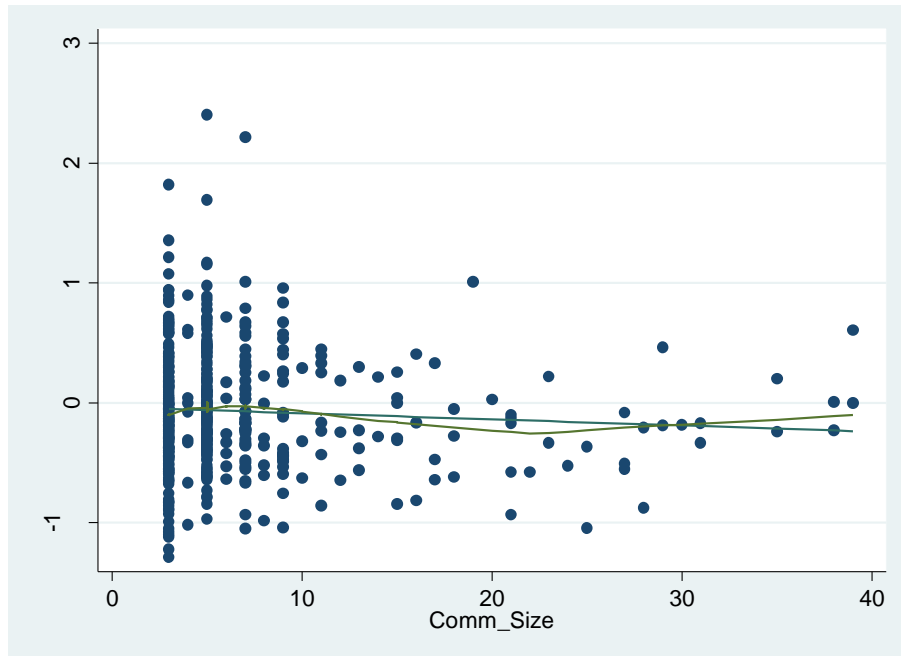
\*: p-value is 1% or less

\*\*: p-value is 5% or less

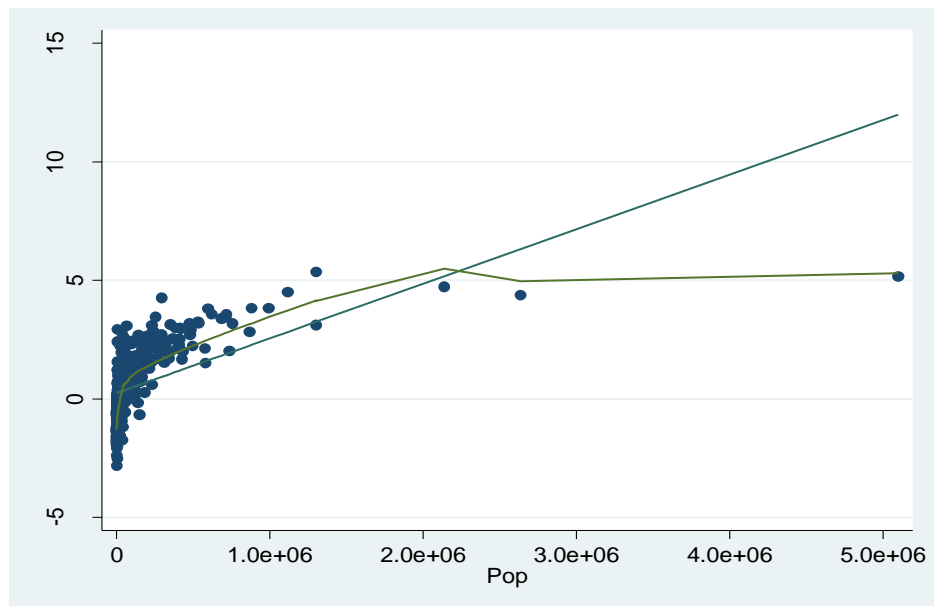
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**Part B: Plots****1997 Dataset**

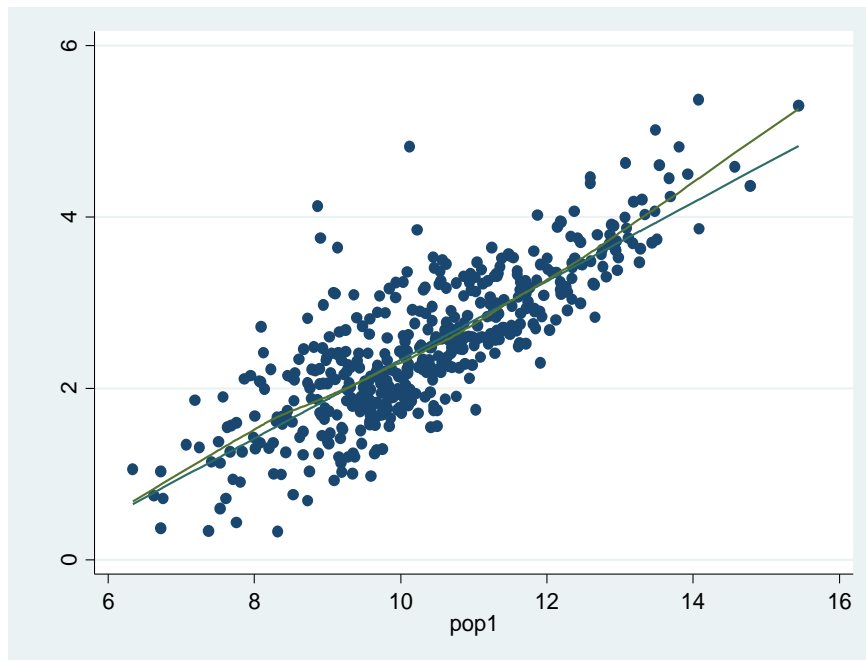
**Plot 1B: An augmented component- plus-residuals (augmented partial residual) plot for Commision size (independent variable)**



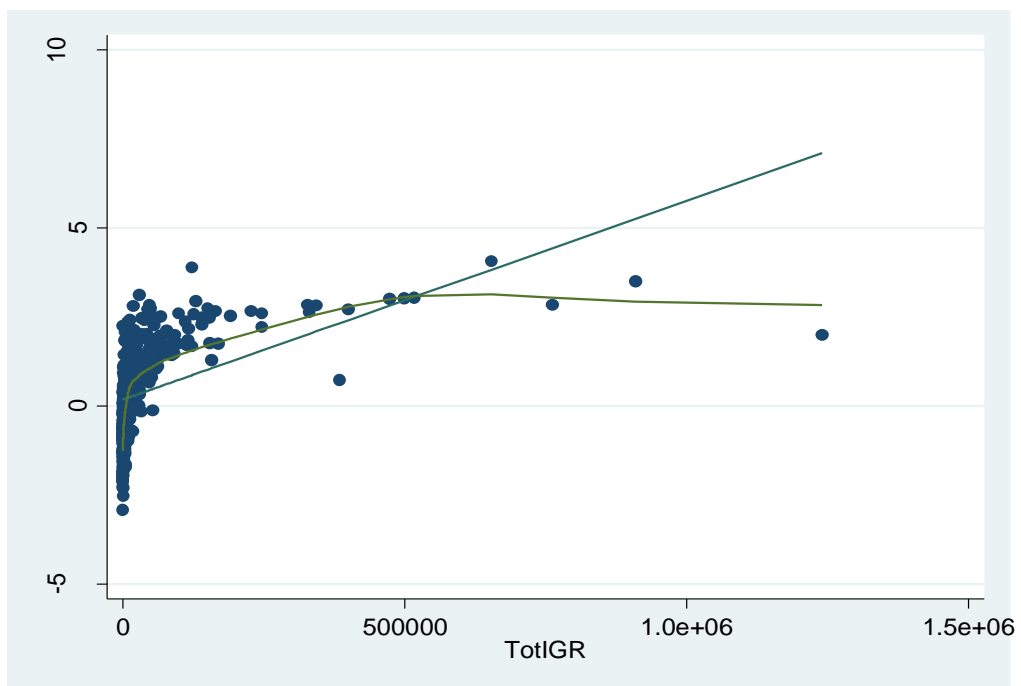
**Plot 2B: An augmented component- plus-residuals (augmented partial residual) plot for Population (untransformed independent variable)**



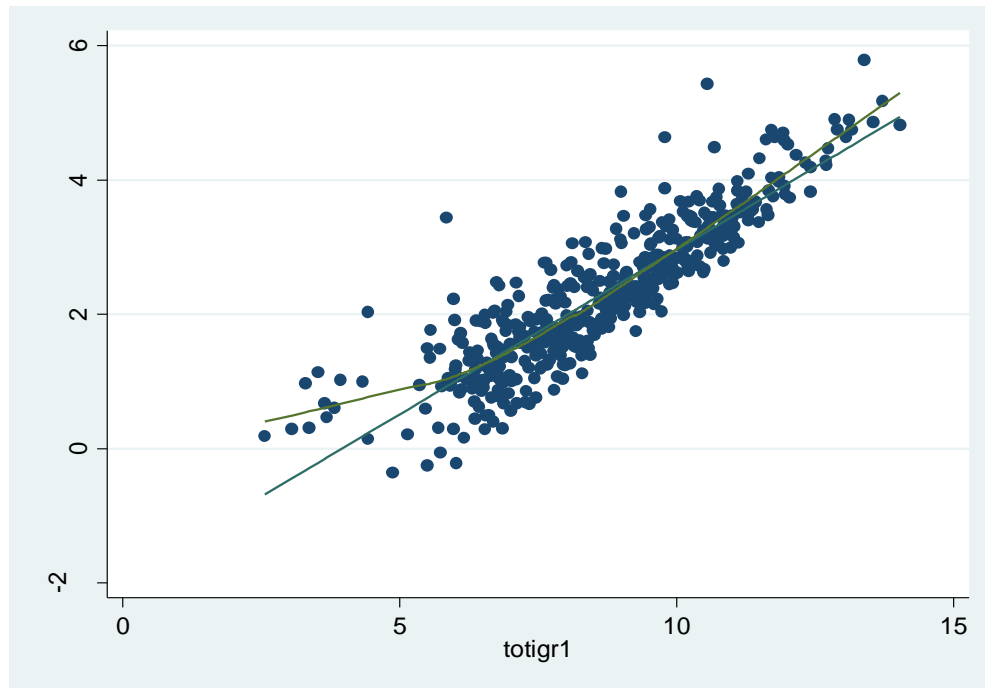
**Plot 3B: An augmented component-plus-residuals (augmented partial residual) plot for Population (transformed independent variable)**



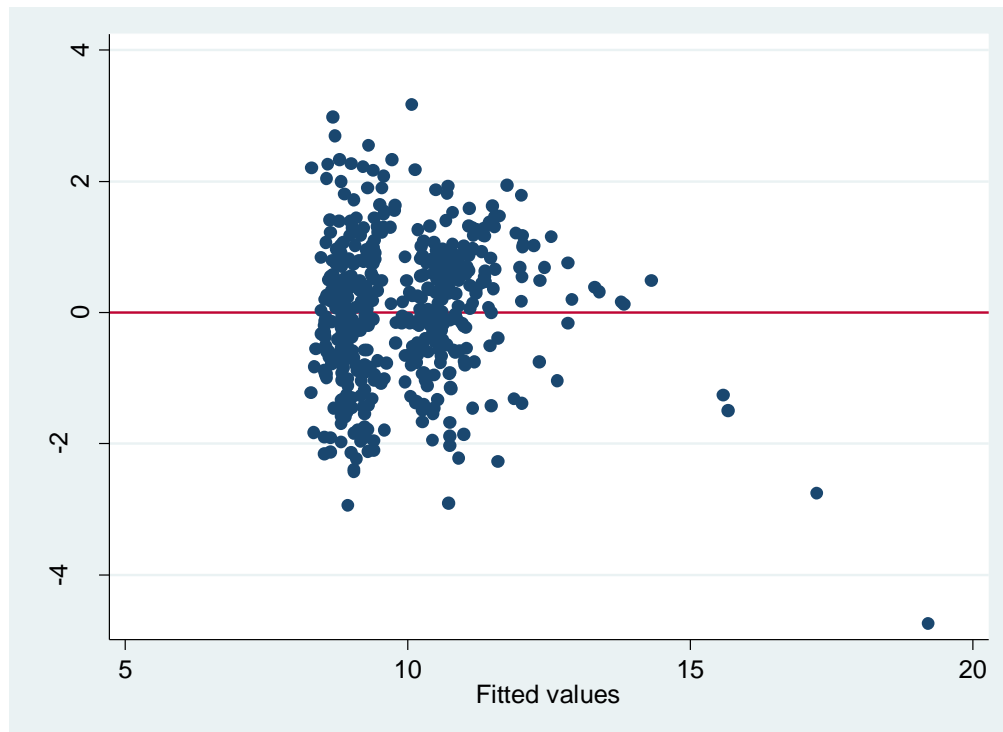
**Plot 4B: An augmented component plus residuals (augmented partial residual) plot for Intergovernment revenue (untransformed independent variable)**



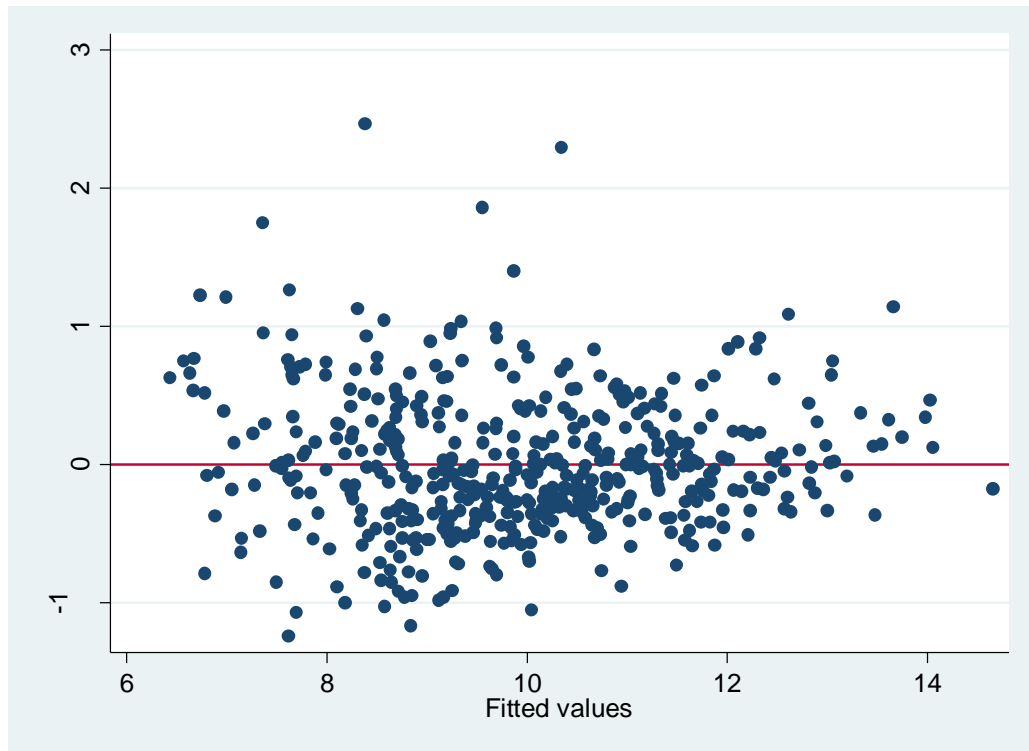
**Plot 5B: An augmented component plus residuals (augmented partial residual) plot for Intergovernment revenue (transformed independent variable)**



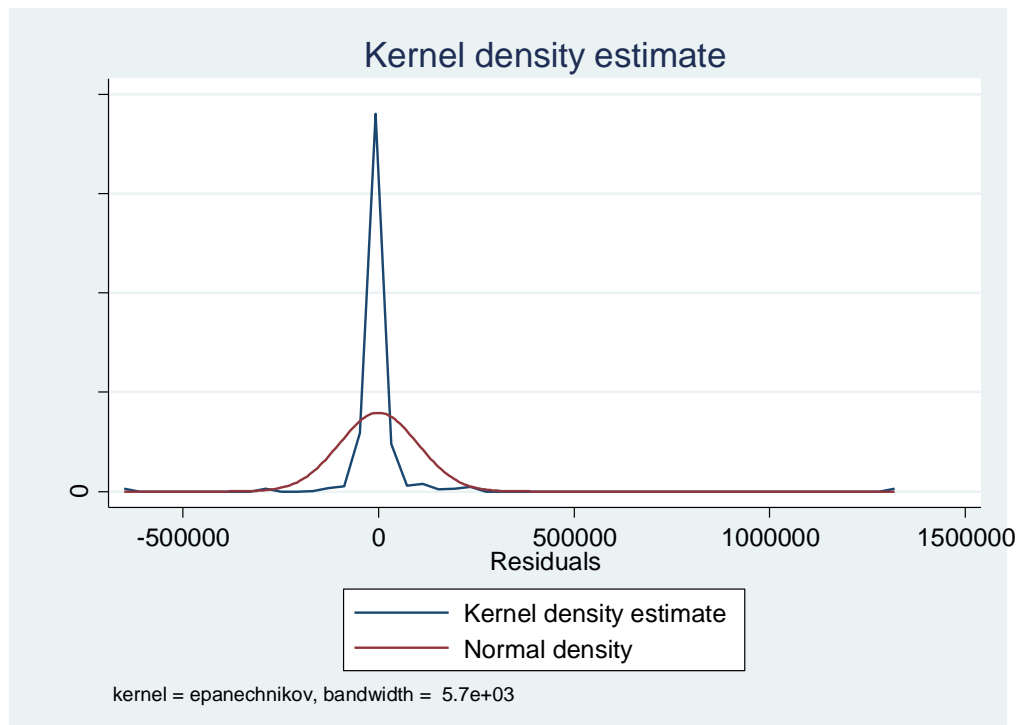
**Plot 6B: Residuals vs. Fitted values (untransformed dependent and independent variables) Heteroscedasticity**



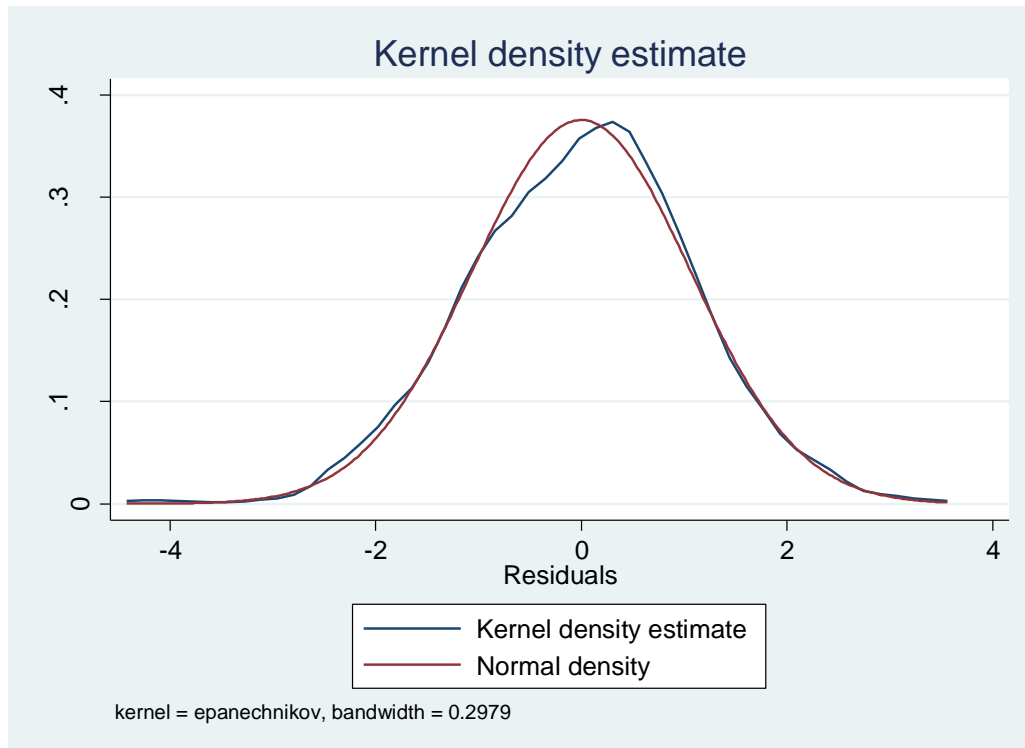
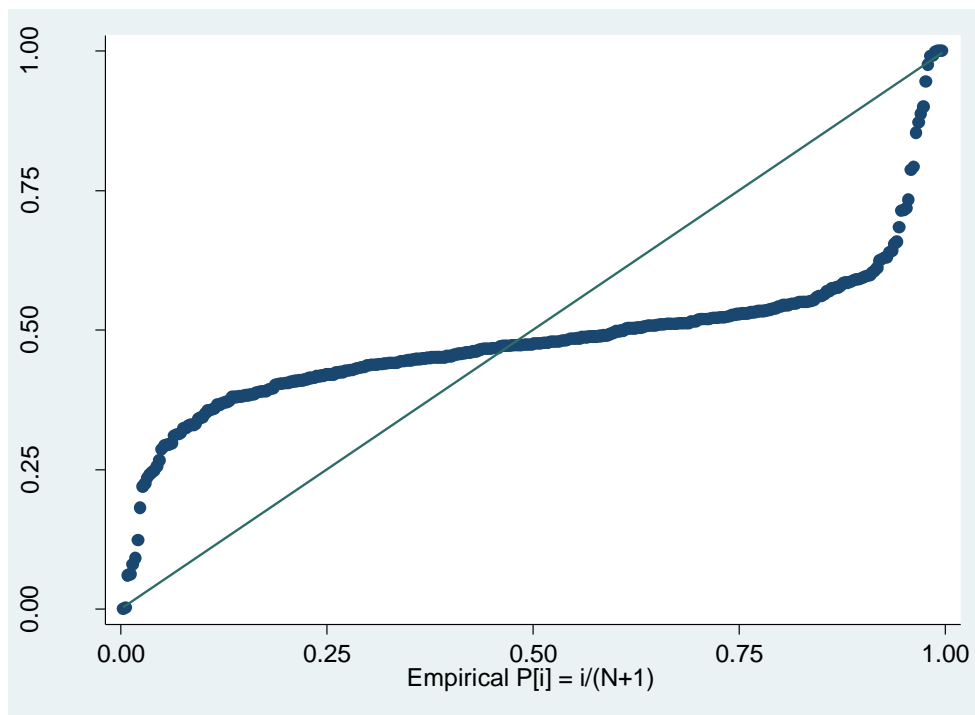
**Plot 7B: Residuals vs. Fitted values (transformed dependent and independent variables)**

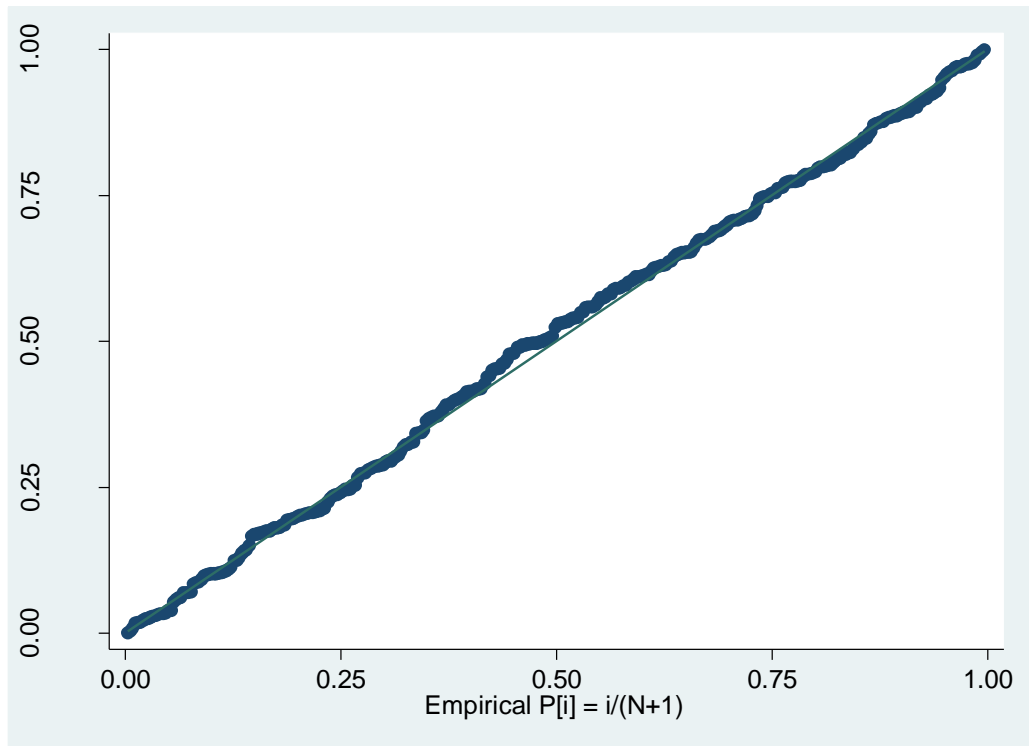
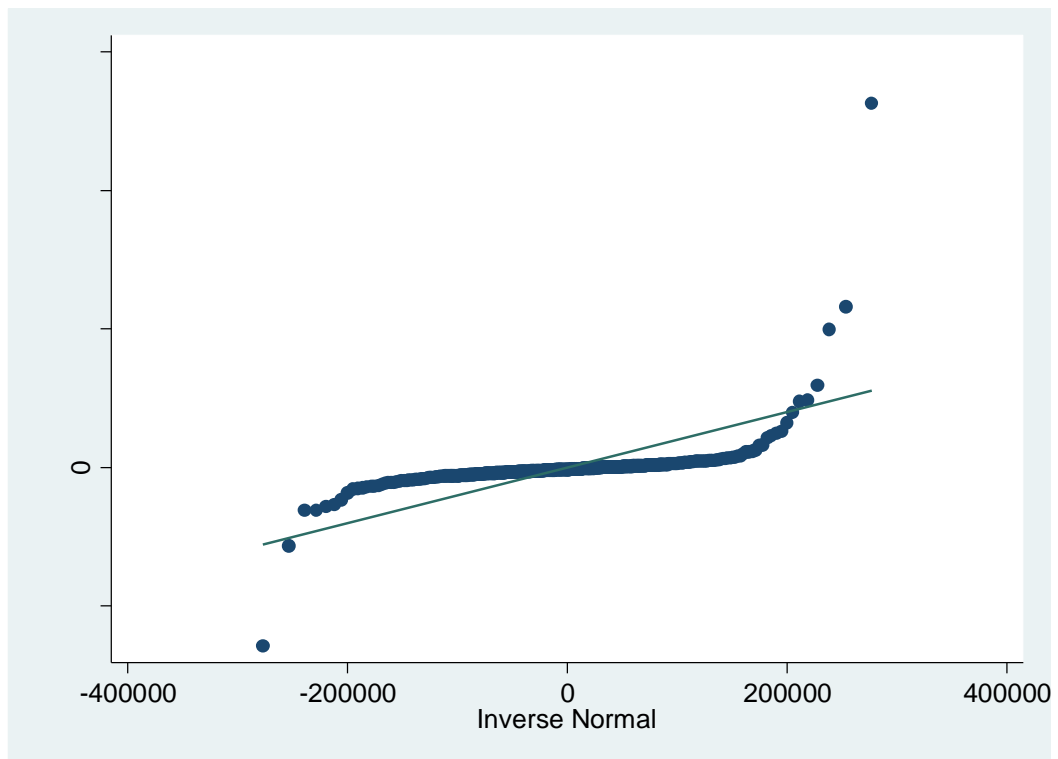


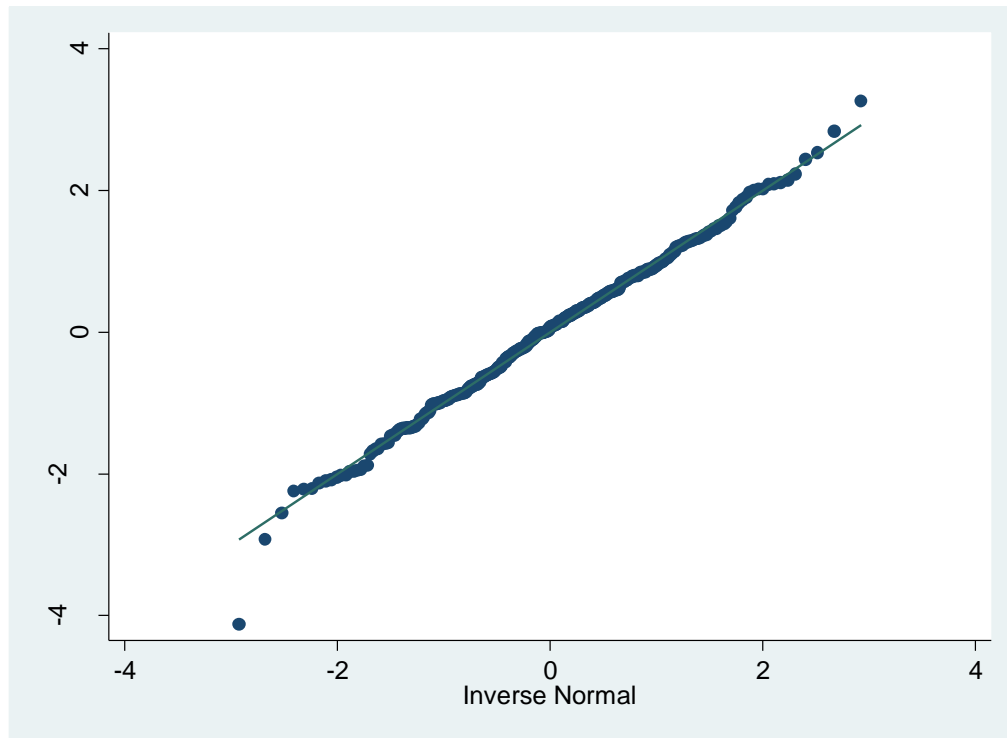
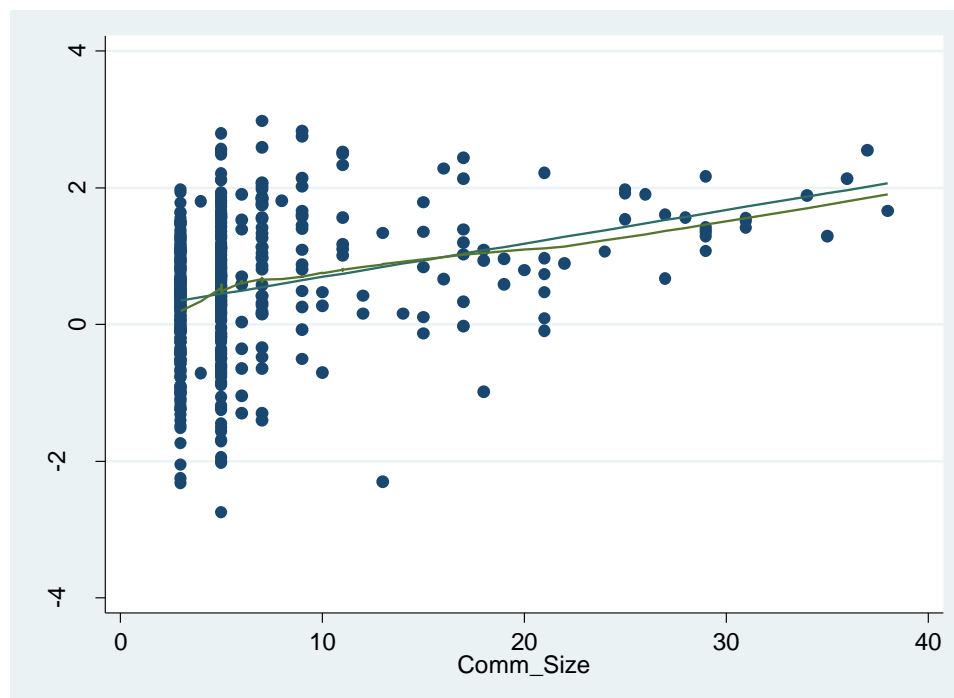
**Plot 8B: Kernel density estimate: Density vs. Residuals (untransformed)**



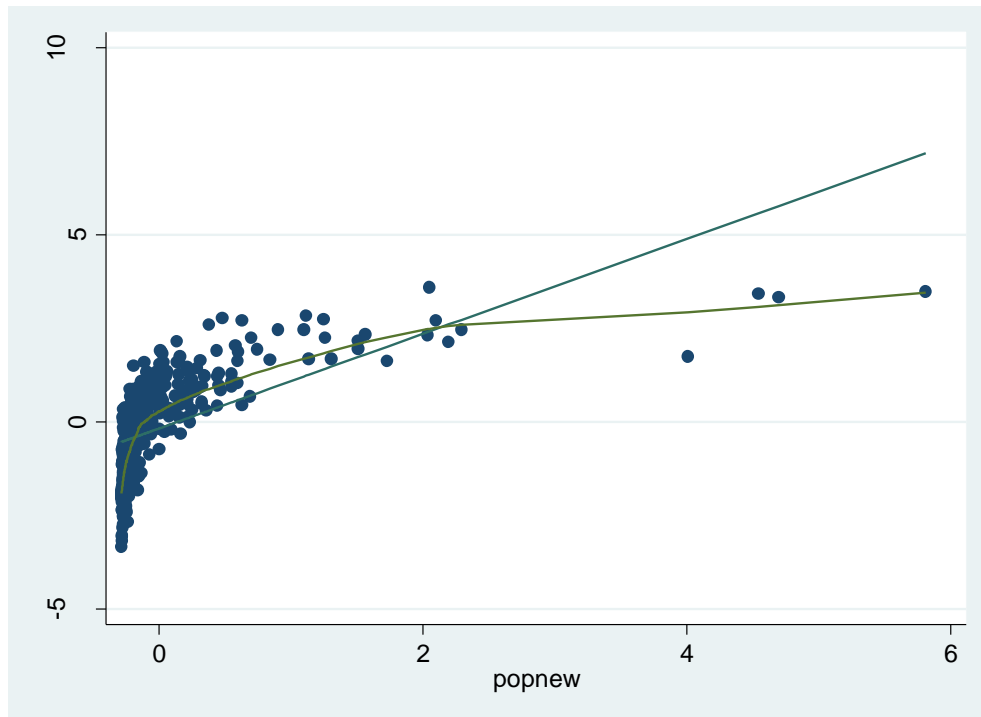


**Plot 10B: Kernel density estimate: Density vs. Residuals (transformed)****Plot 11B: Normal probability plot (untransformed)**

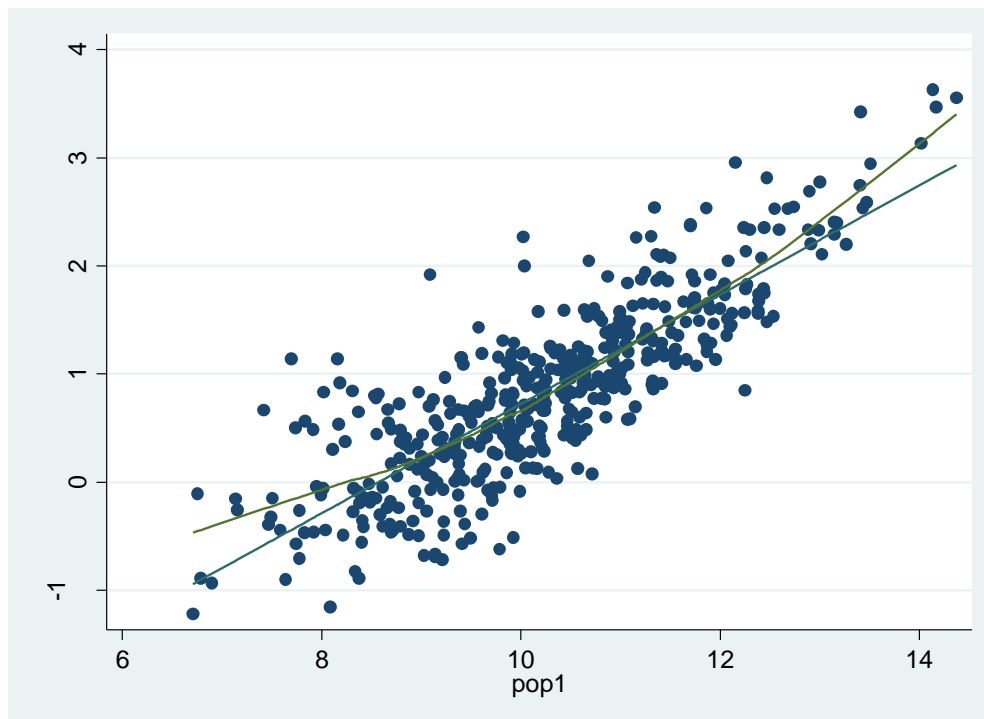
**Plot 12B: Normal probability plot (transformed)****Plot 13B: Q-Q Plot (untransformed)**

**Plot 14B: Q-Q Plot (transformed)****2002 Dataset****Plot 15B: An augmented component- plus-residuals (augmented partial residual) plot for Commision size**

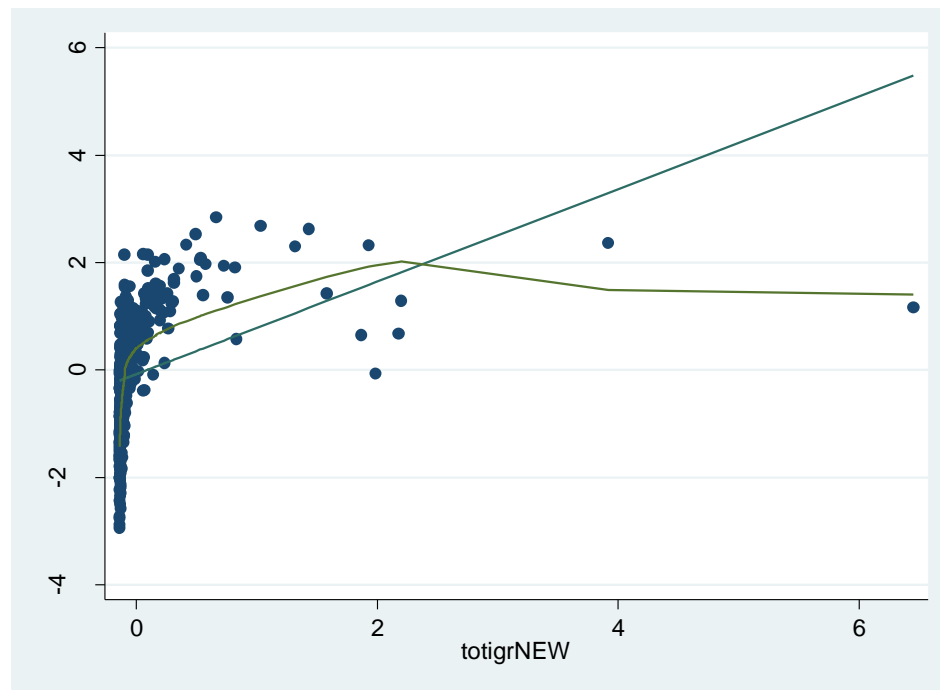
**Plot 15B: An augmented component- plus-residuals (augmented partial residual) plot for Population (untransformed independent variable)**



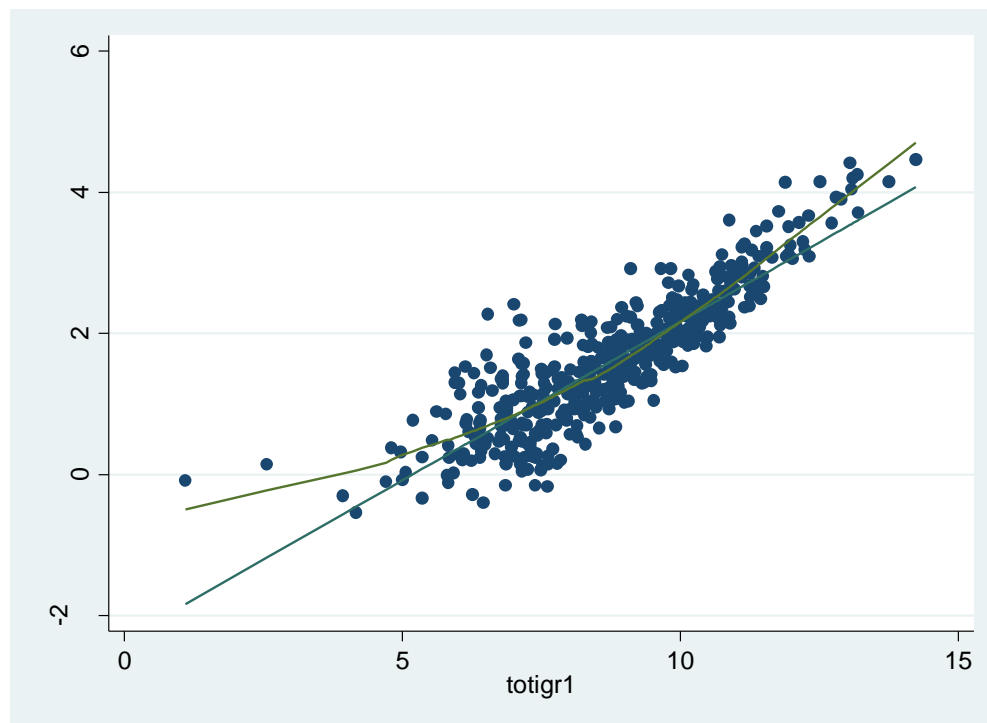
**Plot 16B: An augmented component-plus-residuals (augmented partial residual) plot for Population (transformed independent variable)**



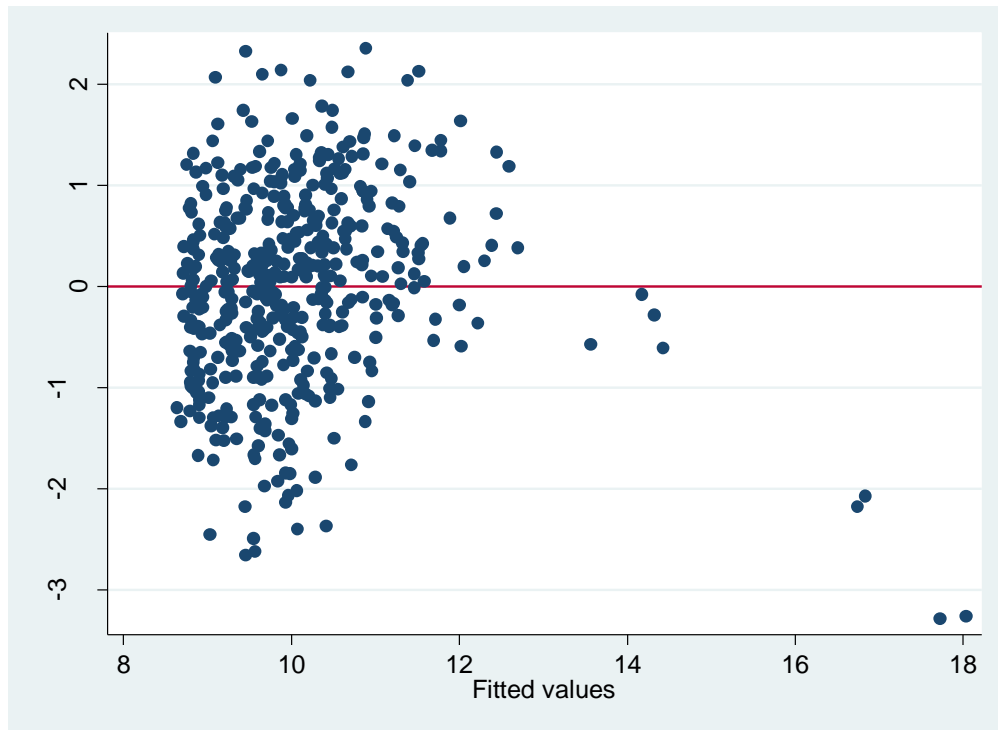
**Plot 17B: An augmented component plus residuals (augmented partial residual) plot for Intergovernment revenue (untransformed independent variable)**



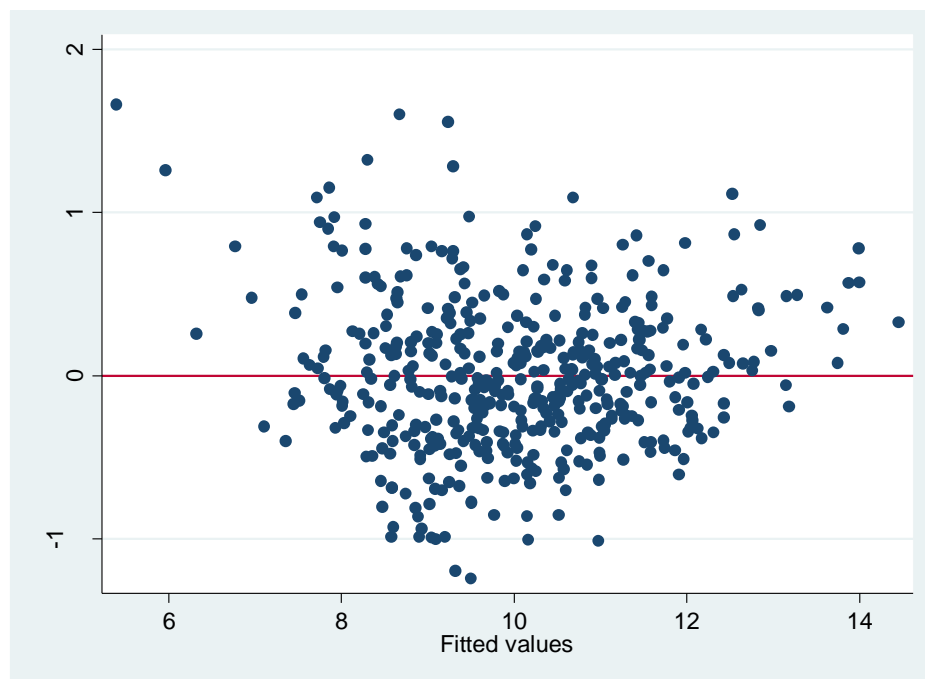
**Plot 18B: An augmented component plus residuals (augmented partial residual) plot for Intergovernment revenue (transformed independent variable)**

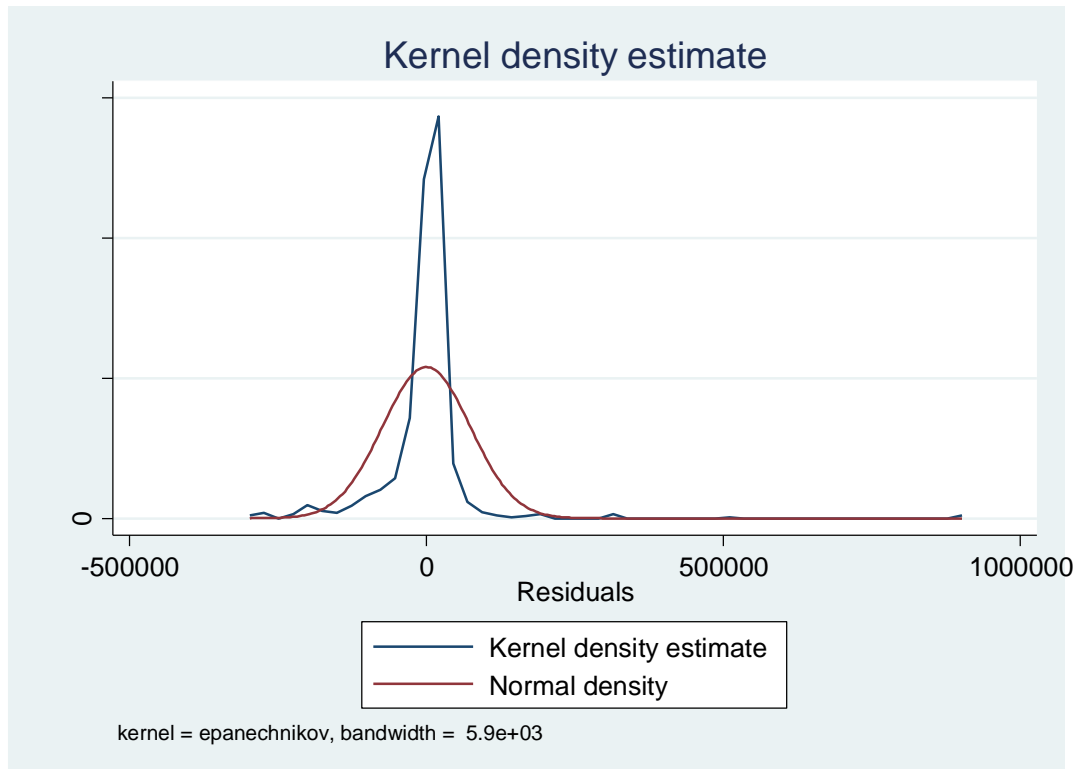
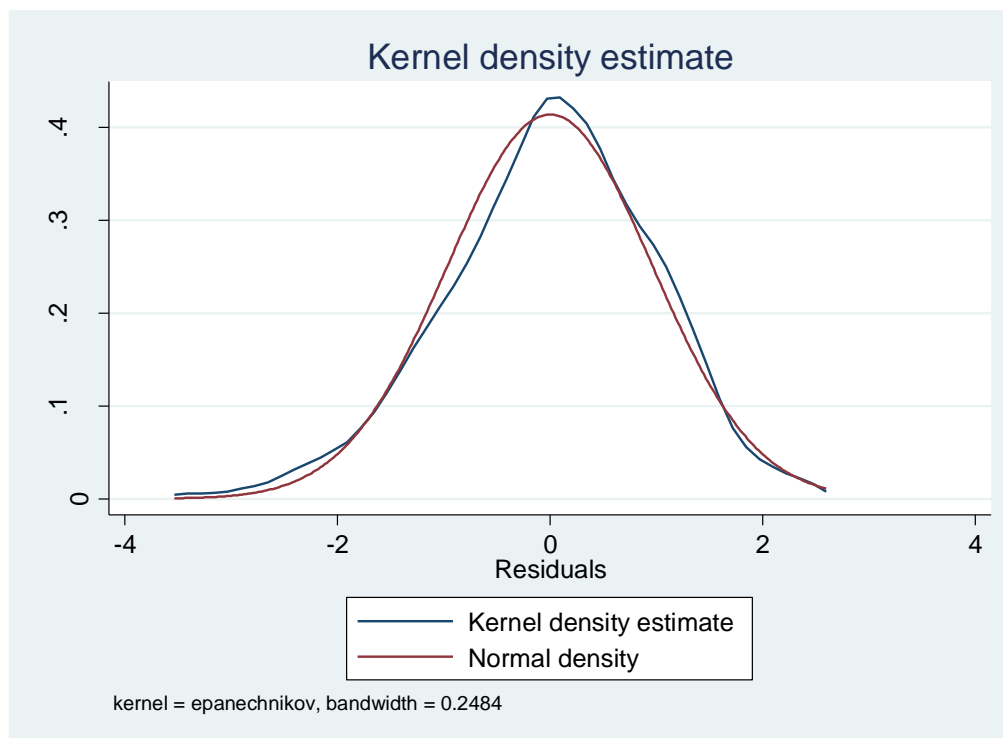


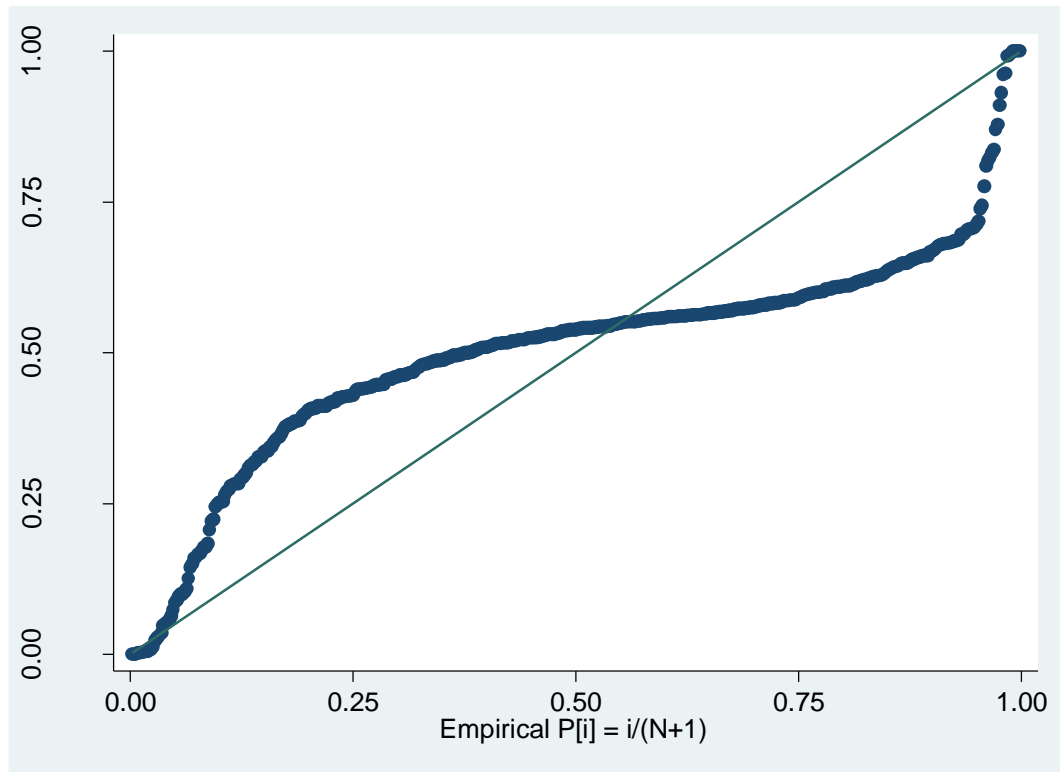
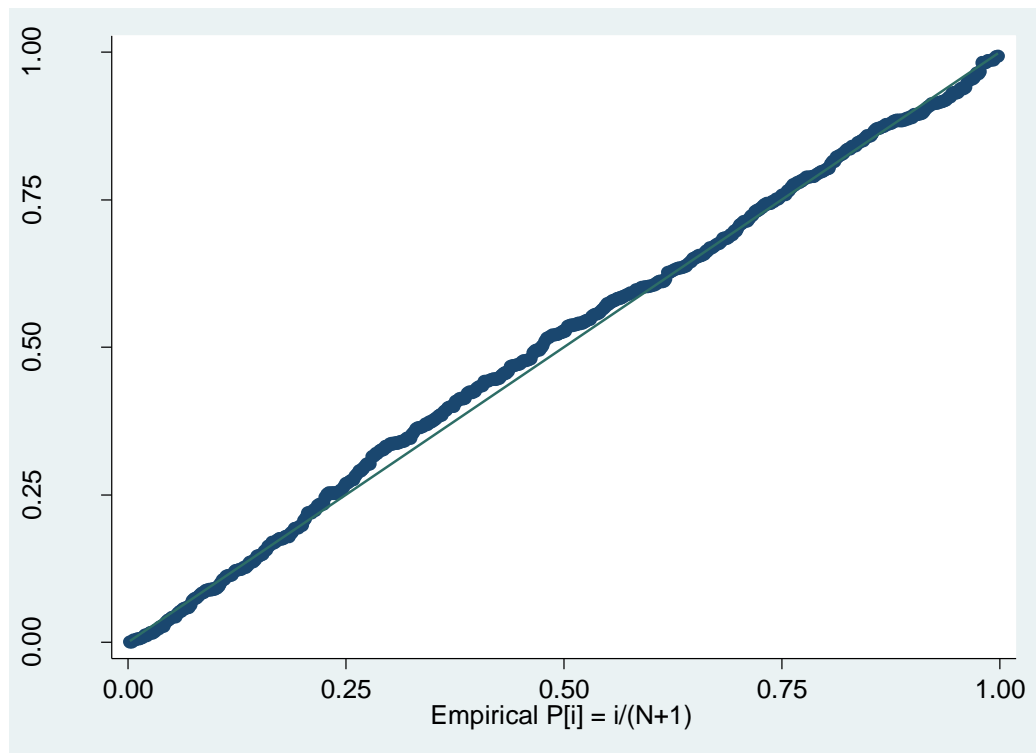
**Plot 19B: Residuals vs. Fitted values (untransformed dependent and independent variables) Heteroscedasticity**



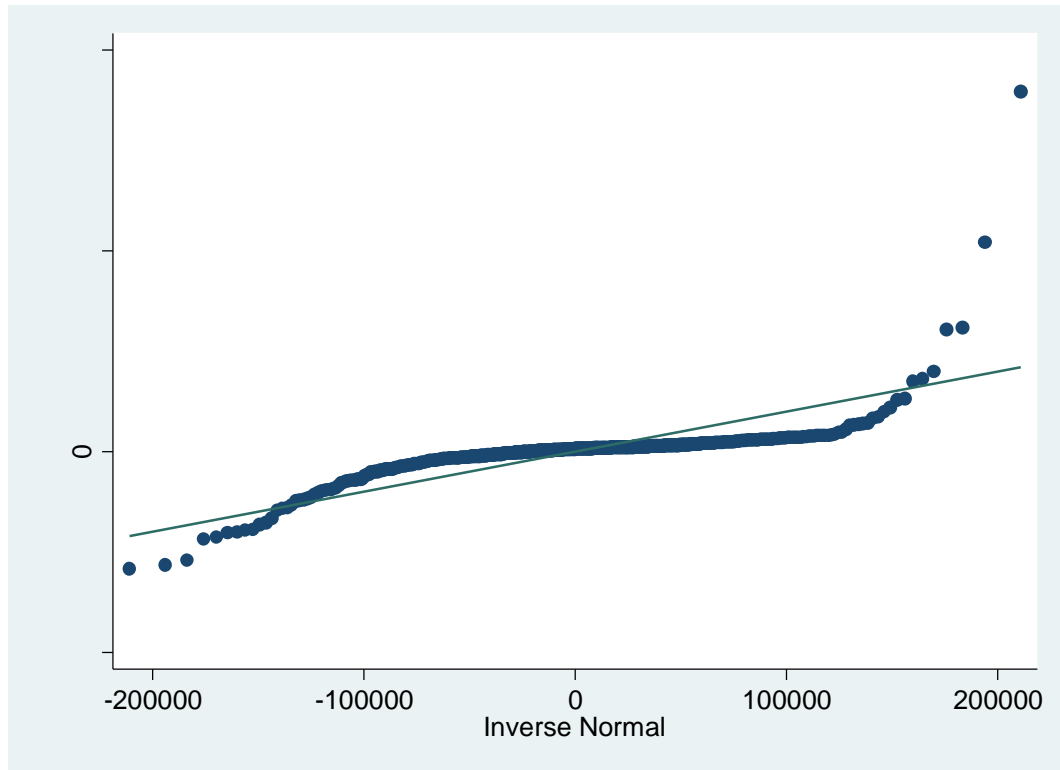
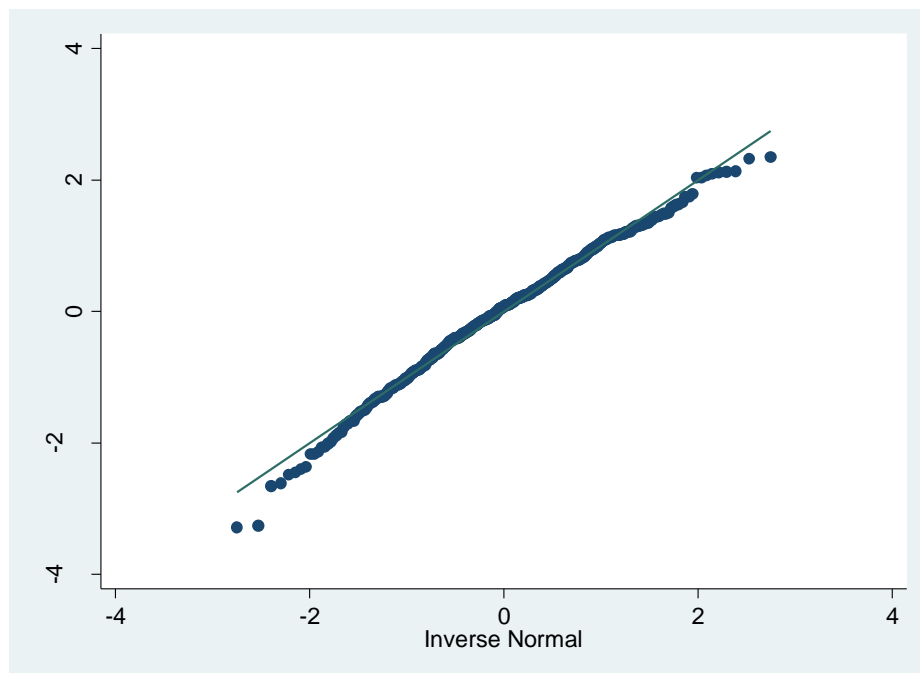
**Plot 20B: Residuals vs. Fitted values (transformed dependent and independent variables)**

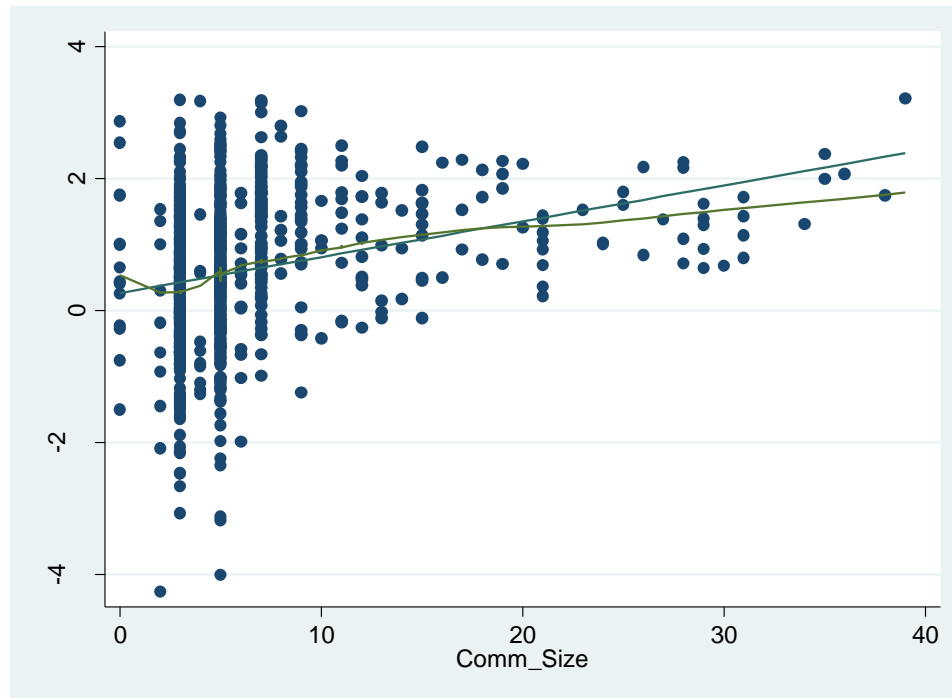
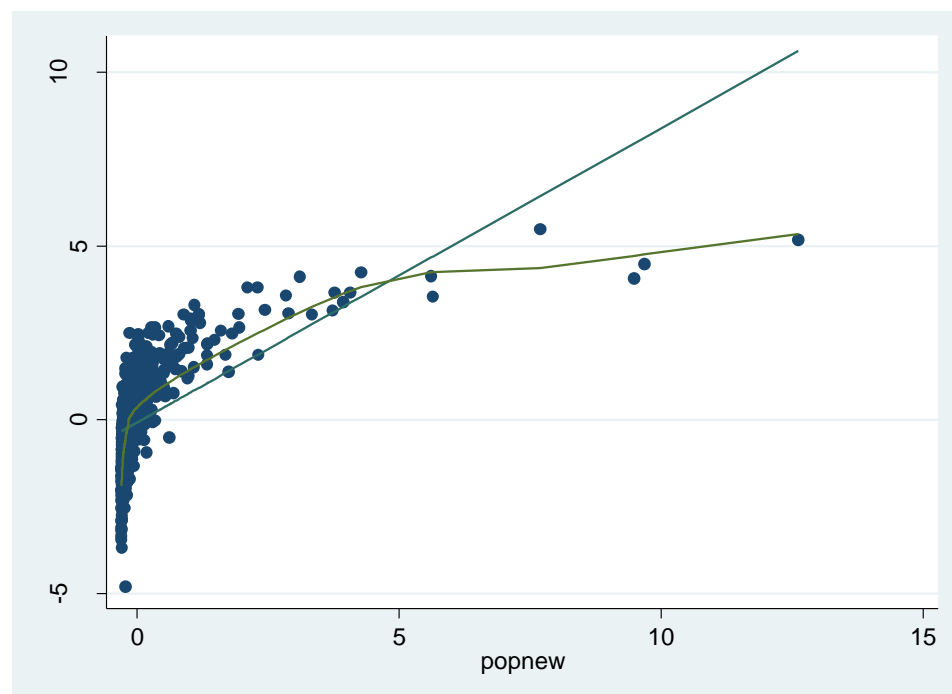


**Plot 21B: Kernel density estimate: Density vs. Residuals (untransformed)****Plot 22B: Kernel density estimate: Density vs. Residuals (transformed)**

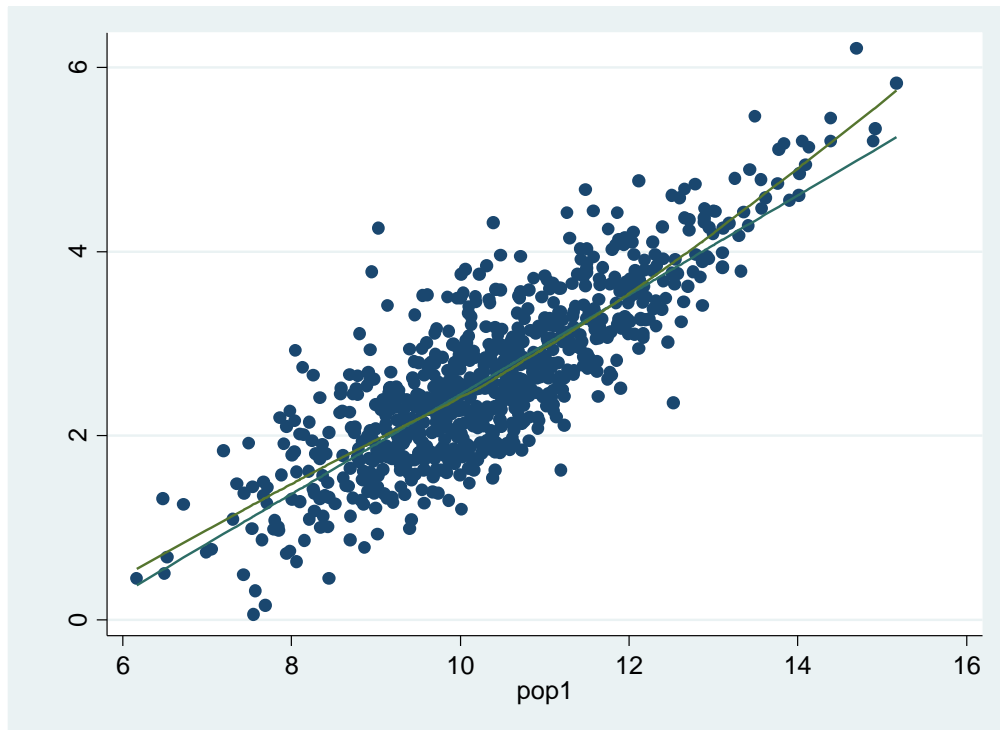
**Plot 23B: Normal probability plot (untransformed)****Plot 24B: Normal probability plot (transformed)**



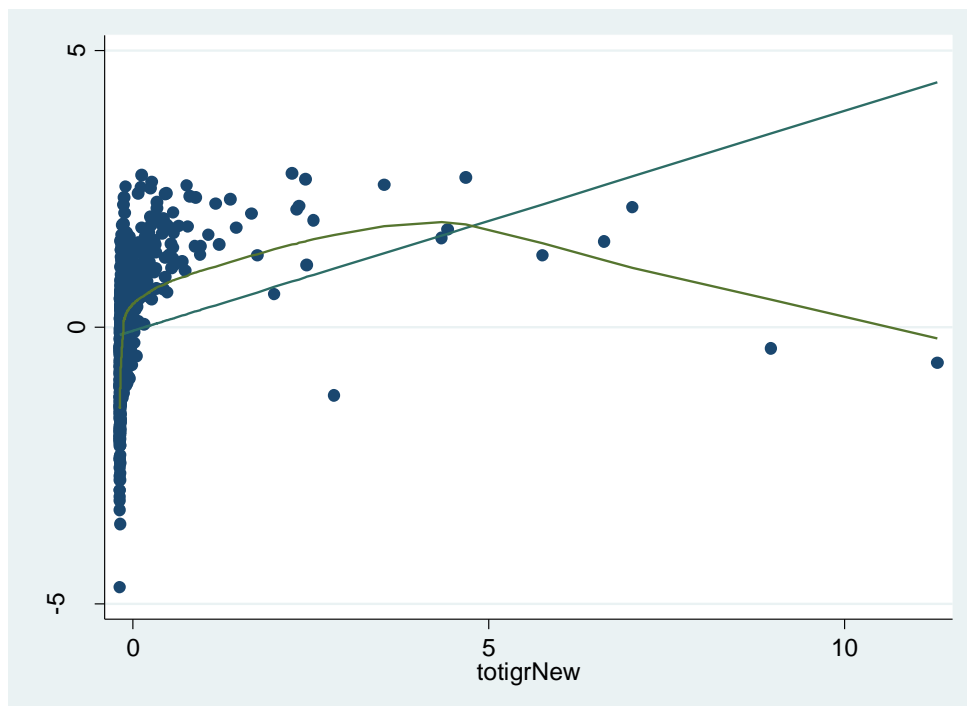
**Plot 25B: Q-Q Plot (untransformed)****Plot 26B: Q-Q Plot (transformed)**

**2007 Dataset****Plot 27B: An augmented component- plus-residuals (augmented partial residual) plot for Commision size****Plot 28B: An augmented component- plus-residuals (augmented partial residual) plot for Population (untransformed independent variable)**

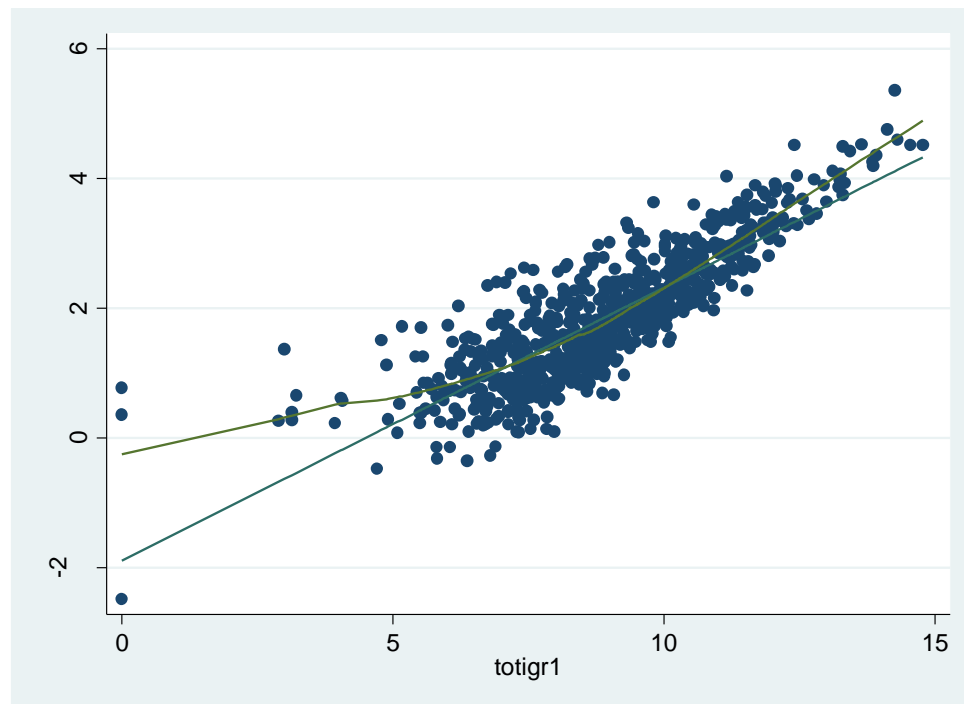
**Plot 29B: An augmented component-plus-residuals (augmented partial residual) plot for Population (transformed independent variable)**



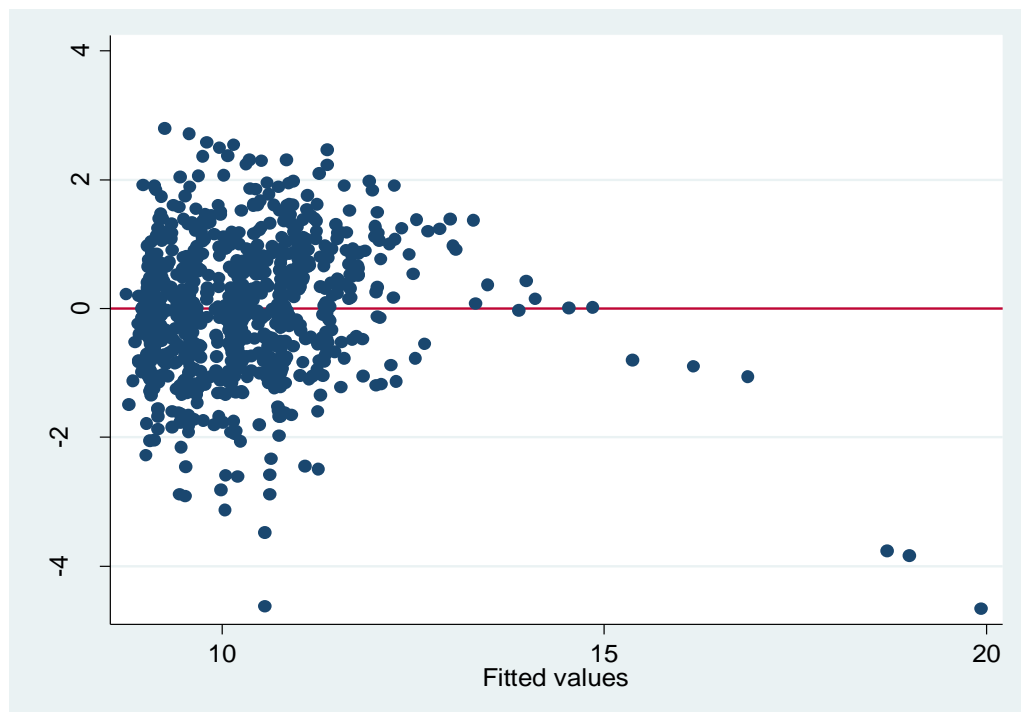
**Plot 30B: An augmented component plus residuals (augmented partial residual) plot for Intergovernment revenue (untransformed independent variable)**



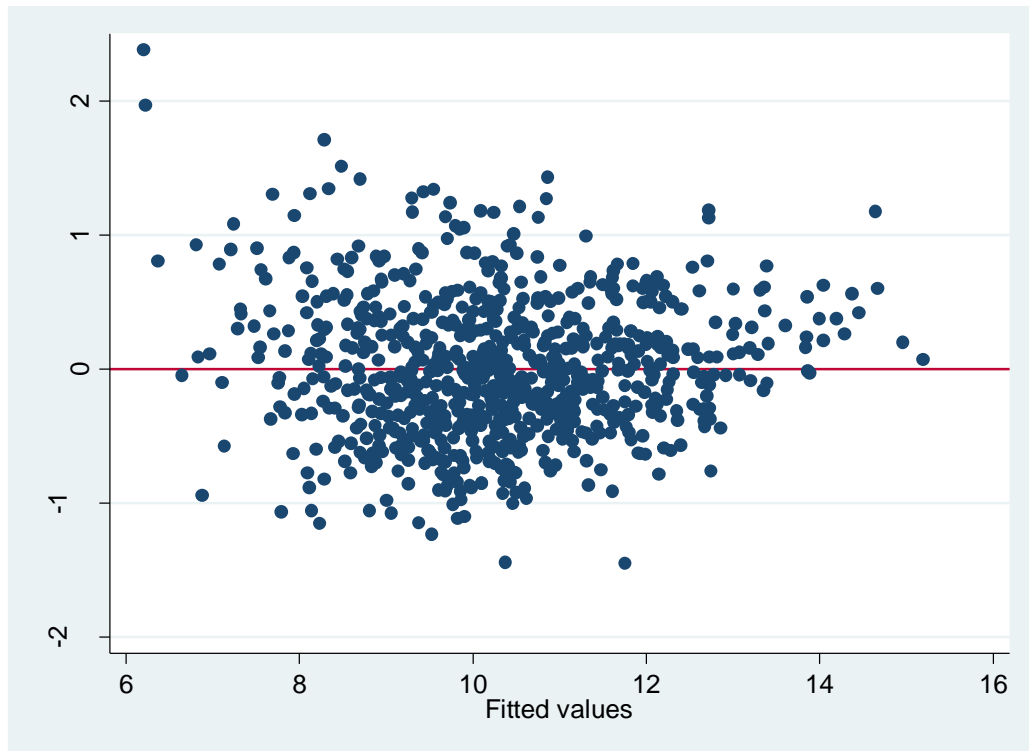
**Plot 31B: An augmented component plus residuals (augmented partial residual) plot for Intergovernment revenue (transformed independent variable)**



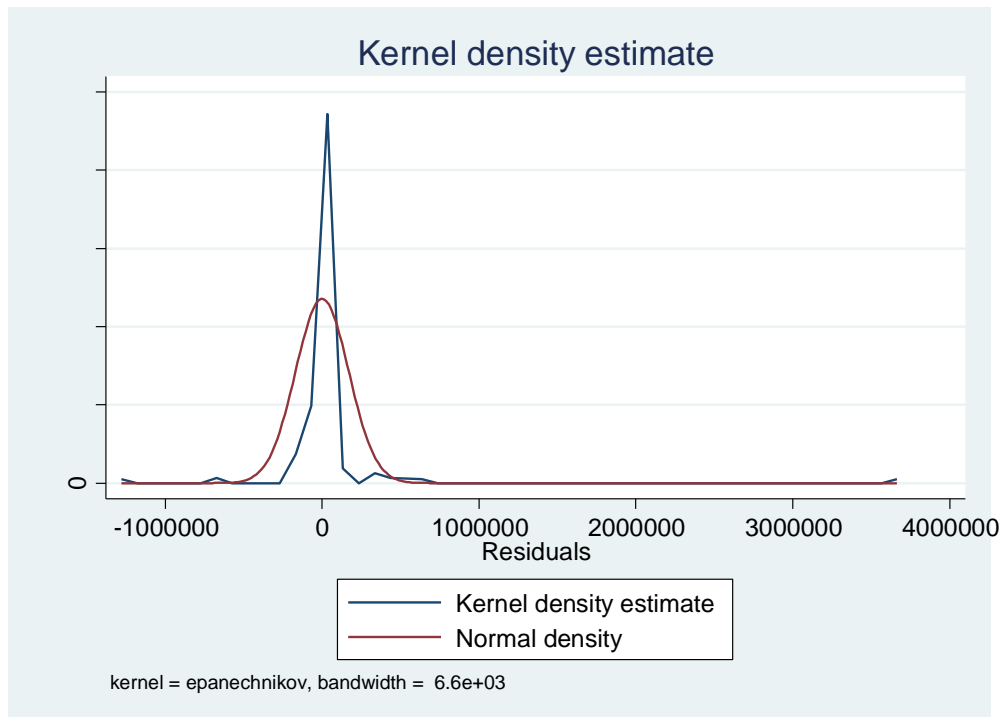
**Plot 32B: Residuals vs. Fitted values (untransformed dependent and independent variables) Heteroscedasticity**

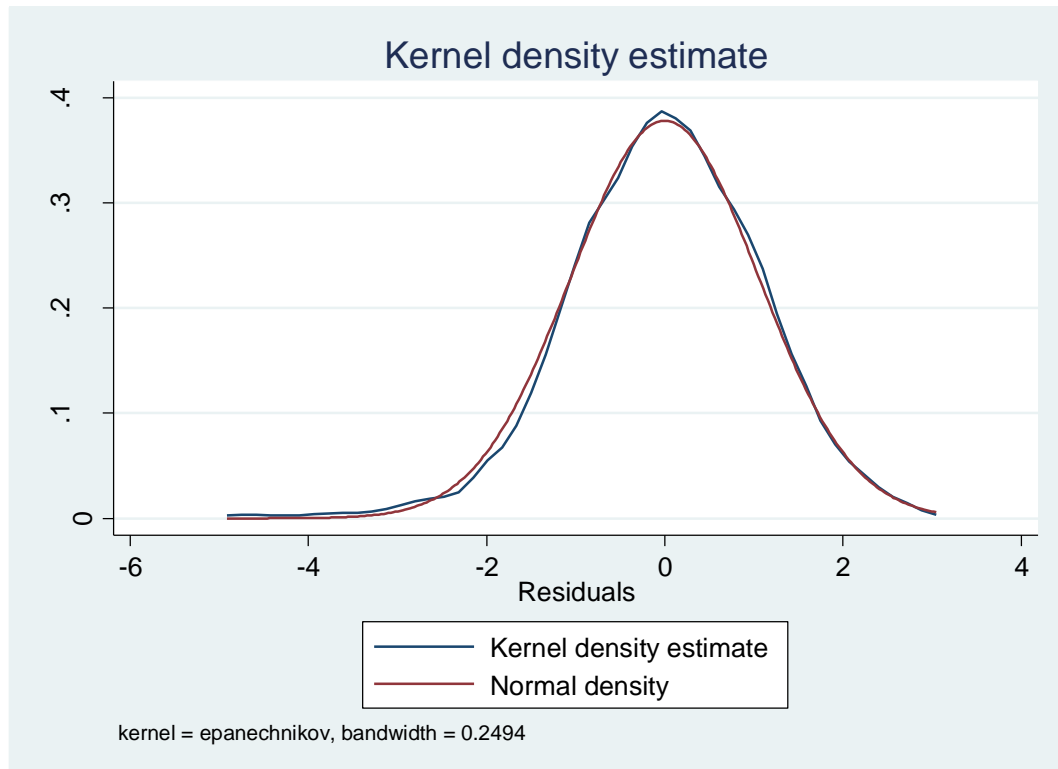
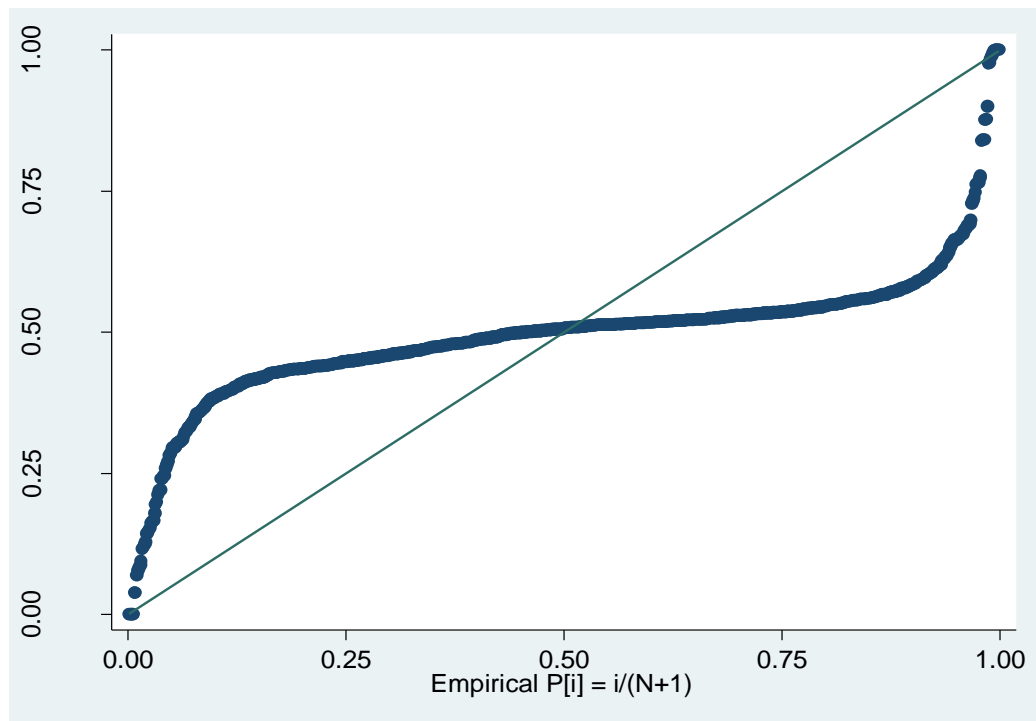


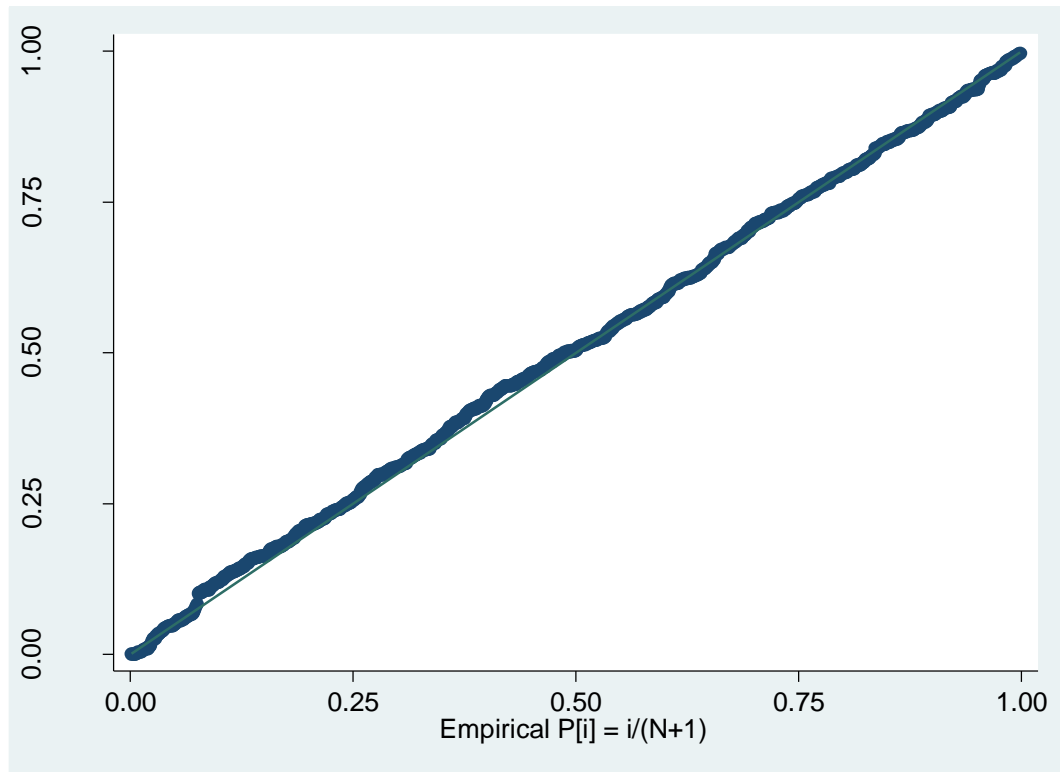
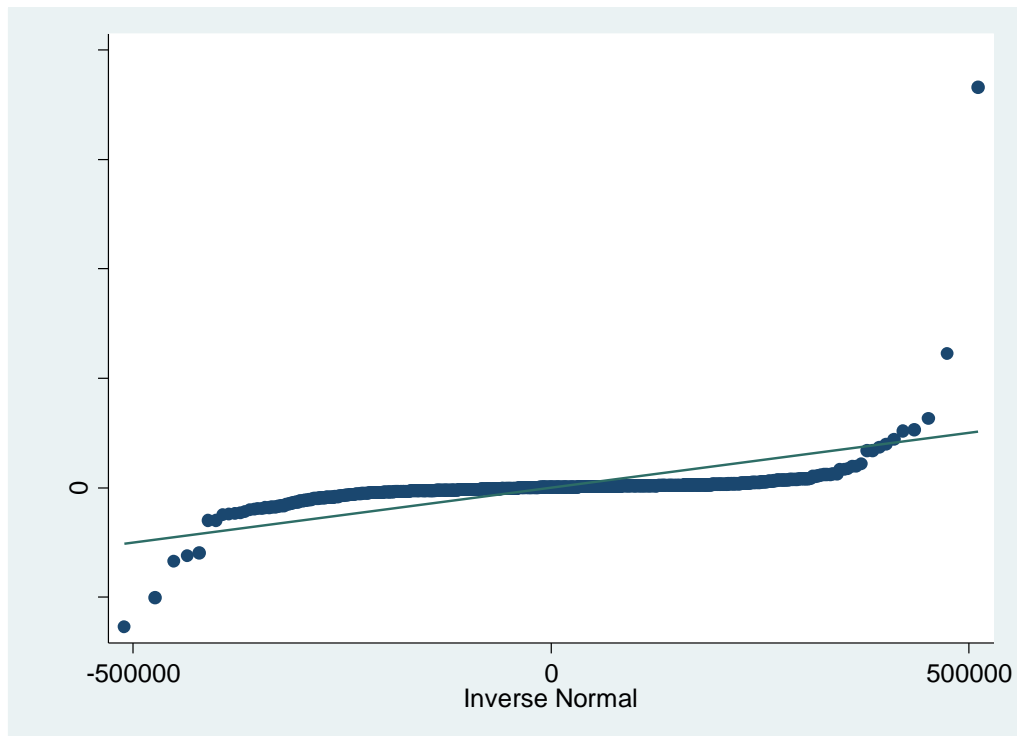
**Plot 33B: Residuals vs. Fitted values (transformed dependent and independent variables)**



**Plot 34B: Kernel density estimate: Density vs. Residuals (untransformed)**



**Plot 35B: Kernel density estimate: Density vs. Residuals (transformed)****Plot 36B: Normal probability plot (untransformed)**

**Plot 37B: Normal probability plot (transformed)****Plot 38B: Q-Q Plot (untransformed)**

**Plot 39B: Q-Q Plot (transformed)**