

1-2017

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## Repository Citation

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GOVERNANCE BY ECONOMIST:  
AN HISTORICAL NOTE ON THE KEYNESIAN REVOLUTION

by

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The State will have to exercise a guiding influence on the propensity to consume partly through its scheme of taxation, partly by fixing the rate of interest, and partly, perhaps, in other ways. Furthermore, it seems unlikely that the influence of banking policy on the rate of interest will be sufficient by itself to determine an optimum rate of investment. I conceive, therefore, that a somewhat comprehensive socialisation of investment will prove the only means of securing an approximation to full employment; though this need not exclude all manner of compromises and of devices by which public authority will co-operate with private initiative.\*

John Maynard Keynes (1936)

The issue of the use of central authority, the state, or, alternatively, the decentralized market to confront economic and social problems has been a matter of recurring importance in the realm of economic policy in the modern Western world. This was the large issue between Adam Smith who made the case in the *Wealth of Nations* for a more decentralized economic order serving the interests of the consumer as against the more centrally regulated economic order of mercantilism serving the interests of the nation, national security. That the market mechanism is an instrument for working out economic and social problems is

one of the more robust of the intellectual insights catalogued by Smith in the *Wealth of Nations*.<sup>1</sup>

This issue, in the arena of macroeconomic policy, is the degree to which the central authority of the state is to be used to shape national stabilization policy and the extent to which the market is to be relied upon to guide the performance of the aggregate economy. Beneath this issue was the famous nineteenth century debate between Thomas Malthus and David Ricardo on the possibility of a general glut in an unfettered economy.<sup>2</sup> On the one side, Malthus argued that increased savings may well lead to a period of underconsumption followed by a contraction in production and employment, and, therefore, a time of problematic stagnation. On the other side, Ricardo countered with a set of arguments pointing to the impossibility of a glut in the overall economy. First, an unlimited demand for goods, in human nature, put an upward bias on production and employment in the economy; second, Say's Law of Markets, which held that production created income sufficient to turn around and purchase the output, was interpreted to suggest that demand and supply in the aggregate marketplace would always be in balance; and, third, any imbalances between demand and supply in individual markets would be automatically corrected by the flexible price regime, the system of lithe prices in product, labor, and money markets.<sup>3</sup>

This question of macroeconomic governance, in the twentieth century, was the large issue between John Maynard Keynes and the Classical economists including John Stuart Mill, Alfred Marshall, F. Y. Edgeworth, and A. C. Pigou. Keynes, taking the side of Malthus, made the case in *The General Theory of Employment, Interest, and Money* for the

necessity of a national program to promote stability in an aggregate economy prone to the instability of high unemployment and inflation. The Classics, following Ricardo, considered the unfettered, *laissez faire*, economy as essentially a stable mechanism, a system inclined toward growth in output and full employment in the long-run.<sup>4</sup>

The United States economy over the just concluded twentieth century presents a case, a natural experiment of an approximate sort, to compare the performance of an economy operating under these two alternative systems, the "Keynesian economy" governed by the market, augmented by a national stabilization policy, in the latter part of the century, versus the "Classical economy" governed by the market without a national stabilization program in the first part of the century. Accordingly, this exercise considers the performance of the political economy in the aggregate with respect to production, unemployment, and inflation over the twentieth century using a data set organized by presidential administration. My concern, here, therefore, centers on comparing the performance of the economy under "Keynesian presidential administrations" with that under the preceding "Classical presidencies." From these comparisons we may be able to draw out some impressions concerning the performance of these alternative economies, and hazard an informed guess on some of the more prominent consequences of the Keynesian Revolution for the American economy.

This paper is presented in three parts. The first part summarizes the analysis used in this exercise. The second segment presents the results of the investigation. And the third section brings the note to a close with a concluding comment.

## I. The Analysis

The context for the present analysis, to a large extent, is found in the Employment Act of 1946, one of the more important pieces of economic legislation enacted in the United States in the twentieth century. This Act is the economic stabilization policy law of the land. The Federal Government formally assumed responsibility for the governance of the aggregate economy in this legislation. Institutional machinery for monitoring the performance of the economy and for recommending stabilization policies appropriate to the condition of the economy was created in this legislation. The President's Council of Economic Advisors and the Joint Economic Committee of Congress remain prominent functioning instruments launched by this Act. And the Law established the targets of national stabilization policy as the promotion of "maximum employment, production, and purchasing power."<sup>5</sup>

The analysis, herein, then, focuses on three sets of comparisons between Keynesian and Classical presidential administrations on the economic performance dimensions codified in the Employment Act. The comparisons were made using linear multiple regression analysis in order to approximate, if only crudely, the *ceteris paribus* assumption. The analysis used the variables listed and defined in Table 1, and the data set appearing in Appendix A.<sup>6</sup>

The variables noted in Table 1 are grouped as dependent, comparison, and control variables. The dependent variables consist of measures of central tendency and variation for the three performance dimensions specified, or implied, in the Employment Act. GNP, the proxy for production, is the average annual rate of growth in real Gross National Product for

each presidential administration; UNR, the surrogate for employment, is the average annual rate of unemployment for each presidency; and INR, the indicator of purchasing power, is the average annual rate of inflation in the Consumer Price Index for each administration. Then, implied in the Employment Act are three measures of variation. The standard deviation for the rate of growth in production for each presidential administration is SGN; the standard deviation for the rate of unemployment for each presidency is SUN; and the standard deviation for the rate of inflation for each administration is SIN.<sup>7</sup> These left-side variables, in both the Keynesian framework as well as the Employment Act, are of course important measures of the performance of the aggregate economy over time.

The comparison variables are the central right-side variables in this analysis. These temporal dummy variables, serve to sort the presidencies into Keynesian and Classical administrations. The coefficients on these variables -- their signs, statistical significance, and magnitudes -- contain the essential information in this analysis, the differences in the performance of a Keynesian political economy and the Classical economy, the differences in the performance of an economy having a discretionary national stabilization policy as an instrument of governance and an economy without this increment of governance.

The first comparison variable uses the date of publication of *The General Theory of Employment, Interest and Money*, 1936, to distinguish between the Keynesian and Classical presidential administrations. *The General Theory* was, to a large degree, the intellectual foundation for Keynesian macroeconomic policy, the use of discrete public sector aggregate demand management to regulate the economy. This initial set of comparisons then permit us

to examine the performance of the political economy in the post-*General Theory* time period relative to the pre-*General Theory* period. Thus, using 1936 as the line of demarcation for this first set of comparisons, administrations 1 through 9 (McKinley-Theodore Roosevelt through Franklin Roosevelt's first term) are considered Classical presidencies with administrations 10 through 25 (Franklin Roosevelt's second term through Clinton's second term) regarded as Keynesian presidencies. The variable, GEN, embodies this distinction with the earlier administrations assigned the value of 0 and the later administrations taking on the value of 1.

The second comparison variable uses the date of passage of the Employment Act of 1946 to distinguish between the Keynesian and Classical time periods. The Employment Act, itself, established much of the legal foundation for national stabilization policy in the United States, and, thus, marked, in an official sense, the beginning of the American "experiment" in Keynesian macroeconomic policy. This second set of comparisons then allow us to examine the performance of the economy in the post-Employment Act period relative to the pre-Employment Act era. Here, administrations 1 through 11 (McKinley-Theodore Roosevelt through Franklin Roosevelt's third term) are regarded as Classical while administrations 12 through 25 (Roosevelt-Truman through Clinton) are considered Keynesian.<sup>8</sup> The variable, ACT, signifies this distinction with the earlier administrations having the value of 0 and the subsequent administrations taking the value of 1.

The third comparison variable uses the first seven administrations in the century and the last seven administrations in the century as the basis for the distinction between the

Classical and Keynesian presidencies. The middle eleven administrations are omitted from the analysis in this construct. This yields a comparison between an early pre-Keynesian time period with an established Keynesian period, a comparison between a period before Keynes had even contemplated writing the *General Theory* with a period after the Keynesian Revolution had run its course, a comparison between a period before the 1930s Great Depression with a period after which Milton Friedman and President Nixon proclaimed themselves Keynesian.<sup>9</sup> Thus, administrations 1 through 7 (McKinley-Theodore Roosevelt through Coolidge) are the Classical presidencies while administrations 19 through 25 (Nixon-Ford through the second Clinton term) are the Keynesian regimes. The variable, SEV, captures this distinction, with the first seven administrations taking on the value of 0 and the last seven presidencies assigned the value of 1.

Finally, two control variables were incorporated into the analyses because of their expected effects on the dependent variables. The variable, DEP, is a Great Depression administration dummy variable, with the value 1 assigned to administrations 8, 9, and 10 (Hoover through Franklin Roosevelt's second term), and 0 assigned to other administrations. The variable, WAR, is a World War administration dummy variable, with the number 1 given to administrations 5 and 11 (Wilson's World War I presidency and Roosevelt's World War II reign), and 0 given to the other presidencies.<sup>10</sup>

These variables, then, were used to estimate two sets of equations. The first set considered relationships between the mean time series (GNP, UNR and INR) as dependent variables, and the comparison variables (GEN, ACT, and SEV) together with the control



terms (DEP and WAR) as independent variables. These mean equations could be expected to yield information on the *average levels* of performance of the economy with respect to production, unemployment, and inflation under the Keynesian administrations relative to the Classical presidencies. The second set of equations considered relationships between the standard deviation time series (SGN, SUN and SIN) as dependent variables, and the comparison variables (GEN, ACT, and SEV) together with the control terms (DEP and WAR) as independent variables. These standard deviation equations could be expected to yield insights into the *variation* in the performance of the economy with respect to production, unemployment, and inflation under the Keynesian presidencies relative to the Classical regimes.

The expected comparison results are those corresponding to the targets either specified or implied in the Employment Act. In the case of the mean equations, it is expected that the Keynesian time periods would have significantly *higher* average rates of growth in production (GNP), *lower* average rates of unemployment (UNR), and *lower* average rates of inflation (INR), respectively, than their corresponding Classical periods, *ceteris paribus*. In the case of the standard deviation equations, it is expected that the Keynesian time periods would show significantly *lower* standard deviations with respect to production (SGN), unemployment (SUN), and inflation (SIN), respectively, than their counterpart Classical times, other things equal. The lower standard deviations, of course, would indicate a more stable, less volatile, business cycle.

## II. The Results

Descriptive statistics for the variables examined in this analysis are presented in Table 2. Given here are means and standard deviations together with minimum and maximum values for each variable.

These data for the dependent variables are suggestive of the performance of the economy over the twenty-five presidencies on the dimensions of both central tendency and variation. On the central tendency dimension, the rate of growth in output (GNP) for the twenty-five administrations averaged 3.30 percent, ranging from the decline of -6.77 percent during the Great Depression term of Hoover to the growth of 12.30 percent in the World War II presidency of Roosevelt; the rate of unemployment (UNR) averaged 6.59 percent, varying from the low of 3.12 percent during the Coolidge presidency to a high of 20.90 percent in the first Great Depression term of Roosevelt; and the inflation rate (INR) averaged 3.16 percent, fluctuating from the -5.51 percent rate of deflation in the Hoover administration to the 16.39 percent inflation in the World War I presidency of Wilson. On the variation dimension, it is apparent that the standard deviation for the growth in output (SGN) for the twenty-five administrations averaged 4.48 percent, ranging from a low of 0.09 percent in the second Clinton presidency to a high of 11.29 percent during the Harding-Coolidge presidency; the standard deviation for the rate of unemployment (SUN) averaged 1.80 percent, varying from 0.39 percent in the second Clinton administration to 8.86 percent in the Hoover administration; and the standard deviation for the inflation rate (SIN) averaged 2.38 percent, fluctuating between the 0.18 percent in the Kennedy-Johnson administration and the 5.80

percent in the Harding- Coolidge term. The equivalent measures of central tendency and variation for the comparison and control variables are given, as well, in Table 2.

The results for the three sets of comparisons, by economic activity, are presented in summary form in Table 3. Provided here are the estimated regression coefficients for the comparison variables and their levels of statistical significance indicated by daggers and double daggers. Given here, also, are interpretations of the signs on the comparison coefficients, where the entry, E, signifies an expected sign on the coefficient, that is, a sign consistent with the pertinent target of the Employment Act and Keynesian stabilization policy, while U denotes an unexpected coefficient sign, one that is counter to the related target of the Employment Act and Keynesian policy. These abbreviated results, sufficient for the analysis of this note, are abridged from the full regression results appearing in Appendices B-1, B-2, and B-3.

Consider, first, the results in Table 3 for production. A pattern of mixed findings are apparent in the set of GNP (mean) comparisons. The GEN comparison yielded an expected result, consistent with the Keynesian target, and was statistically significant; the rate of growth in production was approximately 1.50 percentage points higher in the post-*General Theory* period than in the pre-*General Theory* era, *ceteris paribus*. The ACT comparison also yielded a result consistent with the Keynesian expectation, but was not statistically significant; the rate of growth in production in the post-Employment Act period was not significantly greater than that in the pre-Employment Act period. However, the SEV comparison produced an unexpected result counter to the Keynesian target, which was also statistically

insignificant; the rate of growth in production in the last-seven-administration period was not significantly different from that during the first-seven-presidency period. Thus, evidence of a higher average rate of growth in real production in the Keynesian period relative to the Classical era was found in just one of the mean comparisons; the other two comparisons produced findings of no difference between the two periods in their average rates of growth in aggregate output.

In contrast to the mean comparisons, the set of SGN (standard deviation) comparisons reveal a uniform pattern of results. The GEN comparison, once again, yielded a statistically significant expected result, consistent with its Keynesian target; the variation in the rate of growth in production was some 3.88 percentage points lower in the post-*General Theory* period than in the pre-*General Theory* period, other things equal. The ACT comparison, as well, produced a result consistent with the Keynesian expectation and was, also, statistically significant; the variation in the rate of growth in production in the post-Employment Act period was in the neighborhood of 4.25 percentage points lower than that prevailing in the pre-Employment Act period. And the SEV comparison, too, yielded a statistically significant Keynesian result; the variation in the rate of growth in production was around 5.03 percentage points lower in the last-seven-administration period than it was in the first-seven-presidency era. All three standard deviation comparisons, therefore, pointed to the result of less variation in the rate of growth in production in the Keynesian period relative to the Classical period.

Examine, next, the results on unemployment in Table 3. The UNR (mean) comparisons show somewhat mixed findings. The GEN comparison yielded an unexpected

result, inconsistent with the Keynesian target, that was not statistically significant; the rate of unemployment in the post-*General Theory* period was not significantly different from that in the pre-*General Theory* period. The ACT comparison also yielded an insignificant unexpected result, inconsistent with Keynesian expectation; the rate of unemployment in the post- Employment Act era was not significantly different from that in the pre-Employment Act period. And, yet, the SEV comparison produced a statistically significant unexpected result, inconsistent with the Keynesian target; the estimated unemployment rate in the last-seven-administration period was some 1.42 percentage points higher than that in the first-seven-presidency period, *ceteris paribus*. This set of mean comparisons, therefore, in two instances suggest no difference in the average unemployment rate in the Keynesian period relative to the Classical period, and, yet, in one instance a higher rate of unemployment in the Keynesian era is indicated.

Then, in the SUN (standard deviation) comparisons, we again find a set of rather uniform results. The GEN comparison produced a statistically significant expected result, consistent with its Keynesian target; the variation in the rate of unemployment in the post-*General Theory* period was approximately 1.20 percentage points lower than that in the pre-*General Theory* period, other thing equal. The ACT comparison also yielded a significant expected result, consistent with the Keynesian expectation; the variability in the unemployment rate in the post-Employment Act period was some 1.17 percentage points lower than that in the pre-Employment Act period. And the SEV comparison, also, yielded a statistically significant Keynesian result; the variation in the rate of unemployment was 0.98

percentage points lower in the last-seven-presidency period than in the first-seven-administration era. Once again, all three standard deviation comparisons point to lower variability in the rate of unemployment during the Keynesian administrations relative to the Classical presidencies.

Finally, consider the results for inflation in Table 3. Here, the INR (mean) comparisons present a rather uniform set of findings. The GEN comparison produced a statistically significant unexpected result, inconsistent with the Keynesian target; the rate of inflation in the post-*General Theory* period was estimated to have been 2.27 percentage points higher than that in the pre-*General Theory* period, *ceteris paribus*. The ACT comparison also yielded a significant unexpected result; the rate of inflation was some 3.70 percentage points higher in the post-Employment Act period than in the pre-Employment Act era. And the SEV comparison produced a similar significant unexpected result; the inflation rate in the last-seven-administration period was in the neighborhood of 4.72 percentage points higher than that in the first-seven-presidency era. All three of the mean comparisons, then, suggest higher average rates of inflation in the Keynesian period relative to the Classical era.

Then, turning to the SIN (standard deviation) comparisons, we find, once again, a rather uniform set of results. The GEN comparison yielded a statistically significant expected result, consistent with a Keynesian expectation; the variation in the rate of inflation during the post-*General Theory* period was estimated to have been some 1.28 percentage points lower than that in the pre-*General Theory* period, other things equal. Then, the ACT comparison, also, produced a significant expected Keynesian result; the variation in the inflation rate was

approximately 1.56 percentage points lower in the post-Employment Act administrations than in the pre-Employment Act presidencies. And the SEV comparison, as well, yielded a significant expected result; the variation in inflation was some 1.35 percentage points lower in the last seven administrations relative to that in the first seven administrations. Thus, all three standard deviation comparisons point to lesser variation in inflation during the Keynesian period relative to the Classical era.

Such are the results of this analysis.<sup>11</sup> Let us now turn from the mechanical realm of results to the more conclusive domain of interpretation.

### III. Concluding Comment

What can be concluded from this cursory glimpse at the behavior of the United States economy over the twentieth century? What can be said of the performance of the economy in the Keynesian world relative to its behavior in the Classical realm? What hath the Keynesian Revolution wrought on the American economy in the century just concluded?

The results of this exercise insist on two conclusions. First, the standard deviation comparisons, without exception, suggest greater stability in the Keynesian period relative to the Classical era. On each of the examined dimensions of economic activity -- production, unemployment, and inflation -- lesser variation was found in the Keynesian world. If macroeconomic life is a ride on a roller coaster through time, to invoke a tired metaphor, then the evidence found here means that the ride in the Keynesian world was less sinuous than that in the previous Classical world. And, second, the mean comparisons for inflation uniformly suggest greater levels of price inflation in the Keynesian period in relation to the

Classical world. This finding seems to underscore the conclusion reported elsewhere that inflation is, indeed, something of an artifact of the Keynesian Revolution.

Beyond these two insistent impressions there was a paucity of compelling evidence on differences in either the mean rate of growth in production or the mean rate of unemployment. The average rate of growth in output was found to be higher in the post-*General Theory* period, and the average unemployment rate was observed to be higher in the last-seven- administration period. However, the remaining comparisons in these areas, which is the bulk of the evidence, suggest no other differences between the Keynesian and Classical worlds on average rates of growth in production and average unemployment rates. And this dearth of evidence would seem to imply that the Keynesian Revolution had a limited impact on the economic performance variables specified in the Keynesian law of the land, the Employment Act of 1946.<sup>12</sup>

A final word on continuity. If these mixed results are credible, one cannot help but see, in the stability conclusion, a verdict immensely pleasing to the Keynesian ghosts and their descendants; and, yet, at the same time, the inflation and limitation conclusions are likely to be seen among the Classical apparitions and their offspring as evidence that the macroeconomic world is only partly Keynesian. And the debate goes on.



Notes

\*John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace & World, 1964 [1936]), p. 378.

<sup>1</sup>Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Cannon Edition; New York: The Modern Library, 1937 [1776]). Smith's case against mercantilism and for deregulation is expressed in a number of places in this volume including Book IV, Chapters III, VIII, and IX. The regulated form of economic organization criticized by Smith included that portrayed in Thomas Mun, *England's Treasure by Forraign Trade* (Reprints of Economics Classics Series; Fairfield, New Jersey: Augustus M. Kelley, 1968 [1664]).

<sup>2</sup>The Malthus-Ricardo debate on the possibility of general gluts is recounted in John Maynard Keynes, "Thomas Robert Malthus," in *Essays in Biography* (Collected Writings, Volume X; London: Macmillan, 1972 [1933]), pp. 96-103, and in John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace & World, 1964 [1936]), pp. 32-34, 362-364. Malthus statement of his theory of gluts is in his *Principles of Political Economy*, (John Pullen Variorum Edition; Cambridge: Cambridge University Press, 1989 [1820]), Vol. 1, Chapter VII, Section III, pp. 351-375. Commentary of Ricardo on the matter appears in his *The Principles of Political Economy and Taxation* (3rd Edition; London: J. M. Dent & Sons, 1911 [1821], Chapter XXI, pp. 192-200.

<sup>3</sup>Say's Law of Markets is from Jean Baptiste Say, *A Treatise on Political Economy* (Reprints of Economics Classics Series; Fairfield, New Jersey: Augustus M. Kelley, 1964 [1803]), Book I, Chapter 15, pp. 132-140.

<sup>4</sup>Keynes, *The General Theory of Employment, Interest, and Money*, Chapter 1, p. 3, Chapter 2, pp. 4-22, Chapter 14, pp. 175-193, Chapter 19, pp. 257-279.

<sup>5</sup>*United States Statutes at Large*, Vol. 60, 79th Congress, 2nd Session, p. 23. The "Declaration of Policy," appearing in Section 2 of the Law, reads:

The Congress hereby declares that it is the continuing policy and responsibility of the Federal Government to use all practicable means consistent with its needs and obligations and other essential considerations of national policy, with the assistance and cooperation of industry, agriculture, labor, and State and local governments, to

coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining, in a manner calculated to foster and promote free competitive enterprise and the general welfare, conditions under which there will be afforded useful employment opportunities, including self-employment, for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power.

This fine piece of prose has all the earmarks of having been written by, or for, a committee. The creation of the Employment Act is recounted in Stephen K. Bailey, *Congress Makes a Law: The Story Behind the Employment Act of 1946*. New York: Columbia University Press, 1950. And an interesting set of symposium articles by Herbert Stein, Charles L. Schultze, and J. Bradford De Long on the Council of Economic Advisors is in *The Journal of Economic Perspectives*, 10 (Summer 1996), pp. 3-53.

<sup>6</sup>The time series examined in this exercise are subject to various discontinuities and are therefore only approximately comparable over the century. These discontinuities stem for the most part from definitional changes which can be expected to affect the examined variables. For example, the United States itself was redefined during the century in that Arizona and New Mexico were admitted to the Union in 1912 with Alaska and Hawaii becoming States in 1959. Then the term of office of the Presidency was redefined by the 20th Amendment to the United States *Constitution*, ratified in 1933, which changed the beginning and ending date for presidential administrations from March 4th to January 20th, so the first nine administrations in the century were inaugurated on the former date while the last sixteen presidencies commenced on the latter date. And a related institutional change was the creation of the Federal Reserve System in 1913. Beyond these and other such examples, the variables themselves have undergone redefinition and have been subject to changing estimation procedures. Gross national product (GNP) definition and estimation methods are considered in U. S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970* (Washington, D. C.: U. S. Government Printing Office, 1975) (hereinafter referred to as *Historical Statistics*), Part 1, pp. 215-216; Nathan S. Balke and Robert J. Gordon, "The Estimation of Prewar Gross National Product: Methodology and New Evidence," *Journal of Political Economy*, 97 (February 1989), 38-92; and U. S. Department of Commerce and the Bureau of Economic Analysis, *National Income and Product Accounts of the United States, 1929-94* (Washington, D. C.: U. S. Government Printing Office, April 1998), Vol. 1, pp. M-1 to M51. Unemployment rate definition and estimation methods are considered in *Historical Statistics*, Part 1, pp. 121-124; and U. S. Department of Labor and the Bureau of Labor Statistics, *BLS Handbook of Methods* (Washington, D. C.: U. S. Government Printing Office, April 1997) (hereinafter referred to as *BLS Handbook of Methods*), pp. 4-14. And the Consumer Price Index (CPI) definition

and estimation methods are considered in *Historical Statistics*, Part 1, pp. 183-192; and *BLS Handbook of Methods*, pp. 167-204.

<sup>7</sup>The production, or GNP, data used in these analyses are geometric means calculated from annual percentage changes in real Gross National Product for each presidential administration. This GNP time series was generated from data taken from the following sources: The source for the period, 1899-1959, is *Historical Statistics*, Part 1, Series F 3, p. 224; and the source for the period, 1960-2000, is Council of Economic Advisors, *Economic Report of the President* (Washington, D. C.: U. S. Government Printing Office, 2002) (hereinafter referred to as *Economic Report*, 2002), Table B-2, p. 323. Then, the unemployment rate, or UNR, data used in these analyses are arithmetic means calculated from average annual rates of civilian unemployment for each presidency. This UNR time series was generated from data taken from the following sources: The source for the period, 1899-1949, is *Historical Statistics*, Part 1, Series D 86, p. 135; the source for the period, 1950-1959, is Council of Economic Advisors, *Economic Report of the President* (Washington, D. C.: U. S. Government Printing Office, 2000) (hereinafter referred to as *Economic Report*, 2000), Table B-42, p. 324; and the source for the period, 1960-2000, is *Economic Report*, 2002, Table B-42, p. 370. Next, the inflation rate, or INR, data used in these analyses are geometric means calculated from annual percent changes in the CPI for each administration. This INR time series was generated from data taken from the following sources: The source for the period, 1899-1959, is *Historical Statistics*, Part 1, Series E 135, pp. 210-211; and the source for the period, 1960-2000, is *Economic Report*, 2002, Table B-60, p. 389. And, finally, the standard deviation time series were calculated from annual average measures for a given administration. Thus, SGN was calculated using the annual average rate of change in real GNP, SUN was calculated using the annual average rate of unemployment, and SIN was calculated using the annual average rate of change in the CPI.

<sup>8</sup>The administration in which the Employment Act was passed, the Roosevelt-Truman administration, was classified as a Keynesian administration since the legislation itself was Keynesian rather than Classical in nature.

<sup>9</sup>In correspondence with *Time* magazine in 1965 and 1966, Milton Friedman declared himself and others at least fractionally Keynesian, and in January 1971, President Nixon proclaimed himself Keynesian. See *Time* (December 31, 1965), p. 65; *Time* (February 4, 1966), p. 13; and Herbert Stein, *Presidential Economics* (New York: Simon and Schuster, 1984), p. xxxx.

<sup>10</sup>One additional dummy variable, controlling for administrations before and after the establishment of the Federal Reserve System in 1913, was found to have no significant

relationship with the examined economic performance variables and was, therefore, excluded from the analysis.

<sup>11</sup>Ten of the eighteen comparisons produced results consistent with Keynesian targets; four of the eighteen comparisons yielded results counter to Keynesian targets; the remaining four comparisons produced insignificant results. Thus, in fourteen of the comparisons the association between the independent and dependent variables were sufficiently potent to produce significant results even in this highly averaged data set. In four of the comparisons these associations were perhaps not potent enough to yield significant results in such a highly averaged data set.

<sup>12</sup>Evidence of the existence of the Phillips curve in this data set is, for the most part, rather weak. The correlation coefficient between INR and UNR is  $-.34$ ; simple regression analysis yields the following equation,  $INR = 5.518 - 0.357UNR$ , with the coefficient on UNR significant at the 10 percent level and an adjusted coefficient of determination of  $.078$ ; then an augmented Phillips curve equation, including DEP and WAR as control variables, produced a perverse and insignificant Phillips relationship.

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Table 1

Variables Used in the Analysis

Variable	Variable Description
Dependent Variables:	
GNP	Geometric Mean Annual Rate of Change in Real GNP by Administration
UNR	Arithmetic Mean Annual Rate of Unemployment by Administration
INR	Geometric Mean Annual Rate of Change in the CPI by Administration
SGN	Standard Deviation for the Rate of Change in Real GNP by Administration
SUN	Standard Deviation for the Rate of Unemployment by Administration
SIN	Standard Deviation for the Rate of Change in the CPI by Administration
Comparison Variables:	
GEN	Dummy variable: Administrations 1 through 9 = 0; Administrations 10 through 25 = 1.
ACT	Dummy variable: Administrations 1 through 11 = 0; Administrations 12 through 25 = 1.
SEV	Dummy variable: Administrations 1 through 7 = 0; Administrations 19 through 25 = 1.
Control Variables:	
DEP	Dummy Variable: Great Depression Administration = 1; Otherwise = 0.
WAR	Dummy Variable: World War I or II Administration = 1; Otherwise = 0.



Table 2  
Descriptive Statistics  
(n = 25)

Variable	Arithmetic Mean	Standard Deviation	Minimum	Maximum
Dependent Variables:				
GNP	3.302	3.386	-6.773	12.296
UNR	6.592	4.184	3.125	20.900
INR	3,162	4.385	-5.507	16.386
SGN	4.484	2.900	0.090	11.290
SUN	1.797	1.794	0.392	8.855
SIN	2.377	1.548	0.178	5.798
Comparison Variables:				
GEN	.640	.490	0	1
ACT	.560	.507	0	1
SEV*	.500	.519	0	1
Control Variables:				
DEP	.120	.332	0	1
WAR	.080	.277	0	1

\*For the comparison variable, SEV, n = 14.

Table 3  
Comparison Results

Economic Activity (Dependent Variable)	Comparison (Independent Variable)		
	GEN	ACT	SEV
Production:			
GNP (Mean)	1.496† E	0.179 E	-0.600 U
SGN (Standard Deviation)	-3.884‡‡ E	-4.249‡‡ E	-5.028‡‡ E
Unemployment:			
UNR (Mean)	0.437 U	0.502 U	1.417†† U
SUN (Standard Deviation)	-1.197‡‡ E	-1.168‡ E	-0.980†† E
Inflation:			
INR (Mean)	2.271† U	3.702‡ U	4.725‡‡ U
SIN (Standard Deviation)	-1.284† E	-1.557† E	-1.350†† E

Entries in this table are the estimated comparison coefficients, the slope coefficients for the comparison variables in each of the regressions, *ceteris paribus*. The full regression results appear in Appendices B-1, B-2, and B-3. †Significant at the 10 percent level, one-tail test; ††Significant at the 10 percent level, two-tail test; ‡Significant at the 5 percent level, two-tail test; ‡‡Significant at the 1 percent level, two-tail test. E = expected result, consistent with a Keynesian target; U = unexpected result, counter to a Keynesian target.

Appendix A

Data Set Used in this Analysis

Presidential Administration	Dependent Variables						Comparison Variables			Control Variables	
	GNP	UNR	INR	SGN	SUN	SIN	GEN	ACT	SEV	DEP	WAR
1. McKinley-Roosevelt (1901-04)	3.92	4.25	1.94	5.56	0.78	2.27	0	0	0	0	0
2. Roosevelt (1905-08)	2.81	4.20	0.00	8.60	2.75	2.97	0	0	0	0	0
3. Taft (1909-12)	6.77	5.58	1.80	6.59	0.92	2.10	0	0	0	0	0
4. Wilson (1913-16)	0.78	6.45	3.05	5.16	2.06	3.05	0	0	0	0	0
5. Wilson (1917-20)	1.04	3.15	16.39	7.67	2.04	1.27	0	0	0	0	1
6. Harding-Coolidge (1921-24)	4.27	6.45	-3.89	11.29	3.92	5.80	0	0	0	0	0
7. Coolidge (1925-28)	3.63	3.12	0.05	4.13	0.99	2.06	0	0	0	0	0
8. Hoover (1929-32)	-6.77	12.85	-5.51	9.22	8.86	4.93	0	0	-	1	0
9. Roosevelt (1933-36)	7.56	20.90	0.36	6.74	3.33	3.83	0	0	-	1	0
10. Roosevelt (1937-40)	4.16	16.28	0.30	6.44	2.24	2.52	1	0	-	1	0
11. Roosevelt (1941-44)	12.30	4.42	5.84	3.72	3.95	3.69	1	0	-	0	1
12. Roosevelt-Truman (1945-48)	-2.71	3.38	8.15	6.88	0.98	4.94	1	1	-	0	0
13. Truman (1949-52)	5.11	4.38	2.47	4.37	1.44	3.82	1	1	-	0	0
14. Eisenhower (1953-56)	3.08	4.22	0.59	3.84	1.07	0.77	1	1	-	0	0
15. Eisenhower (1957-60)	2.27	5.52	2.20	3.13	1.02	1.20	1	1	-	0	0
16. Kennedy-Johnson (1961-64)	4.65	5.78	1.16	1.70	0.65	0.18	1	1	-	0	0
17. Johnson (1965-68)	5.02	3.92	2.93	1.85	0.40	1.06	1	1	-	0	0
18. Nixon (1969-72)	2.99	4.98	4.69	2.17	1.07	1.15	1	1	-	0	0
19. Nixon-Ford (1973-76)	2.61	6.68	8.02	3.67	1.70	2.49	1	1	1	0	0
20. Carter (1977-80)	3.34	6.52	9.70	2.53	0.68	3.26	1	1	1	0	0
21. Reagan (1981-84)	2.86	8.60	5.97	3.83	1.21	3.12	1	1	1	0	0
22. Reagan (1985-88)	3.57	6.48	3.30	0.48	0.78	1.00	1	1	1	0	0
23. Bush (1989-92)	1.96	6.30	4.36	1.81	1.03	1.02	1	1	1	0	0
24. Clinton (1993-96)	3.19	6.00	2.84	0.62	0.67	0.20	1	1	1	0	0
25. Clinton (1997-00)	4.16	4.40	2.35	0.09	0.39	0.75	1	1	1	0	0

Appendix B-1

The General Theory Comparison Results  
(Comparison Variable: GEN)

Independent Variables	Mean Comparison Equations Dependent Variable			St. Dev. Comparison Equations Dependent Variable		
	1.1 GNP	1.2 UNR	1.3 INR	1.4 SGN	1.5 SUN	1.6 SIN
Constant Term	2.008† (2.138)	5.054## (7.467)	1.494 (1.178)	6.634## (8.781)	2.135## (6.649)	3.196## (3.874)
Comparison Variable:						
GEN	1.496† (1.431)	0.437 (0.563)	2.271† (1.560)	-3.884## (-4.477)	-1.197## (-3.349)	-1.284† (-1.394)
Control Variables:						
DEP	0.261 (0.163)	11.475## (9.974)	-3.865## (-1.793)	2.127† (1.656)	2.944## (5.369)	0.835 (0.724)
WAR	3.054† (1.330)	-1.485 (-1.105)	8.482## (3.368)	1.007 (0.671)	1.479## (1.811)	-0.801 (-0.750)
-----						
Adj. R <sup>2</sup>	.128	.815	.408	.520	.603	.107
SE	3.228	1.800	3.373	2.010	1.147	1.494
F	1.840	36.210	6.523	9.660	9.724	1.690
D-W	2.215*	2.103	1.995	1.970	2.088*	2.048*
n	25	25	25	25	25	25

Values in parentheses are t-statistics.

\*Results corrected for first-order serial correlation.

†Significant at the 10 percent level, one-tail test.

##Significant at the 10 percent level, two-tail test.

#Significant at the 5 percent level, two-tail test.

##Significant at the 1 percent level, two-tail test.

Appendix B-2

Employment Act Comparison Results  
(Comparison Variable: ACT)

Independent Variables	Mean Comparison Equations Dependent Variable			St. Dev. Comparison Equations Dependent Variable		
	2.1 GNP	2.2 UNR	2.3 INR	2.4 SGN	2.5 SUN	2.6 SIN
Constant Term	2.978† (2.535)	5.008## (6.816)	0.492 (0.382)	6.889## (8.153)	2.130## (5.083)	3.359## (4.087)
Comparison Variable:						
ACT	0.179 (0.132)	0.502 (0.572)	3.702† (2.405)	-4.249## (-4.207)	-1.168† (-2.417)	-1.557† (-1.609)
Control Variables:						
DEP	-0.369 (-0.184)	11.667## (9.166)	-2.106 (-0.944)	0.577 (0.394)	2.557## (3.553)	0.353 (0.288)
WAR	2.874 (1.048)	-1.221 (-0.831)	10.620## (4.122)	-1.190 (-0.704)	0.743 (0.728)	-1.348 (-1.123)
-----						
Adj. R <sup>2</sup>	.041	.815	.482	.491	.532	.129
SE	3.385	1.800	3.155	2.070	1.245	1.476
F	1.243	36.231	8.455	8.708	7.535	1.851
D-W	2.140*	2.099	1.876	2.017	2.109*	1.992*
n	25	25	25	25	25	25

Values in parentheses are t-statistics.

\*Results corrected for first-order serial correlation.

†Significant at the 10 percent level, one-tail test.

††Significant at the 10 percent level, two-tail test.

#Significant at the 5 percent level, two-tail test.

##Significant at the 1 percent level, two-tail test.

Appendix B-3

First and Last Seven Administrations Comparison Results  
(Comparison Variable: SEV)

Independent Variables	Mean Comparison Equations Dependent Variable			St. Dev. Comparison Equations Dependent Variable		
	3.1 GNP	3.2 UNR	3.3 INR	3.4 SGN	3.5 SUN	3.6 SIN
Constant Term	3.697## (6.382)	5.008## (9.497)	0.492 (0.457)	6.889## (8.002)	1.904## (5.153)	3.041## (5.628)
Comparison Variable:						
SEV	-0.600 (-0.760)	1.417## (1.971)	4.725## (3.215)	-5.028## (-4.286)	-0.980## (-1.948)	-1.350## (-1.833)
Control Variable:						
WAR	-2.652† (-1.730)	-1.858 (-1.332)	15.894## (5.571)	0.785 (0.344)	0.132 (0.136)	-1.767 (-1.236)
-----						
Adj. R <sup>2</sup>	.077	.305	.711	.593	.150	.130
SE	1.419	1.292	2.642	2.109	0.656	1.323
F	1.540	3.854	17.026	10.456	2.144	1.967
D-W	3.328*	1.725	1.085*	2.347	2.751*	1.670
n	14	14	14	14	14	14

Values in parentheses are *t*-statistics.

\*Durbin-Watson statistic is in the region of indecision, 1 percent level of significance.

†Significant at the 10 percent level, one-tail test.

##Significant at the 10 percent level, two-tail test.

#Significant at the 5 percent level, two-tail test.

##Significant at the 1 percent level, two-tail test.

Appendix C

Zero-Order Correlation Coefficients

	GNP	UNR	INR	SGN	SUN	SIN	GEN	ACT	SEV*	DEP	WAR
GNP	1.00	-	-	-	-	-	-	-	-	-	-
UNR	-0.00	1.00	-	-	-	-	-	-	-	-	-
INR	0.04	-0.34	1.00	-	-	-	-	-	-	-	-
SGN	-0.26	0.27	-0.25	1.00	-	-	-	-	-	-	-
SUN	-0.32	0.46	-0.42	0.64	1.00	-	-	-	-	-	-
SIN	-0.17	0.30	-0.21	0.74	0.63	1.00	-	-	-	-	-
GEN	0.14	-0.15	0.28	-0.72	-0.45	-0.38	1.00	-	-	-	-
ACT	-0.10	-0.30	0.27	-0.73	-0.55	-0.44	0.85	1.00	-	-	-
SEV*	-0.08	0.56	0.26	-0.81	-0.53	-0.40	1.00	1.00	1.00	-	-
DEP	-0.18	0.91	-0.41	0.39	0.63	0.34	-0.24	-0.42	-	1.00	-
WAR	0.30	-0.20	0.55	0.13	0.20	0.02	-0.09	-0.33	-0.28	-0.11	1.00

\*Correlation coefficients for the variable, SEV, are based on a sample size of n =14; the coefficients for all other variables are based on a sample size of n =25.