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# A regression of real U.S. GDP on nominal prices across different geographic locations and Social Welfare

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A REGRESSION OF REAL U.S. GDP ON NOMINAL PRICES ACROSS  
DIFFERENT GEORGRAPHIC LOCATIONS AND  
SOCIAL WELFARE

by

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Degrees Earned

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B.A., Southern Illinois University, 2011

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A Research Paper  
Submitted in Partial Fulfillment of the Requirements for the  
Masters of Arts

Department of Economics  
in the Graduate School  
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May 2016

RESEARCH PAPER APPROVAL

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for the Degree of

Masters in Arts

in the field of Economics

Approved by:

Dr. Scott Gilbert, Chair

Graduate School  
Southern Illinois University Carbondale  
January 5, 2016

## AN ABSTRACT OF THE RESEARCH PAPER OF

Daniel VanOverbeke, for the Masters of Arts degree in Economics, presented on January 5, 2016, at Southern Illinois University Carbondale.

TITLE: A REGRESSION OF REAL UNITED STATES GDP ON NOMINAL PRICES  
ACROSS DIFFERENT GEORGRAPHIC LOCATIONS AND  
SOCIAL WELFARE

MAJOR PROFESSOR: Dr. Scott Gilbert

In this paper, I want to discuss some decision making capabilities that are vital for the survival of social welfare. I will show that society is better off with the choice to boost demand. I will also compare different social welfare issues that will get us into this paper's main point before we get into any of the economic variables that I researched. The difference between life and death could mean conforming to desperate times and eating dirt to survive; or the ability of society to refuse lies of hate that could possibly lead to a Holocaust scenario. These 2 examples are a bit extreme and may mean the difference between life and death. However, both choices can be compared to implementing public policy during economic distress since they all contribute to benefit social welfare. Similarly, a troubled economy could lead to both starvation and hatred (e.g. holocaust scenario) as we have seen before. The choice to eat dirt or refuse hate and learn how to love as one once sang will help lead to the survival of society and the total benefit of social welfare. The refusal to eat dirt one's belief that leads to hate (e.g. Anti-Semitic, Islamophobia) decrease social costs and save social welfare. Research in the '50's shows how brown and blue eyed children were lied to on different days about bigotry and it shows how easy the belief in hatred is society becomes; such as with any type of genocide. "The children acted like perfect little Nazis" says one of the test subjects today. This study shows that believing the

lie of hate, or refusing to eat dirt leads to detrimental damage to both private and social welfare costs in a society.

This example promotes the message I am trying to get across in the decision making process to help an economy survive. The choice to use public policy to boost demand during economic distress is just as important as eating dirt or refusing hate for overall social welfare. Government's choice to step in and boost demand could help save an economy. In addition, boosting demand in a recessive economy could contribute to society's social benefit in a comparable way as refusing racism or eating dirt; or in that matter any way to survive and benefit social welfare. The 3 examples presented above that contribute to social welfare benefit are all very different. However, my point simply portrays that they all can lead to the benefit of social welfare. Thus, the choice making process in all 3 examples should be similar. I want to pressure the importance to use public policy to boost demand when times call for it in this paper. When in Rome, do as the Romans. We must all use any tools available on our belt to fix the problem in up-to-the-minute time whether it be hate, starvation, or a recessive economy.

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## CHAPTER 1

### INTRODUCTION

I will analyze and explain the classical dichotomy portrayed in the U.S. economy to support the use of public policy during a recessive economy. Unimaginable unemployment, inflation and starvation are results of an economy that cannot contain itself as the U.S. first saw during the Great Depression. However, it was not the world's first dose of this type of problem. Factors that could destroy an economy; such as price bubbles attack every economy and it is not a question of if but when the next bubble will pop. "The classical dichotomy (Patinkin, 1965) refers to the idea that real variables, like output and employment, are independent of monetary variables".<sup>1</sup> I will attempt to explain the hypothesized inverse relationship between GDP and prices in this paper. I anticipate that the results will show a positive relationship between GDP and prices like the relationship found in the Philips curve. However, the Classical model states that there is no relationship. But, Keynesian thought says that there is a positive relationship that is shown in the Philips curve between these 2 types of variables. The Philips curve shows a negative relationship between unemployment and inflation thus showing a positive relationship to output. Classical thought states that interest rates will rise and investment will drop along with capital flows when prices rise. This leads to an increase in the nominal exchange rates and decreases net exports ultimately decreasing output and labor demand. Thus, there is no effect on real GDP. This is due

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<sup>1</sup> <http://nakedkeynesianism.blogspot.com/2014/06/what-is-classical-dichotomy.html>

to the variable of net exports in the GDP formula. Studying the costs and benefits of price swings could help decrease the negative impacts of GDP; particularly in a volatile stock and housing market. The study of GDP and prices could curb future discrepancies across the globe and help sustain social welfare. Net exports measure the impact of the foreign-trade sector on the economy. If exports outweigh imports, then the foreign-trade sector has a positive contribution to GDP.

I will test the relationship between nominal inflation and real GDP in my research. The idea that nominal variables like the money supply and inflation cannot affect real variables like the real level of output is made aware by the classical train of thought. It is critical to remember that nominal variables can affect other nominal variables under the Classical dichotomy school of thought. For example, the level of nominal output will increase because the nominal variable of prices increase. However, real GDP is adjusted for the current level of prices. Thus, real GDP shows no direct relationship to prices. It is also true that nominal variables can't affect real variables (e.g. real GDP, real interest rate, and real rate of inflation) under the classical school of thought. Government policy makers have debated whether or not the relationship between inflation and output holds and they have found some truth to this relationship during economic recessions and depressions during the U.S. business cycle.

My study will examine the relationship between GDP and prices in the U.S. with a multiple regression analysis. I will do an analysis using 2 multiple linear regression models. I will use several U.S. regional prices as independent variables and study their effects on real GDP as the endogenous variable (explanatory variable). The purpose of this paper is to help forecast where GDP is heading and curb any future impediments.

This research aims to shed light on the relationship (decoupling or recoupling) between GDP and prices. My research will also identify the greatest decoupling of GDP with any particular sector of prices and aim to help the efficacy of price setting. My paper will determine whether we are living in a Classical or Keynesian style economy? I dedicate this paper to social welfare and the overall betterment of economic research in the field of labor and welfare economics.

## CHAPTER 2

### THE ISSUE

The issue I am going to research stems from a history of trade that goes back to the beginning of civilization. The question of whether an economies many variables are affected by other variables in the economy is a no brainer. However, whether the variables are nominal or real makes all the difference. Nominal GDP is quickly affected by price changes since greater prices will inflate the value of GDP as well. However, real GDP is adjusted for time and shows that the actual real amount of goods bought in sold in an economy through means of consumption, investment, governmental, export-import spending. Real GDP should not change due to changes in the price level according to classical economics. Consumption demand seems to be the largest problem that exacerbates falling output during recessionary periods. Investment and government spending are well off, however exports seem to be weakening as well. Low exports are a serious problem to exports. However, the loss of consumer confidence seems to be the biggest problem that led to the Great Depression of '29 and the Great Recession of '01. The weakening economy exposes that the need for public policy that increases demand to avoid a deepening recession.

The idea that nominal variables can't affect real variables stems from the classical school of thought and is called the classical dichotomy. This relationship may or may not hold true in my research at the 5% significance and the 10% significance level. "The classical dichotomy's, essentially, a derivation of the quantity theory of money, which is captured by the formula  $MV = PY$ , where M stands for the money

stock,  $V$  is the velocity of money circulation,  $P$  is the price level, and  $Y$  is the level of income. The monetary value of output ( $PY$ ) is thus equal to overall aggregate monetary expenditure. Exogenous changes in the money supply ( $M$ ) ultimately condition the price level for a given level of economic activity. If an economic system is at full employment, the only effect of increases in the money supply is a proportionate increase in the domestic price level, which gives rise to a depreciation of its currency's exchange rate. The direction of causality runs therefore from an exogenous money supply to the price level". (1) There is a lot of mystery of what leaves output unchanged in this equation since the money velocity ( $MV$ ) equation shows how inflation is unrelated to the level of output. This leads us to question what happens here to keep output left unchanged. The answer is explained by the natural rate of interest. "Exogenous changes in the supply of money are what shift market rates of interest. This is the process by which discrepancies between market rates and the natural rate of interest are generated. A market rate of interest below the natural interest rate occurs when investment exceeds savings. Firms will demand more credit for investing. The result is an excess of investment over savings. If the economy is at the full-employment position, defined by the natural rate of interest, a cumulative process of inflation unfolds. The rise in the price of consumption goods leads to a decrease in consumption; involuntary savings rise until the excess of investment over savings is eventually eliminated. If market rates of interest are above the natural rate of interest, by contrast, savings exceed investment and a cumulative process of deflation ensues". (1) This explanation helps us see why a classical dichotomy is pervasive during economic boom periods since there is less confidence in society. However, the busts of '29 and '01 portrayed a very diverse

perspective of how the classical dichotomy can be distorted by other market forces.

This leads to Keynesian policies implemented by policy makers that show how demand must be increased to control prices to avoid further volatility of output.

## Chapter 3

### LITERATURE REVIEW

The invisible hand that Smith speaks of is the functional tool that propels classical economic thought. The hand that results in Smith's fear of civil government interfering with economics helps keep the economy stabilized. He compares the abilities of civil government as a functional tool to make the rich richer and the poor poorer. "Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own advantage, indeed, and not that of the society which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer that employment which is most advantageous to society... He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was not part of his intention".<sup>2</sup> This way of thinking left policy makers helpless in the many Western economies. The invisible hand that would not only be invisible but gone altogether is no way to steer an economy out of economic downturns. The invisible hand failed to show for the rescue in the Great Depression that swept the globe in the '29 crash and again the Recession of '01.

The crash led many to believe that the invisible hand was systematically problematic. The problems pervaded from consumers themselves whom feared a weak economy. These weakened economies are a cesspool for problems to pervade throughout the economic cycle. Consumers don't spend or save and this causes interest rates to become volatile and problems to arise throughout an economy. The

issue is still arising even though we know what to do because of the difficulty to see what stage of the business cycle we are currently in. The key is knowing what public policy to implement during the right part of the business cycle. Real business cycles work in boom and bust real business cycles and are studied extensively to prevent the next big bust. Problems arise if an economy does not start to boom again. This is exacerbated by Classical economic policies that sit back and wait for the invisible hand to react. University economic programs teach that that an economy can portray either a Classical or Keynesian economic train of thought. The trick is to know how to react to both trains of thought in real time.

My focus will try to pinpoint what American economic frame of thought (type of economy) we are now dealing with. I will compare the 30 year period before the '01 recession and the 30 year period that includes the period after the '01 recession and consider what characteristics the economy is portraying. I hypothesize that the economy is going to be portraying more of a Keynesian school of thought after the '01 recession started just like the '29 depression portrayed. Keynesian economic thought saved the economy once before in the Great Depression and can once again if we use it in a timely manner and avoid the classical approach with the correct civil government policy making in a timely manner.

An economy in a slump is vulnerable to all types of hardships. Many economist

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<sup>2</sup> [http://www.goodreads.com/author/quotes/14424.Adam\\_Smith](http://www.goodreads.com/author/quotes/14424.Adam_Smith)



had both Keynesian and Classical trains of thought throughout the 18<sup>th</sup> and 19<sup>th</sup> century; however no one got things cleared up until Keynes did. “Keynes argued that expansionary fiscal policy represented the surest tool for bringing the economy back to full employment. The United States did not carry out such a policy until world war prompted increased federal spending for defense. New Deal policies did seek to stimulate employment through a variety of federal programs. But, with state and local governments continuing to cut purchases and raise taxes, the net effect of government at all levels on the economy did not increase aggregate demand during the Roosevelt administration until the onset of world war. “World War II Ends the Great Depression” shows, expansionary fiscal policies forced by the war had brought output back to potential by 1941. The U.S. entry into World War II after Japan’s attack on American forces in Pearl Harbor in December of 1941 led to much sharper increases in government purchases, and the economy pushed quickly into an inflationary gap. For Keynesian economists, the Great Depression provided impressive confirmation of Keynes’s ideas.

A sharp reduction in aggregate demand had gotten the trouble started. The recessionary gap created by the change in aggregate demand had persisted for more than a decade. And expansionary fiscal policy had put a swift end to the worst macroeconomic nightmare in U.S. history—even if that policy had been forced on the country by a war that would prove to be one of the worst episodes of world history”.<sup>3</sup> The economics that led to the Great Depression could have long term social welfare

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<sup>3</sup> <http://web-books.com/eLibrary/NC/B0/B62/084MB62.html>

effects on us today if something does not come up to change the direction things are going.

The period above represents how beliefs change when they need to. It is the evolution of thought altogether that make us human and propels us to help the way society thrives and survives best for social welfare. The Classical dichotomy school of thought got off to a strong start, however it was confronted by Keynesian thinking that saved the way social welfare was affected in economic distress. Keynes ideas saw confirmation in the Great Depression and there is also confirmation in the economy we are living in today. The American economy started showing signs of Keynesian public policy after the '01 recession. Leaders at the state level from the top to bottom were affected by this school of thought and acted accordingly when recessionary periods surfaced. Policy makers will continue to think of ways that they can use Keynesian policies to protect and benefit economic public policy.

Figure 1

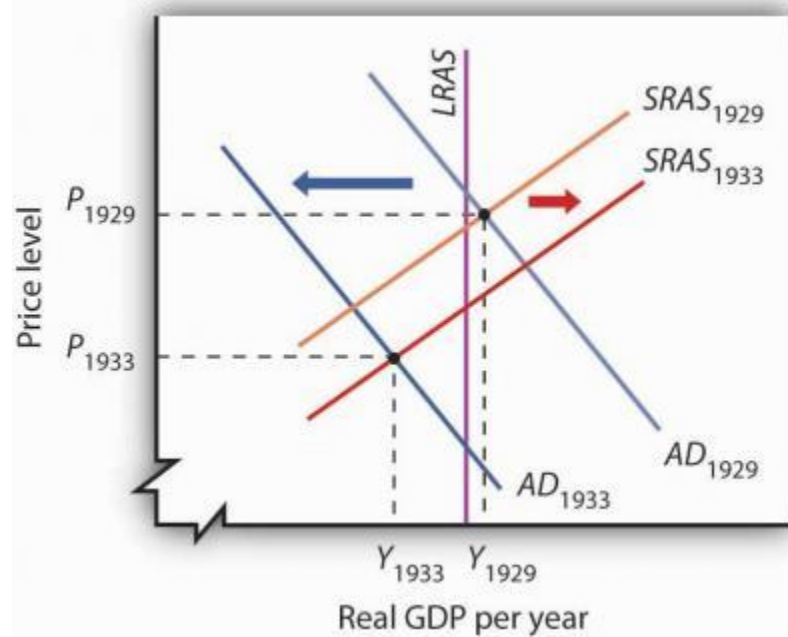
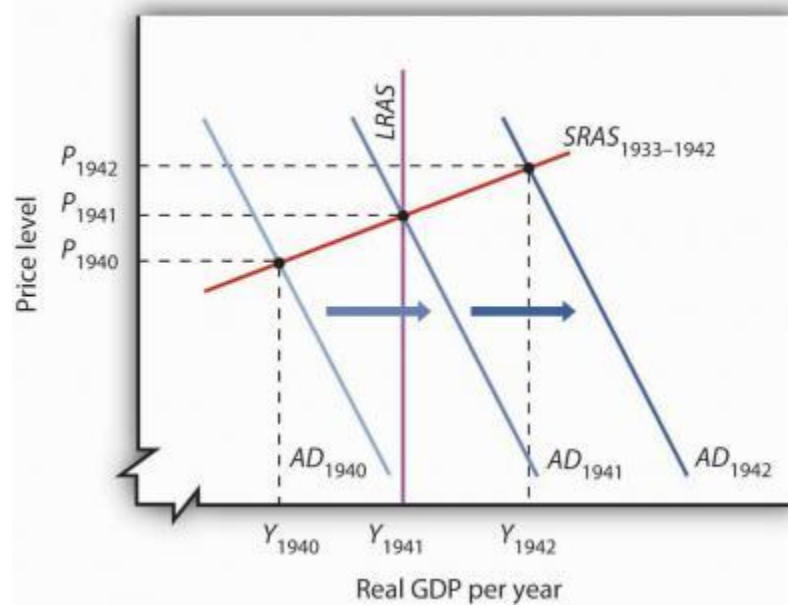
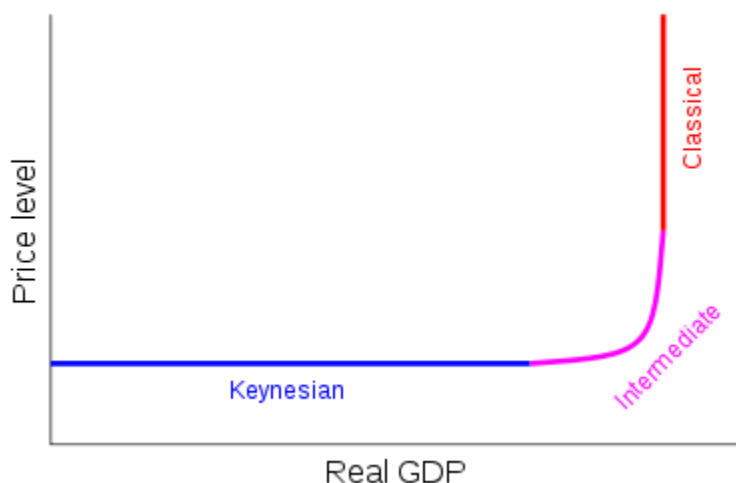


Figure 2



(<http://web-books.com/eLibrary/NC/B0/B62/084MB62.html>)

Figure 3



Aggregate supply curve showing the three ranges: Keynesian, Intermediate, and Classical. In the Classical range, the economy is producing at full employment.

The existence of Say's law in a classical economy is plausible. However, supply doesn't always determine output during recessionary periods and this is when demand needs to be the main focus for policy makers. "Any increase in demand and production induces increases in prices. Thus, the AS curve is steep or vertical. Aggregate supply is targeted by government "supply side policies" which are meant to increase productive efficiency and hence national output. Some examples of supply side policies include: education and training, research and development, supporting small/medium entrepreneurs, decreasing business taxes, making labor market reforms to diminish frictions that may hold down output, and investing in infrastructure".<sup>4</sup> The AS curve

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<sup>4</sup> [https://en.m.wikipedia.org/wiki/Aggregate\\_supply](https://en.m.wikipedia.org/wiki/Aggregate_supply)

helps us better understand how GDP responds to changes in price during the short term (Keynesian thought) and the long term (Classical thought).

The idea to use demand to increase output is not a new way of thinking even for Keynesian thinking. Any ability to increase social welfare should be used when it can. “Many eighteenth- and nineteenth-century economists developed theoretical arguments suggesting that changes in aggregate demand could affect the real level of economic activity in the short run. Like the new Keynesians, they based their arguments on the concept of price stickiness. Henry Thornton’s 1802 book, *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain*, argued that a reduction in the money supply could, because of wage stickiness, produce a short-run slump in output: “There is reason, therefore, to fear that the unnatural and extraordinary low price arising from the sort of distress of which we now speak, would occasion much discouragement of the fabrication of manufactures.” A half-century earlier, David Hume noted that an increase in the quantity of money would boost output in the short run, again because of the stickiness of prices”.<sup>5</sup> We have implemented Keynesian public policy to increase demand during recessionary periods of the economy ever since the Great Depression. The policy would have helped avoid the worst period in the U.S. economy if it was used in a timely manner.

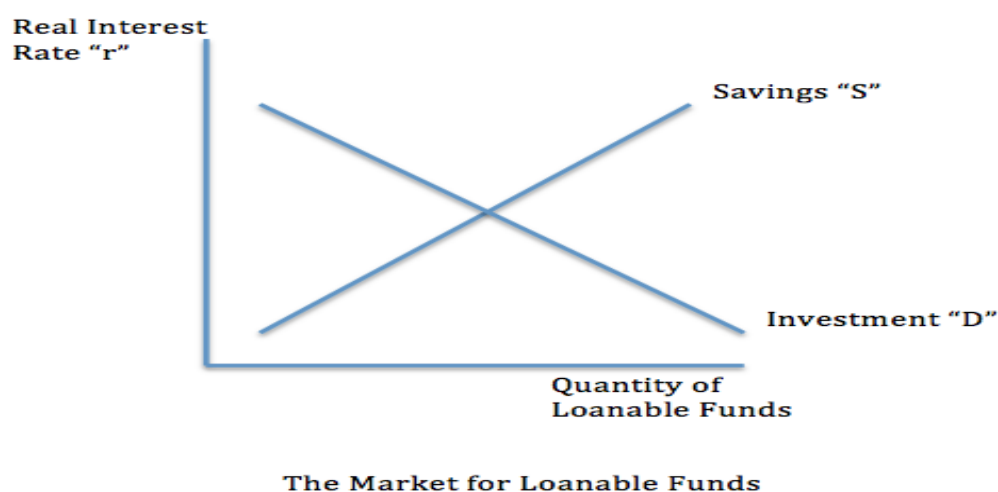
Laissez Faire, “to leave alone” is such a peaceful philosophical idea never perceived to go wrong. However, the idea can quickly fall apart if there isn’t the proper intervention at the proper stage of distress. An economy without the hands at the

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<sup>5</sup> <http://webbooks.com/eLibrary>

wheel with a mentality of “let it be” would work if you could “let it not be” as soon as anything goes wrong. Classical economists believed that full employment would be preserved and an economy would bounce back due to the ability of loanable funds (graph below). In addition, the way that the interest rate would be held in a Walrasian equilibrium level would also help an economy bounce back to a recovery. However, they were wrong during the economic recessions we have had to face. The Keynesian theory of economics helped save the U.S. economy after the great depression and again in the Great recessions with the “too big to fail” bailouts of '08 along with other ways to boost demand. This lead many to believe that both ways of thinking (Keynesian and Classical thinking) are required to run a balanced economy.

Figure 4



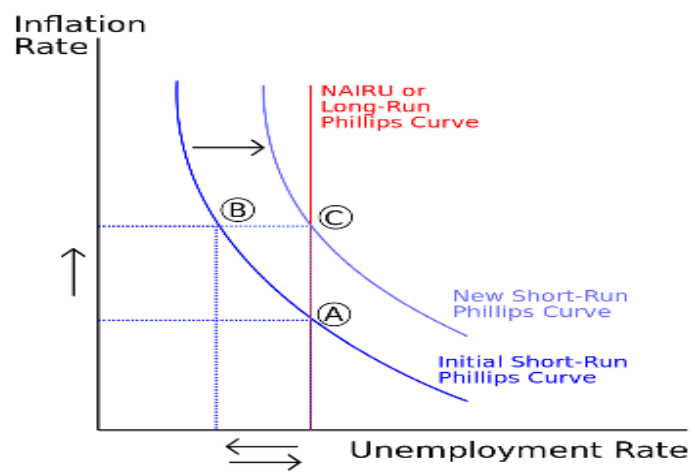
Keynesians have long implied the relationship between inflation and real GDP through the negative relationship of the Philips curve. This relationship implies that an increase in inflation is actually good for the economy. This is further explained by Michael Woodford in his paper on “Interest and Prices”. “Standard general-equilibrium

models—and the earliest generation of quantitative equilibrium models of business fluctuations, the real-business-cycle models of the 1980s—indicate that the absolute level of prices should be irrelevant for the allocation of resources, which depends only on relative prices. Traditional Keynesian macro econometric models, of course, imply otherwise: Variations in the growth rate of wages and prices are found to be associated with substantial variations in economic activity and employment. Yet the existence of such “Phillips-curve” relations has typically been held to imply that monetary policy should be used to achieve output or employment goals, rather than giving priority to price stability”.<sup>6</sup> I may anticipate to find this is true in my own research after the Great Recession since there is a stronger relationship between prices and output during recessionary periods shown during the Great Depression. Therefore, it seems that both the Classical and Keynesian schools are correct some of the time. However, there is a time and place for both schools to take action in an economy.

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<sup>6</sup> <http://press.princeton.edu/chapters/s7603.pdf>

Figure 5



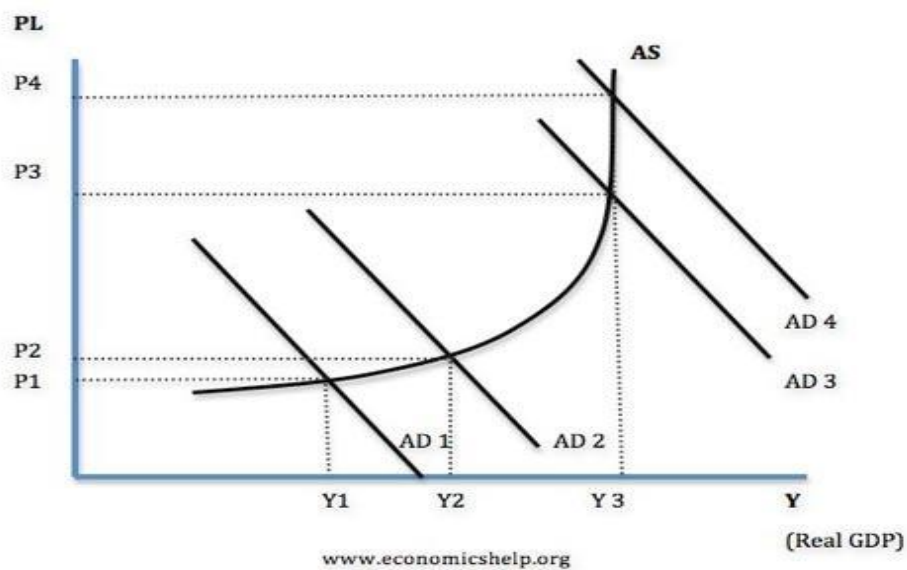


## Chapter 4

## RESULTS

Does inflation affect GDP? This answer depends whether we are talking about nominal or real GDP. The Classical Economists argue that there is a classical dichotomy in the economy that doesn't allow nominal variables like inflation to affect real variables like real GDP. However, nominal GDP can be affected because like inflation it is a nominal variable. The idea is intriguing that real GDP is unaffected by inflation (prices) in the long run. The AD/AS graph shows that there is no relationship in the long run between prices and GDP. However, in the short run the Keynesian model (**Figure 6**) part of A/S curve has sticky prices and no relationship with GDP. However, there is the middle part of the curve between AS curve where there is some positive movement of real GDP and full employment in the short run that is expressed in the Phillips curve between the short and long runs as well.

Figure 6



I regressed GDP on prices using SPSS statistical software to conduct my research on the relationship between real GDP and inflation. I found no relationship at the 5 percent significance level, which is explained by the classical dichotomous relationship that nominal variables do not affect real variables. However, I found some interesting results for the two 30 year time periods that I tested. I found that for the years after the great recession there was more statistical significance and less error for the model between the relationship of real GDP and inflation. The relationship was still non-significant at the 95% confidence level. However, there was some statistical significance at the 90 % confidence level for national and Midwest urban prices. The economy portrays a recoupling Keynesian relationship between nominal and real variables and less of a decoupling dichotomous relationship due to the unstable relationship of consumer confidence. This shows us that the economy is showing signs of a recoupling between nominal and real variables of an economy in a recessionary period. This is partially due to less consumer confidence that decreases demand. Thus, there is more support for the Philips relationship and support is given for Keynesian public policy to preserve social welfare.

The birth of Macroeconomics was created due to Keynes views that the classical school of thought missed some important points. Keynes said the length of these recessions and the many problems with long unemployment that classical economist could not address led him to his way of thinking. "A related observation was that measures of aggregate demand and prices were positively correlated with measures of real output and employment, in apparent contradiction to the classical result that changes in a purely nominal magnitude like the general price level were pure unit

changes which should not alter real behavior" (Lucas '79).<sup>7</sup> The U.S. data for 1984-2015 in the U.S. shows a Keynesian relationship that is statistically significant between real GDP and inflation at the 10% significance level in my research. However, there was no statistical relationship at the 10% significance level for the 30 year period before the "Great Recession". This change in significance leads one to believe that the disruption from the Great Recession created the statistical relationship between prices and output just as it had in the "Great Depression". Thus, there is a recoupling of the relationship between GDP and inflation during recessionary periods. This shows how and when it is best to use public policy to control the level of output.

This relationship led to Keynesian public policy where the government steps in and plays a role in intervening to save the economy. The first act of public policy was a form of privatization over the banking sector that resulted in a successful play for policy makers in the great bank "bailout". Many believed this act was a mistake of policy makers since many CEO's got their golden parachute packages and took a mile when Keynesian public policy gave them an inch. The lesson was learned that we should not trust bankers with money. However, today it is perceived that this act helped save us from cataclysmic changes in the long run ever since Ford recently paid off their bailout package last year. Classical economists would roll over in their graves if they knew how close this economy came to crashing had it not been for Keynesian government intervention. The statistics represent a 40% probability (probability that our statistics are correct) that the Classical train of thought left the station in 2001 and the

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<sup>7</sup> <https://www.minneapolisfed.org>

government needed to step in to spice up the demand levels to a healthy state when the Keynesian train of thought showed up at the station where Classical thinking just left.

In conclusion, the relationship between inflation and output does not hold according to my research at the 5% significance level and the Classical dichotomy is supported. However, this does not mean that economic policy makers should avoid stepping in completely at a 5 % significance level. I found a slightly stronger relationship between output and inflation during economic downturns at the 10% significance level. The requirement to have public policies that save the economy from an economic downspin are very relevant in an economic downturn and may avoid further social costs related to recessionary periods. Real business cycles call for diverse policies implemented by politicians and the Fed during their cycles. The action to step in and dump billions of dollars into demand to jumpstart an economy leads to social welfare benefits. The idea of Say's law (Supply determines demand) does not always hold in a struggling economy and should thus be improvised for the right time and place where demand determines output. Therefore, it is just as vital to society to prevent revolutions from starvation and hatred as it is to prevent a death of an economy. Public policy provides a resolution to prevent economic downfalls and should be used to avoid social losses. Social welfare costs will be further avoided if we can avoid hatred, starvation, and economic downturns. Eating dirt, choosing love instead of hate, or choosing Keynesian instead of Classical economic thought all may add to the

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social benefit of society in the long run. Therefore, when in Rome I say do as the Romans do and do what you need to survive.

## CHAPTER 5

### RECOMMENDATIONS

The recommendations for governmental instruction of an economy would be to follow Classical and Keynesian thought when the economy calls for it. The government knows that Classical and Keynesian Economists are both right some of the time and there is a time and place for everything while in Rome. When in Rome, we do as the Romans and change policies accordingly within business cycles. This research shows that the bailout of '08 has economic justifications for how to handle a recession when one's choice creates a disruption (shock) to the equilibrium levels of the interest rate and begins to affect the U.S. economy. It comes down to the analysis of consumer behavior on how to determine where an economy is going in the future. This year's economic Nobel Prize winner's research was related to consumer behavior because of its close relationship in an economy to welfare economics. The social costs and benefits are the end product of public policy decision making. Thus, this field needs to be better understood so that we can help which path an economy's social welfare level is heading. The field of welfare economics is largely and grossly misunderstood. It is just slowly beginning to particulate the differences in consumer's choices and how they affect the economy by their consumption and savings. However, things get tricky when consumers do not trust the banking system (e.g. Great Depression). This mistrust leads to people hoarding money to make sure they can afford things if the banks fail. These types of problems lead to a disruption to equilibrium interest rates and create a change in the full level of employment that makes changes to real GDP.

## DATA

I will use data real GDP for 1984-2014 from FRED (Federal Reserve Economic Data).

I will retrieve data for 1984-20014 for prices and export and import prices from

<http://data.bls.gov/pdq/SurveyOutputServlet>

## METHODS

Ordinary Least Squares Method with SPSS

Simple Linear Regression Method with SPSS

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- 6.) <http://press.princeton.edu/chapters/s7603.pdf>
- 7.) <https://www.minneapolisfed.org>



Table 1

		gdp _growth '70-'00	cor eprice_national	pric e_national	pric e_northeast_urb an	pric e_midwest_urba n	pric e_west_urban
Pearson	gdp_growth	1.0	-	-	-	-	-
Correlation	'70-'00	.00	.642	.614	.645	.587	.568
	coreprice_nati onal	- .642	1.0 00	.94 9	.92 8	.93 7	.94 9
	price_national	- .614	.94 9	1.0 00	.97 8	.99 1	.98 5
	price_northea st_urban	- .645	.92 8	.97 8	1.0 00	.95 2	.94 7
	price_midwes t_urban	- .587	.93 7	.99 1	.95 2	1.0 00	.97 4
	price_west_ur ban	- .568	.94 9	.98 5	.94 7	.97 4	1.0 00
Sig. (1- tailed)	gdp_growth		.00	.00	.00	.00	.00
	'70-'00		0	0	0	0	1
	coreprice_nati onal	.00 0		.00 0	.00 0	.00 0	.00 0
	price_national	.00 0	.00 0		.00 0	.00 0	.00 0
	price_northea st_urban	.00 0	.00 0	.00 0		.00 0	.00 0
	price_midwes t_urban	.00 0	.00 0	.00 0	.00 0		.00 0
	price_west_ur ban	.00 1	.00 0	.00 0	.00 0	.00 0	

Table 2

		gd	cor	pric	pric	pric	pric
		p_growth '84-'14	eprice_national	e_national	e_northeast_urban	e_midwest_urban	e_west_urban
Pearson	gdp_growth	1.0	-	-	-	-	-
Correlation	'84-'14	.00	.867	.486	.529	.455	.537
	coreprice_national	-	1.0	.69	.72	.61	.75
	price_national	.867	.00	.486	.529	.455	.537
	price_northeast_urban	-	.69	1.0	.96	.97	.95
	price_midwest_urban	.486	.486	.486	.6	.2	.8
	price_west_urban	-	.72	.96	1.0	.90	.91
	price_northeast_urban	.529	.529	.529	.6	.6	.5
	price_midwest_urban	-	.61	.97	.90	1.0	.90
	price_west_urban	.455	.455	.455	.6	.00	.1
	price_west_urban	-	.75	.95	.91	.90	1.0
	price_west_urban	.537	.537	.537	.5	.1	.00
Sig. (1-tailed)	gdp_growth		.00	.00	.00	.00	.00
	'84-'14		.0	.3	.1	.6	.1
	coreprice_national	.00		.00	.00	.00	.00
	price_national	.0		.0	.0	.0	.0
	price_northeast_urban	.00	.00		.00	.00	.00
	price_midwest_urban	.3	.0		.0	.0	.0
	price_west_urban	.00	.00	.00		.00	.00
	price_northeast_urban	.00	.00	.00		.00	.00
	price_midwest_urban	.1	.0	.0		.0	.0
	price_west_urban	.00	.00	.00	.00		.00
	price_west_urban	.6	.0	.0	.0		.0
	price_west_urban	.00	.00	.00	.00	.00	
	price_west_urban	.1	.0	.0	.0	.0	

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