
Minnesota Recovery and Reinvestment Act: Was the money worth it?

In 2009, following the worst economic crash since the Great Depression, the Federal Government passed the largest stimulus package in history. This \$787 billion dollar package was designed to create and retain jobs, as well as start growth again for both the short and long term. Minnesota, as every other state, was given a portion of the package to use on state projects, with the purpose of getting Minnesotans back to work. Two years later, we are able to look back on the projects and find what has been accomplished with this money so far. By summarizing this data by State Agency and Congressional District, we are able to find both trends and anomalies that would otherwise be hidden. From here we can accurately determine the usefulness of this monumental act to Minnesota's economy.

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INTRODUCTION

Following the greatest collapse of the economy since the Great Depression, America found itself with astronomical unemployment rate and needed a change before it was too late. On February 13th 2009, U.S. Congress passed the American Recovery and Reinvestment Act of 2009. This bill was to first create new jobs and save those who were facing peril, and also upstart the troubled economy both in the short and long term. Because of the massive \$787 billion price tag, it is important that transparency remains a priority and that this money is kept track of so we can hold those accountable in our government. By summarizing this data by State Agency and Congressional District, we are able to find both trends and anomalies that would otherwise be hidden. From here we can accurately determine the usefulness of this monumental act to Minnesota's economy.

The first thing worth noting that many people don't understand about the Recovery Act is that as of March of 2012, only \$227 billion nationwide has been paid out in the form of contracts, grants, and loans. The remaining money has been paid in the form of tax benefits or entitlements. For this project, I am solely interested in the money used in direct fiscal injection like the contracts and grants. These projects range from areas of the government like Education and Transportation to Family and Health. When a project is approved a prime recipient of the funds is issued. According to the Office of Management and Budget from the White House, a prime recipient is defined as, "A non-Federal entity that receives Recovery Act funding awards directly from the Federal Government and is responsible for the quarterly reports on the status of the project including payments made and jobs created and or retained." These payments by prime recipients are made to either sub-recipients or vendors. A sub-recipient is an entity that expends Federal awards received from a prime recipient to carry out a Federal program. Lastly, a vendor is a seller providing goods or services required for the completion of a Federal program. For the purpose of this project, we will focus only on the prime and sub recipients of a Federal program.

DATA

This data was obtained through Recovery.MN, sponsored by the Minnesota Management and Budget. The data used in this analysis is as of March 30th, 2011. The data includes information from Prime Recipients, Sub Recipients, and Vendors. In particular, my summaries will be based on Prime Recipient data. Each project listed is supplied with an Award Date, State Agency, Amount Awarded, Amount Received, and Congressional District among many other variables. The ones listed above are the primary focus of this project. Before starting the analysis, the data had to be cleaned by removing unnecessary columns and ensure that nothing was missing. Upon further investigation, a significant portion of the Department of Transportation money was summed to one line of about \$554 million dollars with no Award Date given. The solution was to combine the DoT (Department of Transportation) specific money from an additional file with the original data set to ensure every dollar awarded was attached with an Award Date. The main software used in this project was Microsoft Access to create/run queries and JMP to obtain useful graphics.

SUMMARIES PROVIDED BY RECOVERY.MN

Prior to starting my project, the summaries available through Recovery.MN were extremely basic. As an example, Table 1 below shows a text table of dollars awarded and expended per State Agency. Though the information is clearly laid out, it is not very informative to the reader wondering things like why certain agencies only spent about half of their money awarded.

Agency totals	award	expenditure
Agriculture	\$69	\$69
Department of Labor and Industry	\$167	\$123
Public Utilities	\$883	\$249
State Arts Board	\$316	\$316
University of Minnesota	\$89,323	\$80,662
State Board on Aging	\$2,154	\$1,676
Veterans Affairs	\$6,177	\$4,190
Health	\$31,028	\$7,938
Pollution Control Agency	\$6,714	\$5,728
Military Affairs	\$5,593	\$5,564
Public Safety	\$21,718	\$12,835
Corrections	\$38,000	\$38,000
MnSCU	\$79,166	\$61,266
Housing Finance	\$90,548	\$82,300
Met Council	\$71,677	\$70,690
Commerce	\$208,946	\$136,208
Public Facilities Authority	\$107,141	\$102,320
Transportation	\$556,612	\$466,515
Department of Education	\$1,017,519	\$754,233
Employment and Economic Development	\$1,200,480	\$1,177,301
Department of Human Services	\$2,443,875	\$2,387,844
Sum	\$5,977,106	\$5,396,027

Table 1 – Recovery.MN Summary of Dollars Awarded/Expended by Agency

Table 2 is similar output created and was shown on the Recovery.MN website prior to starting this project displaying jobs created based on broad categories where the money was spent. It is important to note that Jobs Created/Retained is calculated by dividing the total number of job hours by the hours in a typical work week, explaining the fact that some categories created one fifth of a job. Looking at this table, we see that Education creates the most jobs but we are given no more information, such as how it varies across time. It is for these reasons that this project will better enable us to understand the data and attempt to find patterns as time continues across State Agencies or Congressional Districts.

Table 2 - Recovery.MN Summary of Jobs Created and Maintained by Category

Jobs Created/Maintained by Category	
Education	2124.42
Energy & Environment	672.48
Health & Human Services	96.57
Transportation	43.77
Public Safety	133.48
Workforce and Economic Development	113.76
Housing	17.95

ADDITIONAL SUMMARIES

In order to better understand this data, it is necessary to observe subsets based on a few different categories. Time obviously is an important variable as well as State Agency and Congressional District. By looking at these, we will be able to compare projects and decide where the money should continue being spent and if there are certain areas that are being underutilized.

One interesting item to look at in this data is whether or not the amount spent on projects changes over time. Below, Table 3 lists the month the awards were given in along with the total amount. We can see that April is unusual compared to the other months in Amount Awarded.

Table 3 - Dollars Awarded and Jobs created across Time

Award Month	Amount of Award	Number of Jobs
Jan	\$ 12,246,986	3.54
Feb	\$ 14,145,630	0.15
Mar	\$ 237,249,664	507.75
Apr	\$ 1,294,992,291	1,019.67
May	\$ 200,547,720	169.77
Jun	\$ 62,983,610	18.43
Jul	\$ 90,881,418	78.79
Aug	\$ 47,083,431	23.83
Sep	\$ 212,552,192	1,146.63
Oct	\$ 28,745,772	6.28
Nov	\$ 58,474,580	0.97
Dec	\$ 132,124,821	92.27
Total	\$ 2,392,028,115	3,068.08

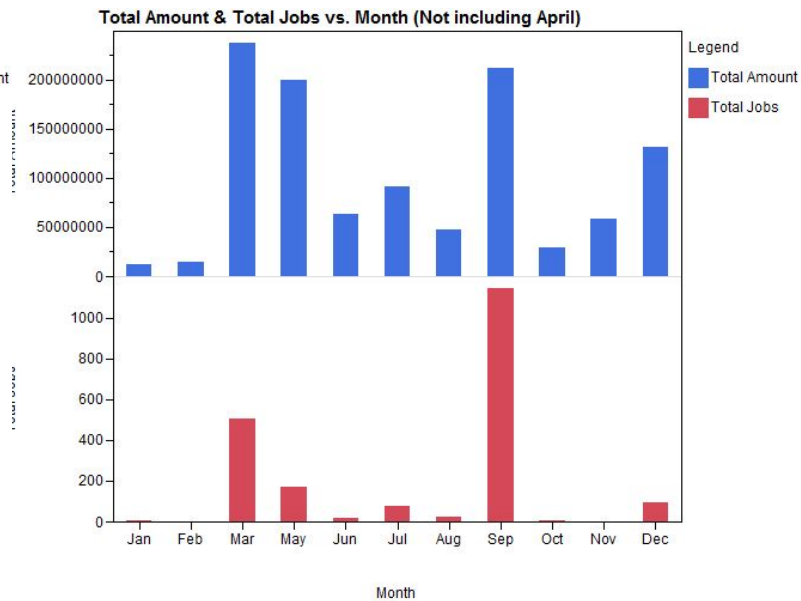
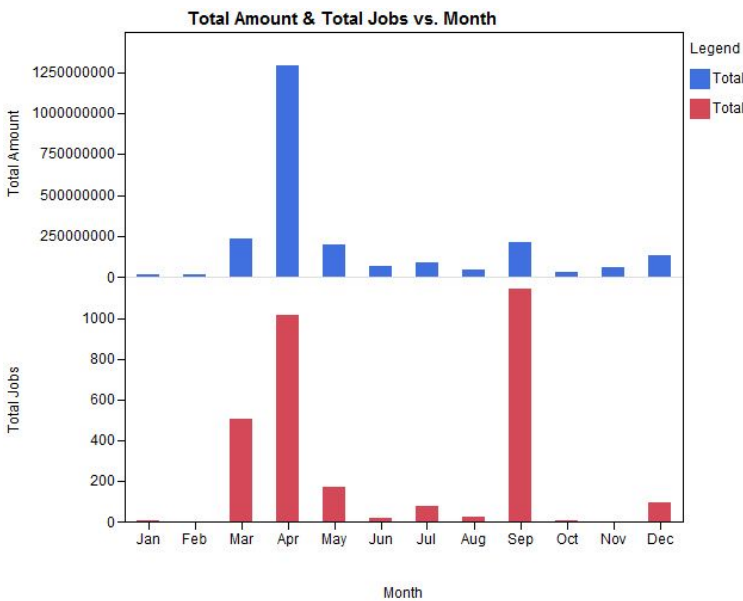


Figure 4 – Graph of Dollars and Jobs across Time by District (Including and Excluding District 4)

Figure 4 above shows a similar story and these differences are easier to see. Because April is so much larger in the Amount Awarded there is a version of this graphic on the right without April included to compare money spent and jobs created. By plotting both the Amount of the Award and number of Jobs Created across time we are able to see surprising results. Overall, more money spent in a particular month led to more jobs in the same time period. However, close to \$1.3 trillion was spent in April versus only about \$213 million in September when in fact over 100 more jobs were created or retained. Upon closer investigation, April was so high because of block payments to the Department of Human Services and Transportation which tend to be agencies that do not produce a lot of jobs but require a large amount of money to run.

Name of Recipient State Agency	Total Amount Awarded	Total Amount of Funds Received/Invoiced	% Received / Awarded
Board on Aging	\$ 1,554,895	\$ 1,554,895	100%
Department of Agriculture	\$ 69,494	\$ 69,494	100%
Department of Commerce	\$ 209,829,212	\$ 136,392,376	65%
Department of Education	\$ 1,185,406,692	\$ 891,103,874	75%
Department of Employment and Economic Development	\$ 21,004,727	\$ 13,058,862	62%
Department of Health	\$ 6,997,851	\$ 3,662,373	52%
Department of Human Services	\$ 186,702,735	\$ 182,973,934	98%
Department of Labor and Industry	\$ 166,945	\$ 123,328	74%
Department of Military Affairs	\$ 5,593,456	\$ 5,505,504	98%
Department of Public Safety	\$ 21,718,086	\$ 20,945,393	96%
Department of Transportation	\$ 554,767,104	\$ 464,653,077	84%
Department of Veterans Affairs	\$ 6,177,058	\$ 4,039,298	65%
Housing Finance Agency	\$ 28,434,123	\$ 28,199,223	99%
Metropolitan Council	\$ 68,724,956	\$ 67,800,711	99%
Pollution Control Agency	\$ 4,983,600	\$ 3,997,675	80%
Public Facilities Authority	\$ 107,141,000	\$ 102,324,613	96%
State Arts Board	\$ 316,200	\$ 316,200	100%
Total	\$ 2,409,588,134	\$ 1,926,720,830	80%

Table 5 - Summary of Dollars Awarded/Expended by Agency

State Agencies vary widely across a state. Similar to Table 1, Table 5 above also includes the percentage of dollars expended to date per State Agency. Investigating further to the Agencies that have utilized less than 65% of their overall awarded amount, we can see in Table 6 below the exact projects that have not yet invoiced their allotted money.

Table 6 – Low Invoiced Projects

Name of Recipient State Agency	CFDA Number	Total Amount Awarded	Total Amount Received/Invoiced	Project Count	Award Date
Department of Commerce	81.122	\$ 678,986.00	\$ 13,089.75	1	8/14/09
Department of Employment and Economic Development	17.275	\$ 6,000,000.00	\$ 281,000.00	16	1/29/10
Department of Health	93.717	\$ 652,728.00	\$ 141,941.29	2	8/30/09
Department of Employment and Economic Development	84.398	\$ 199,189.00	\$ 48,343.00	11	3/31/09
Department of Commerce	81.122	\$ 883,060.00	\$ 249,326.38	1	12/4/09
Department of Health	93.712	\$ 540,700.00	\$ 165,477.96	8	8/31/09
Department of Commerce	81.128	\$ 10,644,100.00	\$ 3,718,942.90	150	9/14/09
Department of Health	93.712	\$ 155,975.00	\$ 63,759.50	8	9/15/09
Department of Employment and Economic Development	17.275	\$ 1,155,488.00	\$ 506,000.00	16	12/1/09
Department of Commerce	81.041	\$ 54,172,000.00	\$ 25,096,463.68	90	4/20/09
Department of Health	93.414	\$ 107,775.00	\$ 50,944.76	1	9/15/09
Department of Commerce	81.117	\$ 349,985.00	\$ 174,261.63	2	11/16/09
Department of Health	10.578	\$ 2,935,346.00	\$ 1,573,152.36	1	10/29/09
Department of Health	93.717	\$ 404,863.00	\$ 217,052.02	2	8/28/09

Many of these projects falling under the Department of Commerce, Health, and Employment are not one-time projects, but rather on-going projects that will continue to use their money over the next few years. This explains why projects like those from the Department of Education and Transportation have invoiced a large portion of their money already since these projects are paid out at one-time and end relatively quickly, for example road construction and hiring of teachers.

One state agency in particular, Department of Transportation, demands more attention. Since this money is spread out across the state fairly equally, it is interesting to observe the trends of each Congressional District; this is what is shown in Figure 7 below.

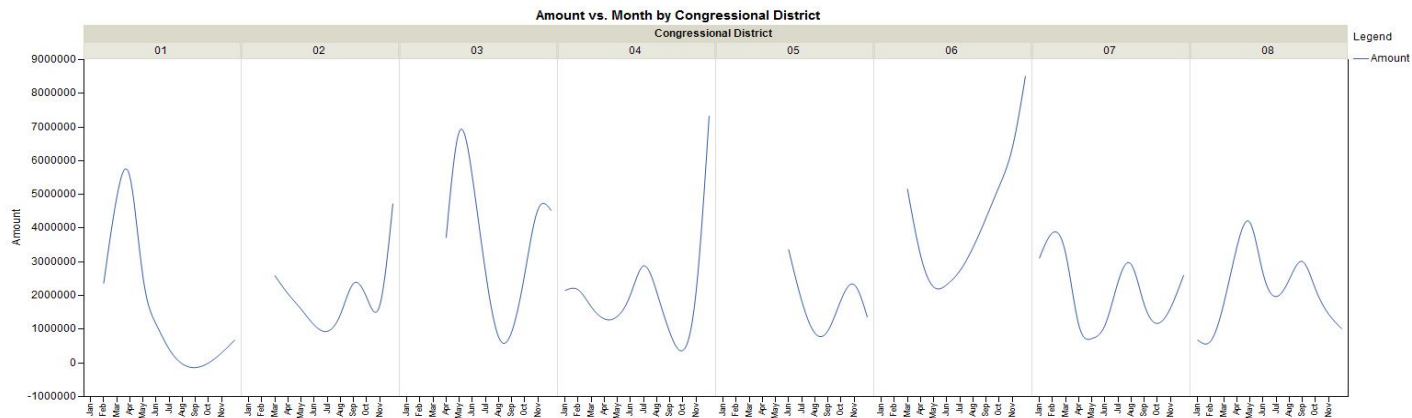


Figure 7 – Department of Transportation Spending Patterns across Congressional District

Looking at the trends, we see a clear pattern in Districts 2, 3, 4, and 6. These districts tended to spend money at the end of the year. However there are some districts that also spend a large amount of money in the first few months, Districts 1 and 4 in particular. It is not known why different districts have different spending patterns; however, reasons such as mandating that money be spent or else returned could be a major cause of such patterns. Since we see interesting trends just in DoT as time goes on, the next logical step would be to look at how Congressional Districts use all money across time, not limiting ourselves to just the Department of Transportation.

Congressional District could be a very important classifier that identifies trends and similarities. Since District 4 includes a good share of the biggest cities in the state its money spent is significantly higher than the other districts. Because of this fact it will be treated separately. First, we will observe the graphs of awards over time for all State Agencies across each district.

Figure 8 – Congressional District Spending Pattern by Month (District 4 separate)

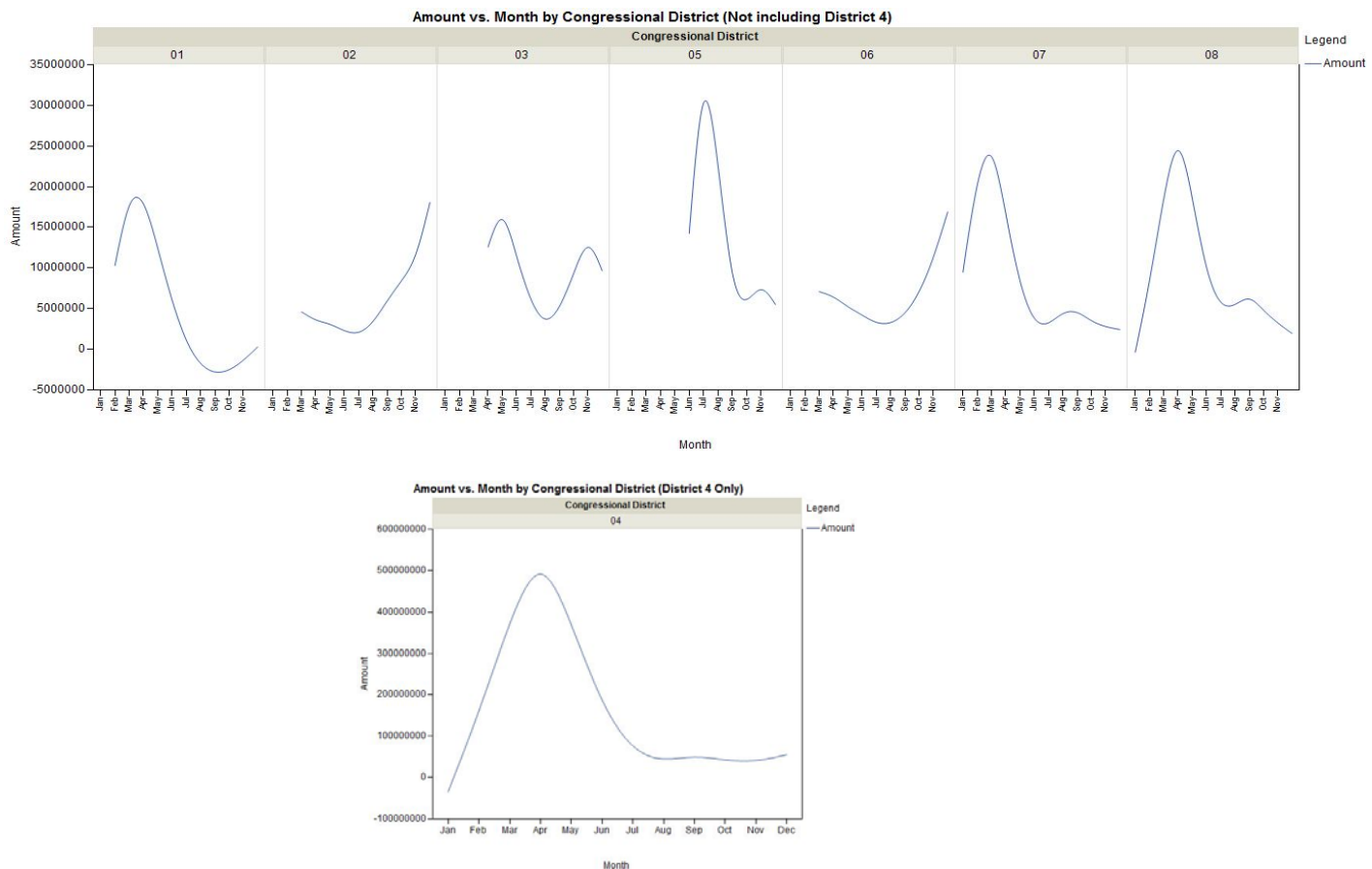


Figure 8 above shows the trend of how each Congressional District spent their overall Recovery Act money. Comparing this graphic to Figure 7 before, there is clearly a similar pattern that is similar to the

Department of Transportation. Districts 1, 7, and 8 all seem to spend their money early in the year compared to Districts 2 and 6 which seem to wait until the end. District 3 is interesting because of its bimodal nature, 2 big payments were given throughout the year. District 4 is shown below and we see a related pattern similar to that of Districts 1, 7 and 8. Although it's interesting to compare money spent by each Congressional District, comparing the amount spent against jobs created/retained can give us even more insight on how effective the Recovery and Reinvestment dollars are for the state of Minnesota.

Figure 9 – Congressional District Spending and Jobs Created Patterns by Month

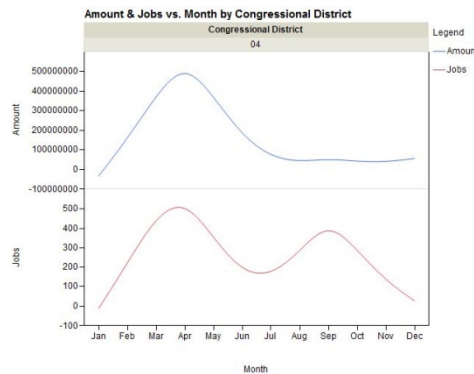
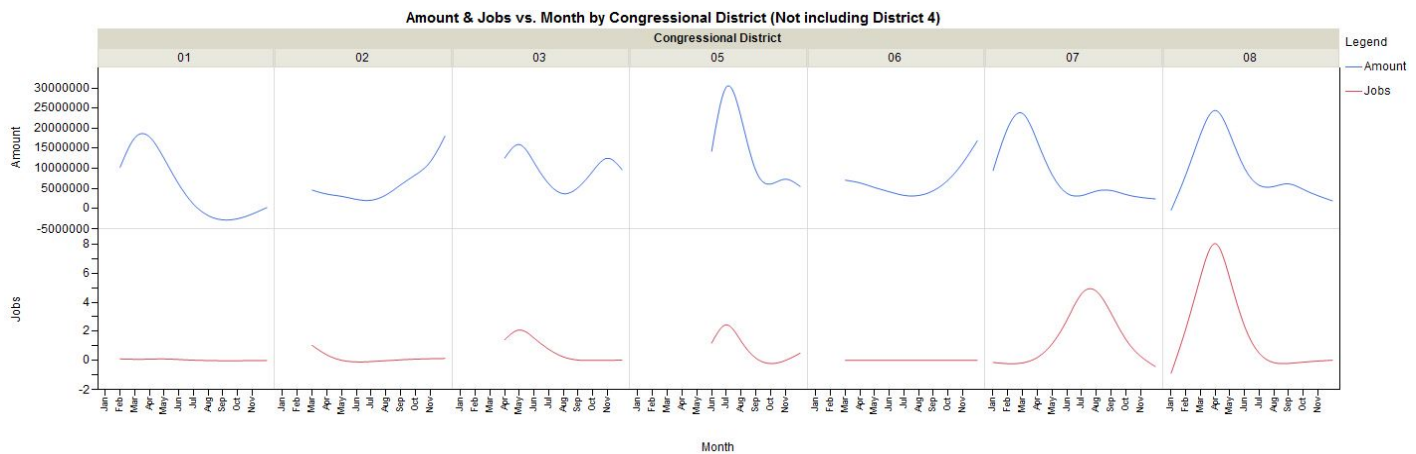


Figure 9 above includes both trends of amount of money spent as well as jobs created/retained below. The overall trend is more dollars spent creates more jobs, however there exist some instances where this does not hold. Examples of this include Districts 1, 2, and 6. Also interesting to see is District 7, where although the spike in money spent happened from January to March, the jobs did not start to spike until about July and August. In Districts 1, 2, and 6, most of the money awarded was to the Department of Transportation, which we now know is one of the least job-producing State Agencies.

CONCLUSION

By summarizing this data across Time by State Agency and Congressional District, we are able to find both trends and anomalies that would otherwise be hidden. It is important to identify these trends in order to accurately determine the usefulness of this monumental act to Minnesota's economy. As far as future research, it would be interesting to see if similar patterns hold in the future as this money continues to be spent. One might even be able to take the data one step further and compile data from all states for a national data set to determine if other states have similar spending patterns as Minnesota or even comparable spending patterns across regions.