

The economic sustainability index, marginal tax rates and aggregate wage levels

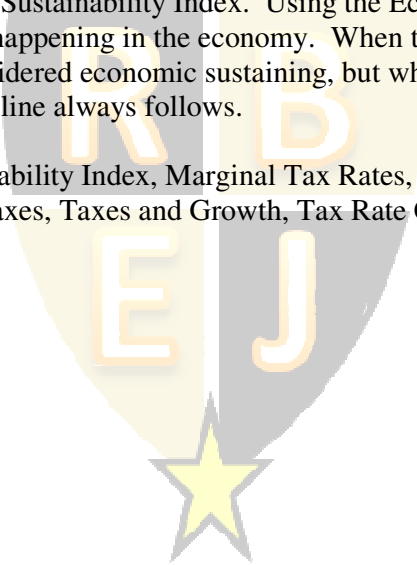
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ABSTRACT

This paper is a historical examination of the tax change impacts for presidential terms since 1913, the tax change effects on economic sustainability and growth, and the repercussions of these changes on capital and labor. The authors define the Economic Sustainability Index as the ratio of aggregate wages to aggregate capital. The Economic Sustainability Index is used in the historical examination of presidential tax changes. The tax level is an important factor regarding the distribution of the reward to capital and labor. The relationship between the changes in the amount received and the change in the tax rate is compared with the Economic Sustainability Index. Using the Economic Sustainability Index, it is possible to track what is happening in the economy. When the Economic Sustainability Index is above three it is considered economic sustaining, but when it falls below three on a continual basis, economic decline always follows.

Keywords: Economic Sustainability Index, Marginal Tax Rates, Aggregate Wages, Aggregate Capital, Income Taxes, Taxes and Growth, Tax Rate Changes U.S. Presidents.



INTRODUCTION

The greatest change a President can make during their economic era is to change the highest marginal tax levels. Because this has been done with such frequency, it becomes critical to examine the historical results that each change has imposed upon the economy. The most meaningful way to do this is to compare two elements of the economy. The first is to examine the annual changes in both the aggregate wages and the aggregate capital as they are where the surplus value created in the economy is distributed. The second method is to create a ratio of the aggregate wages to the aggregate capital. Once each of these has been established over time, they can be broken into Presidential eras that can then be compared to what changes were made to the tax code. From this examination it is then possible to see a time series result that can be used to link the marginal tax levels to economic results.

DEFINING THE ECONOMIC SUSTAINABILITY INDEX

The economy creates surplus value from all production in its multi-faceted enterprises. The surplus value that is created is distributed into three groups in the economy. First, comes taxes that are paid to the governments. Next, there are the wages paid to the workers who created the surplus value that was added to the economy. Lastly, there is the left over amounts that go to the various capitalists involved in the company, which involves interest capital, dividend capital, rent capital, and capital gains. In addition, there are profits paid out to equity owners that are not included in the previous elements of capital. The wages paid to workers can be measured by the Aggregate Wages to Labor. The capitalists receive interest capital, dividend capital, rent capital, and capital gains, as well as other forms of paid-in capital, and this can be measured and defined as Aggregate Capital. Then, the Economic Sustainability Index (ESI) is defined as the Ratio of Aggregate Wages to Aggregate Capital.

The amount that is paid to each group changes over time. The greatest element motivating the amount received by each group is the level of taxation. There is a strong correlation that exists between the change in the amount received by each group and the change in the level of taxation. The relationship between the changes in the amount received and the change in the tax rate is also correlated with the Economic Sustainability Index (ESI index). When the ESI index is above three it is considered economic sustaining. When the index is below three, the economy is in decline and not economic sustaining. Economic decline is usually followed when the economic sustainability index value falls below two. When the Index value increases it is usually associated with economic growth. In a historical context the greatest growth has happened when the Economic Sustainability Index has been above three, while the lowest growth has always happened when the ESI has first declined rapidly until it is either below three while approaching two.

The historical record can be examined to support the above concepts. Four charts, included in the appendix, are used to analyze each Presidential Era; Wages as a percentage of National Income, Aggregate Wages, Aggregate Capital, and the ESI ratio.

LITERATURE REVIEW

Economic growth and tax levels have been, and continue to be, extensively studied in Economic literature. Yet, the massive amount of research in this area has not reached a definitive conclusion. The vast majority of research indicates that growth rates and marginal tax rates are inversely related. Romer and Romer (2010) showed a relatively strong inverse relationship between tax rates and growth. Significant inverse correlations between tax rates and growth rates were also shown by Barro and Redlick (2011). Another study by Mertens

and Ravn (2013) came to the same conclusion, raising tax rates slows growth, lowering tax rates increases growth. Mitchell (1996) reviewed tax decreases that occurred in the 1920s, the 1960s, the 1980s, and the tax increase that occurred in the 1990s. Mitchell's study found a tax rate decrease resulted in economic prosperity while a tax rate increase resulted in economic decline. According to Decker and Hopkins (2017) the Kennedy tax cuts resulted in 5.2% average growth in GDP, the Reagan tax cuts resulted in 5% average growth in GDP, and the Bush tax cuts resulted in 3% average growth in GDP over a five-year period following the tax cuts.

However, other studies give conflicting results, for example, Gravelle and Marples (2014) found no significant relationship showing more growth with lower taxes, but instead found more growth with higher taxes. Stokey and Rebelo (1995) looked at the tax increase from World War II and determined higher taxes did not slow growth. Easterly and Rebelo (1993) also did not find any evidence to indicate that lower taxes increase growth or that higher taxes decreased growth. Another study by Huang (2012) looked at the tax increase in 1993 and tax decreases in 2001 and concluded that economic growth was larger after the tax increases than occurred after the 2001 tax decreases and Desai and Goolsbee (2004) found that lower marginal tax rates in 2003 barely impacted investment. According to Weller (2017) there is no evidence that show tax cuts led to more growth. Weller says that the 3.9 growth rate that followed tax cuts in 1981 were very similar to the growth that occurred after the 1993 tax increases and even in 2012, growth was 2.1 percent following the tax increase. Hungerford (2012) found no significant relationship, or observed any evidence, to suggest that raising or lowering the top tax rates had any influence on growth. Taylor and Taylor (2014) strongly dispute Hungerford's analysis indicating Hungerford's method is flawed. Taylor and Taylor include a dummy variable in the Hungerford study that accounts for the lagged results of the tax changes resulting in very strong evidence that tax rates and growth are negatively related.

PRESIDENTIAL ERAS AND THE ECONOMIC SUSTAINABILITY INDEX

Wilson Era 1913-1920

In 1913, the first income tax was begun at a highest marginal rate of 7% that became 77% in 1918 during the War. This was a time when the income tax was first used to pay for the World War. Thus, the data only becomes complete following 1916 when full implementation of the income tax happened. The 1916-1920 change was startling when examined using the ESI for the first time. Figures 1-4 (see appendix) are the charts, for discussion in this section.

When the income tax was first introduced the tax level was low. In 1920, the highest marginal tax rate was increased to a high of 73%. Once the rate was increased to 73% several items changed. The impact of war production allowed jobs, and thus wages to increase, but with virtually no drag upon the economy by the higher marginal rates. The following indicates this:

1. The aggregate level of wages increased rapidly, while at the same time, the aggregate capital level was lowered.
2. The ESI ratio reversed from a capital favored position in 1916 or 0.42 to a wage favored position by 1918 or 1.08 and eventually by 1920 of 1.82.
3. For the first time in American economic history, the surplus value added to the society showed a greater gain by wages than by capital.
4. The percentage of National Income gained by aggregate wages for the first time was over 50%, peaking at 64.6% in 1920 as marginal tax levels reached 68%.

President Warren Harding came into office in 1921. The first order of business for the Republican President was to begin a series of decreases in the highest marginal tax rates from 68% to a 24% level by 1924.

The Harding-Coolidge Era, 1921-1928

The data for two Presidents, Harding and Coolidge, are combined together and analyzed prior to the Great Depression. A series of tax cuts each year lowered the highest marginal rates down to 24%. The income tax rate started at 7% but was quickly raised to finance World War I. During the Harding-Coolidge Era the highest marginal tax rate was lowered to 24%, the lowest since the beginning of the income tax and the lowest going forward until today. Figures 5, 6, and 7 (see appendix) shows the results.

As one can see from Figure 7 (appendix), once the marginal tax rates were lowered, the result was a reversal of the ESI in favor of Capital, just as had happened from 1916-1920, but in the opposite direction. In addition, one notices that by 1925, the aggregate wages declined dramatically, while the aggregate capital increased. There was a movement in the economy that resulted in massive amounts of previous surplus value that was going to wages and was now flowing to capital. This was sustained over the next four years preceding the Great Depression. This was sustained over the next four years preceding the Great Depression.

The following conclusion can be made:

1. The lowering of marginal tax levels resulted in a similar lowering of the aggregate wage levels.
2. The lowering of marginal tax levels reversed the amount surplus value added that was moving in favor of wages and began to flow to capital.
3. Preceding the Great Depression, a four-year period of substantially lower wage levels influenced the economy as lost demand.
4. Using the 1921 level of ESI and moving that level forward using the pre-tax cut distribution of the value added, then the amount would have been \$20,846 over the 1921-1928 period, or 21.6%.
5. In 1921, immediately following the first tax cut, the level of Capital increased and the level of Wages decreased with a continuation through each year of tax cuts.

During this period, the economy lost 21.6% of its demand ability because of tax cuts. From 1929-1933, the Depression led to a 41.6% decline in National Income. Without the tax cuts, demand ability would have been sustained from 1929-1933. Thus, the economy lost almost twice the value of lost demand from wages prior to the defined date of the Great Depression, but it was mostly reflected in a loss of capital after the Depression. While aggregate wages did continue to decline in 1929-1933, that decline had already begun in 1924. The 1929-1933 wage decline was only marginal.

Franklin D. Roosevelt, 1933-1945

President Herbert Hoover and Congress passed the Revenue Act of 1932 in June of 1932. The 1932 tax law increased taxes from 24% to 68% several months before President Roosevelt was elected. Once Roosevelt was elected President, the tax rates continued to increase to 81% and they reached 91% in the 1940-1945 period. The individual income tax was overhauled and reshaped during World War II. President Roosevelt and Congress raised rates, eliminated exemptions, and expanded the tax base to include a much larger number of

taxpayers. President Roosevelt also instituted the payroll tax for Social Security. What happened to the ESI during this time?

As one can see in Figure 8 (see appendix), the ESI ratio continued to increase until it was above 4 for a period of over 40 years until 1981. Since marginal tax levels continued to be high, from over 85%-91% during this time, aggregate wages were gaining a huge majority of the surplus value added to the economy as shown in Figure 9 (appendix). What happened to economic growth during this same period that followed the economic Depression?

During the first phase of tax increases following the Great Depression declines that occurred from 1929-1933, the economy began a growth period unmatched in American history. This was prior to the Second World War spending spree. While marginal tax levels were again similar to those from 1916-1920 when for the first time wages gained the majority of the surplus value in the economy, the ratio of surplus value added going to wages began a slow movement back above the 3 level as shown in Figure 10 (appendix). The economy was able to sustain growth during this time and, in fact, created the large middle class in America.

The Post War Era

The economy from 1945 until 1981 was in a period of growth with a few small recessions but nothing that was sustained nor deep as had been felt in 1921 and again in 1929-1933. Consistent with the premise of this paper, the ESI was sustained over 4 during this time hitting a peak in 1971 of 4.94 as shown in Figure 11 (appendix).

In 1981, the first real marginal tax cuts began the decline in the ESI ratio. Almost immediately following the tax cuts, the ratio began to decline. Figure 12 (appendix) shows that decline over time.

There is no disputing that the ESI ratio once again followed marginal tax levels. Whereas in 1921, the tax cuts over the next 4 years, cut aggregate wages by more than 40%, the tax cuts in 1981, 1987, 2001, and 2002 resulted in the ESI ratio moving to 2.05 in 2007. It is not a coincidence that the economic collapse happened at this time. The ESI ratio had returned to levels that would not allow the economy to be sustained in growth. The economy had felt the effect of an under 3 ESI level for several years. It was only sustained by a period of massive borrowing that ultimately could not be continued and when that happened, the economy collapsed. Without that massive borrowing, the economy would have collapsed much sooner.

Kennedy-Johnson Tax Cuts

Scholars, academics, and journalists who generally support the notion that lowering taxes leads to economic growth and prosperity often suggest that the Kennedy-Johnson tax cuts were a successful example of this idea. They believe the tax cuts were directly responsible for the improvement in the economy in the 1960s. Others think that the lowering taxes to create growth claim is dubious and argue that lowering taxes does not necessarily stimulate economic growth and that the Kennedy-Johnson tax cuts had nothing to do with the economic expansion that followed. The 1960's Kennedy-Johnson tax cuts (Revenue Act of 1964) are a unique tax policy. The Kennedy tax cuts included provisions for faster depreciation write-offs, permitted investment tax credits for equipment (having more than a four-year life), and decreased corporate and individual tax rates for all tax brackets. The tax plan also included a higher minimum standard deduction for individuals as well as other new deductions, such as moving expenses, that were not previously deductible. Corporate rates were reduced from 52 percent to 48 percent and personal tax rates were decreased in all

brackets from 91 percent in the top bracket to 70 percent. The lower income tax brackets saw rate reductions from 20 percent to 14 percent.

Marginal rates were lowered, but at the same time some loopholes were eliminated, thus creating a revenue neutral program as the goal. President Kennedy's initial proposal included elimination of the inherited capital gains tax break, but it was not in the final tax bill that passed congress. Another suggestion that was not accepted was the tax provisions related to the percentage depletion allowed for oil and gas. Several loopholes regarding personal holding company income, and personal holding company taxes, were closed and this probably resulted in the biggest number of loopholes that were eliminated. The personal holding company tax law was extensively revised under the Kennedy Tax Cuts (Lowndes, 1964).

Table 1 (appendix) shows the tax revenue, change in tax revenue, and the Economic Sustainability Index from 1961 to 1971. President Johnson and Congress passed the Revenue and Expenditure Control Act of 1968. It placed a temporary ten-percent tax placed on corporate income. The Vietnam War, the War on Poverty, Medicare, Medicaid, and other Great Society programs started by President Johnson all required massive amounts of money. The temporary ten-percent tax placed on corporate income was implemented to finance these programs. The 1965 to 1969 period saw revenue increased while the 1970 and 1971 tax cuts saw revenue decline causing, what was at that time, massive deficits in contrast to the 1968 surplus. During this same time, the ESI was sustained, and actually reached a peak of 4.95 prior to the 1971 tax cuts. Following 1971, the ESI has declined for almost 40 years following continual tax cuts.

Reagan-Bush Tax Years, 1981-1993

The Economic Recovery Tax Act of 1981 was a major piece of legislation signed and championed by President Reagan. The Reagan tax cuts, just as the Kennedy-Johnson tax cuts, are held up as a successful example for lowering taxes to stimulate the economy and promote growth. Reagan's tax law reduced top rates from 70% to 50% and phased in a 23% reduction in individual tax rates. Depreciation schedules were accelerated, the law indexed tax rates to inflation, reduced the Windfall Profit taxes, and many other provisions that lowered taxes on individuals and corporations. There were several tax bills passed during Reagan's presidency. President Reagan's tax packages included higher Social Security payroll taxes, higher gasoline taxes, and higher cigarette taxes as well as extending the telephone tax. President Reagan's tax laws also imposed taxes on Social Security benefits and Medicare hospital insurance. In addition, the Reagan tax laws repealed the investment tax credit, eliminated the second earner deduction, and eliminated capital gains exclusion from ordinary income. Other provisions of the law limited deduction for non-business interest, limited passive losses and eliminated ESOP estate taxes. President Reagan is not well known for increasing taxes, but the tax laws passed during his administration generally raised taxes by removing tax loopholes.

The 1981-1993 period is important to analyze because there were some structural changes taking place in how the economy was managed. The tax cuts began the decline of wages and the movement to aggregate capital, which meant that money was being removed from the economy during this time and put into speculation. The Economic Sustainability Index was declining during this period as shown in Figure 13 (appendix). The 1987 Black Friday collapse of the stock market was second only to the 1929 crash. It was almost the exact amount of time it took in 1924-1929 following the tax cuts to under 30% marginal levels. In 1924 this was done and again in 1982, 1983 and again in 1987 tax levels were under 30%.

Clinton Tax Years, 1992-2000

The Omnibus Budget Reconciliation Act of 1993 launched the tax policies under the Clinton administration. The Omnibus legislation repealed the income cap imposed on Medicare taxes, created individual tax brackets of 36% and 39.6%, increased the taxable portion of Social Security benefits, increased fuel taxes, certain personal exemptions were to be phased out but President Clinton's tax bill stopped the phase out. Also, some itemized deductions were to be eliminated and President Clinton's tax bill stopped this as well. Other tax legislation during the Clinton administration included, but was not limited to, extending air transportation excise taxes, increasing the cigarette tax, as well as a reducing the highest capital gains tax from 28% to 20%.

Economic Sustainability Index and Tax Changes from 2000-2013

By 2000, the ESI index value was at an unsustainable level. The result was the recession in 2001. There was a massive increase in government borrowing that occurred as a result of the 2001 recession. The increased borrowing stimulated the economy and helped to overcome the lost demand created by wages not receiving a sustainable growth level of the economy. The lowering of profits following the tax cuts of 1987 created a small spike in the ESI ratio, but it did not reflect an increase in aggregate wage share, rather it led to a decline in capital share due to the lost economic demand. The ESI for 2001-2013 is shown in figure 14 (see appendix).

In 2007, the ESI ratio hit an all-time post War low of 2.05. In 2005 and 2006, the ESI ratio was 2.17 and 2.14 respectively. The low ESI ratio occurring in these three years signaled certain economic collapse. This was clearly a warning that the economy was in a very unsustainable level. The deficit speeding and massive borrowing that occurred in 2005 was the only thing that kept the economy from collapsing further. Once that was gone, the economy had no foundation for growth at all and collapsed. A decade of under ESI levels of 3 had finally resulted in what is called the Great Recession but, in fact, was and continues to be, a Depression. Due to low marginal tax levels below 60% since 2008, the value added is not sufficient to sustain growth. The low marginal tax rates has caused too much money to flow out of the demand economy and into the speculation economy. As evidenced by the 1920's period of stock market gains caused by low marginal tax rates moving money out of the demand economy and into the speculation economy, the same scenario is being played out in 2018. The result will once again be a reorganization of the gains of the economy as the only means to change the economic decline. The similarity to the 1920's is striking.

THE PERCENTAGE OF WAGE GAINED FROM NATIONAL INCOME DURING TAX CHANGE PERIODS

The first significant change in marginal tax rates happened under Wilson starting in 1917. During the beginning of his administration, aggregate wages were only gaining 26.7% of the national income. Following the tax increases, by 1920 that level was up to 64.6%. For the first time in American history, wages were gaining a greater share of national income than capital indicated in Figure 15 (appendix).

President Harding was elected in 1921. President Harding immediately cut marginal tax rates. By 1924, marginal tax rates were down to 24%. Figure 16 (see appendix) shows what happened to wages as a percentage of national income.

Immediately the percentage of wages declined each year until the Great Depression began in 1929. Once again aggregate wages were gaining less than half of national income. Marginal tax levels were dramatically increased for four years (1921-1924). The tax

increases were followed by marginal tax rate decreases for four years (1925-1929). The results indicate a direct connection exists between the level of marginal tax rates and the percentage of national income and the amount of aggregate wages. But history provides more evidence of this connection. Another example is to examine the annual change following the tax cuts as shown in Figure 17 (appendix).

The period had six out of 12 years with a decline in aggregate wages. It would prove to be the worst period in American history with the reminder that this happened before the Great Depression when four out of eight years had seen a decline. The wage depression had been happening for a decade before the resulting recognition of the Great Depression happened.

In 1929, the economy collapsed (see appendix, figure 17) which destroyed profits and thus capital. For a brief time, wages regained the majority of national income, but only due to this collapse of capital. Thus, what followed after the economic collapse indicated a continued connection between tax changes and aggregate wages (see appendix, figures 16 and 17). Once the economy reached the bottom in 1933, marginal tax levels once again significantly increased back up to 68%. What followed? Wages as a percentage of national income is shown in figure 18 (appendix), and you can see that it provides a similar answer to what had happened from 1916-1920.

Once again, it seems the Depression was stabilized, the share of aggregate wages climbed back to 69% with marginal tax levels reaching 68%. The change in marginal tax levels influenced how the national income was distributed for the fourth time in 24 years. Measured by the aggregate capital and aggregate wages the change in tax rates determined the share of the national income going to aggregate capital and aggregate wages. In looking at additional tax increases all the way to 91%, a longer time period chart (see appendix, figure 19) provides continued evidence of the connection.

The pattern is consistent with previous results as 91% marginal tax levels moved the share of national income over 80% for more than 30 years. This was also a period of very high growth rates for the overall economy. From 1981 until 1989, the marginal tax rate were cut several times. By 1989, marginal tax rates were 28%, a rate that was similar to rates during the 1920's. Aggregate wages as a percentage of national income for this period is shown in figure 20 (appendix).

A steady erosion of wages can be seen in the short term. What followed has been a period of cutting tax rates for a variety of sources not just income. The long term trend is shown in figure 21 (appendix).

As marginal rates were briefly raised back to 39.6% in 1993, an uptick is seen, but the still low overall tax levels saw the percentage stay in the under 70% range. Whereas, for more than 30 years, wages were gaining more than 80% of the surplus value that was added each year to the economy and that level has declined for a similar period to around 70%. The results have been historically low growth rates. The 100-year pattern has now been completed with four major changes in tax levels.

CONCLUSIONS

The authors' study has several interesting conclusions. A recession has followed every cut in marginal tax levels for the last one-hundred years. Every tax cut in the last one hundred years has resulted in a lower percentage of the national income being received by wage earners. Using two different methods of viewing the history of the economy and tax rates levels, the same result is seen. The ESI ratio was sustained for a period of over 30 years above 4 that resulted in a period of rapid growth of the middle class in America. This translates to wage earners gaining over 80% of the national income.

Every tax increase in the last one hundred years has seen a period of economic reversal and growth. Since the economy has not seen sustained taxation levels of 60%, but rather only under 40% or over 80%, there is no way to exactly determine at what tax levels are optimal for the economy to best grow at and for what period of time the growth would be sustained. Using the ESI ratio, it is possible to track what is happening in the economy. The sharp movements, or the long term change movements, certainly tell a story as history has shown over and over again. Wages and capital are the two areas that our economy rewards. The tax level is an important factor regarding the distribution of the reward to these factors of production. Over time, the tax levels change and the distribution of the reward to capital and labor can change. The lower levels of economic growth per era can be seen as marginal rates have declined. The trend line is undeniable as figure 22 (appendix) indicates. The annual change has been declining since 1981 when the tax cuts began and continue to this day.

The ability of the economy to grow and sustain itself appears to require aggregate wages to be at least 75-80%. Once the level falls below 70%, the economy will falter and enter recession. There appears to be a direct link from the level of marginal tax rates and the amount of the national economy that wages command. Wages create demand, while capital is often moving into speculation investments. Speculation investments do not grow the economy at all. Marginal tax rates undoubtedly affect the spending habits of various income levels. Tax rates that are associated with each income level are different and influence the economy in very different ways. Also, capital and labor react differently to marginal tax changes. Tax cuts that provide the high income earners the most gain perhaps removes demand from the economy, lowers motivation to increase wages and capital investment in favor of speculation. The historical record places little doubt that there is a direct connection in the economy between aggregate wages earned and marginal tax levels. The higher the level of marginal taxes, the greater share of the national income goes to wages. That is a historical occurrence from the above evidence.

An additional influence, that is recent in origin, is the level of credit in the economy. Future studies should seek to include this in the analysis as well. Government spending is also a large part of the economy and gains a substantial percentage of the economy's spending. This also could be included as well in perhaps new ratios that show the influence relative to the economy.

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APPENDIX

Figure 1: Wages as a percentage of National Income, 1917-1920.

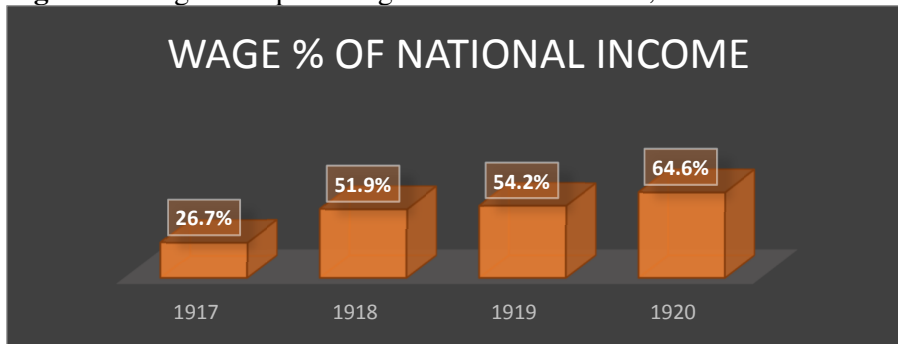


Figure 2: Aggregate Wages, 1916-1920, IRS data.

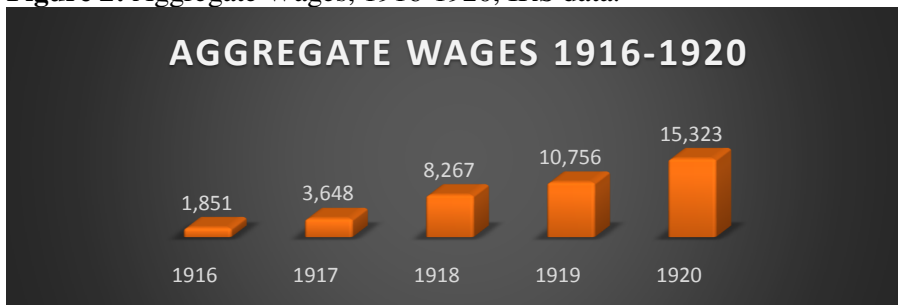


Figure 3: Aggregate Capital, 1916-1920, compiled from IRS data.

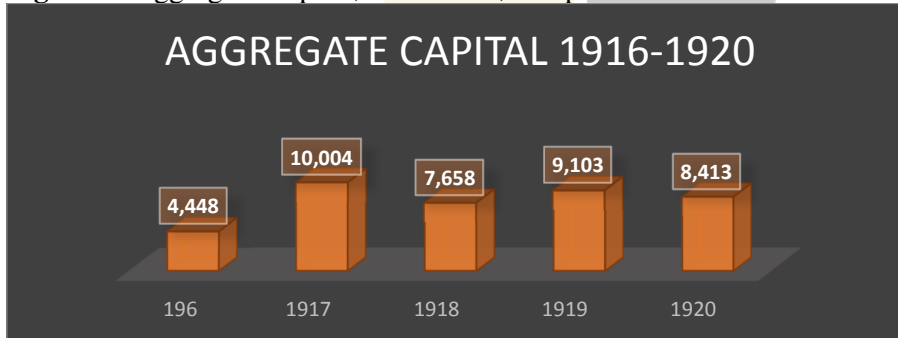


Figure 4: Economic Sustainability Index, 1916-1920.

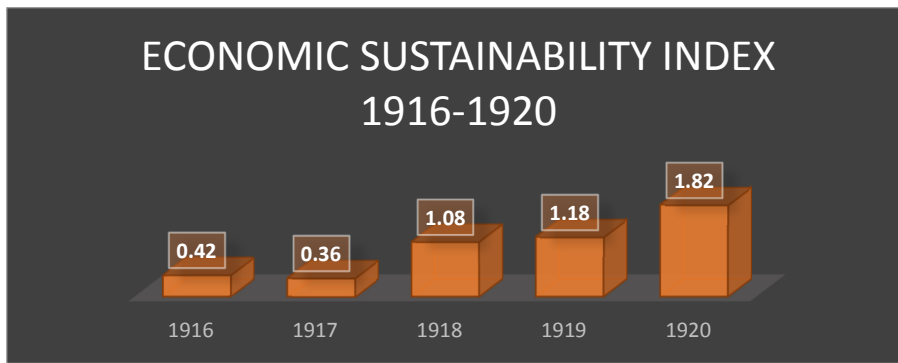


Figure 5: Aggregate Capital, 1920-1927, compiled from IRS data.

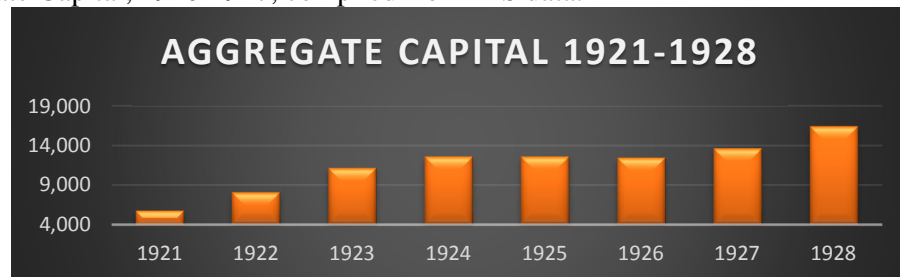


Figure 6: Aggregate Wages, 1920-1928, compiled from IRS data.



Figure 7: The ESI or Wage/Capital Index, 1920-1928, compiled from IRS data and the authors' calculations.

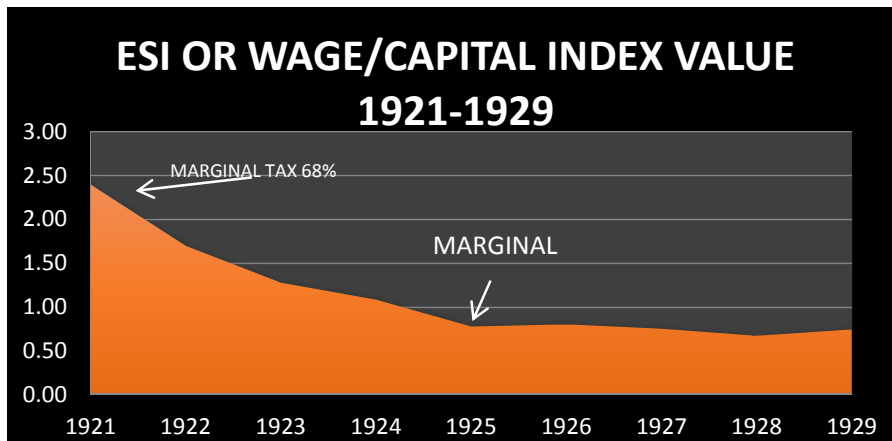


Figure 8: ESI or Wage/Capital Index, 1933-1981, compiled from IRS data and authors' calculations.

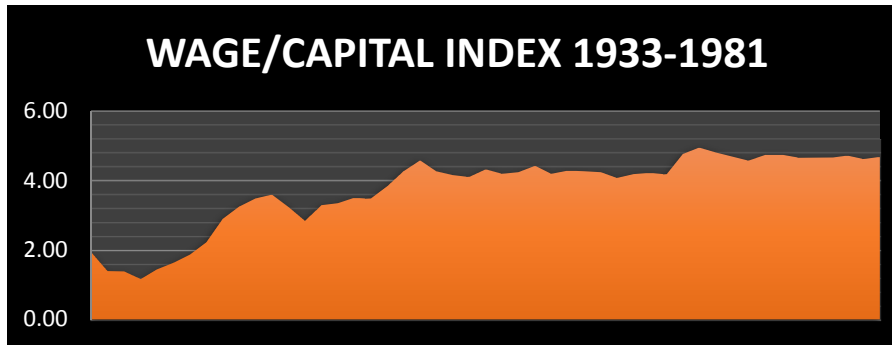


Figure 9: Aggregate Wages, 1931-1939, compiled from IRS data.

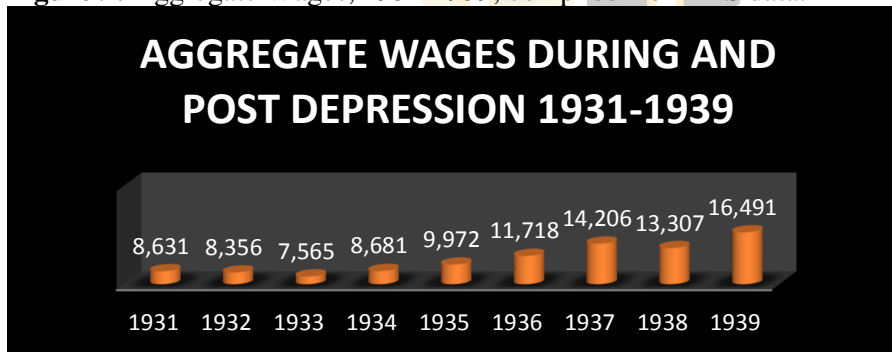


Figure 10: ESI or Wage/Capital Index, 1933-1943, compiled from IRS data and authors' calculations.

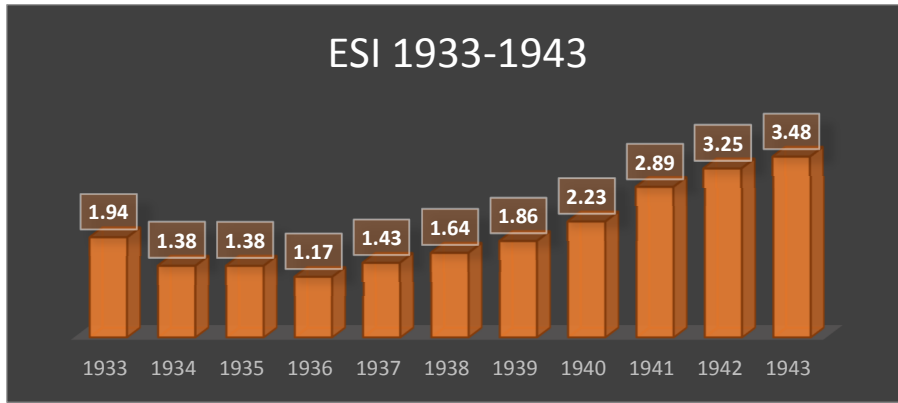


Figure 11: ESI or Wage/Capital Index, 1952-1985, compiled from IRS data and authors' calculations.

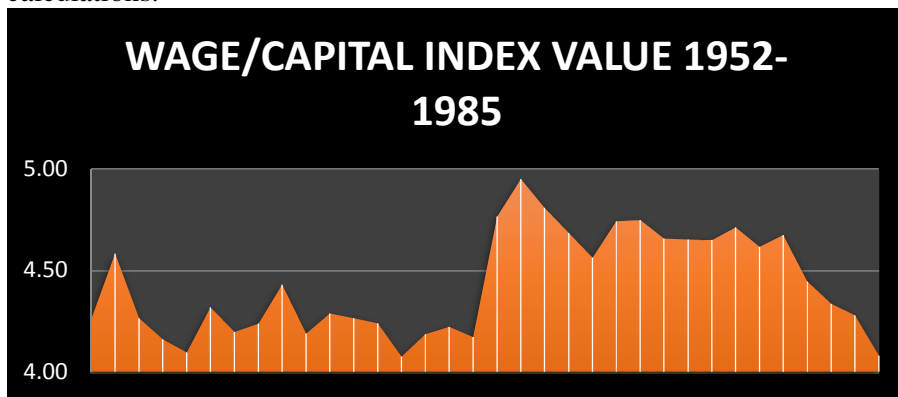


Figure 12: ESI or Wage/Capital Index, 1952-2005, compiled from IRS data and authors' calculations.

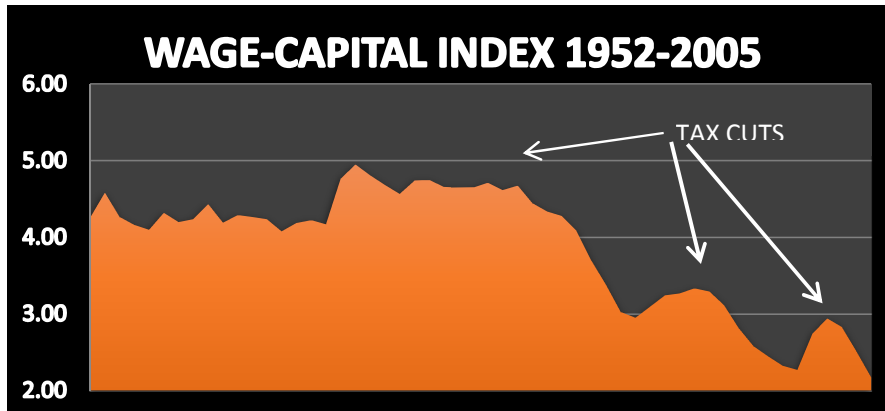


Table 1: Tax Rate, Revenue Change, Surplus/Deficit, ESI from 1961-1971 compiled by the authors from IRS data.

| Year | Tax Cut (loophole closing) | Revenue | Revenue Change | Surplus (Deficit) | ESI |
|------|----------------------------|---------|----------------|-------------------|------|
| 1961 | 52% | 94,388 | | -3335 | 4.19 |
| 1962 | 52% | 99,676 | +5.6% | -7146 | 4.29 |
| 1963 | 52% | 106,560 | +6.9% | -4756 | 4.26 |
| 1964 | 50% | 112,613 | +5.6% | -5915 | 4.24 |
| 1965 | 48% | 116,617 | +3.5% | -1411 | 4.07 |
| 1966 | 48% | 130,835 | +12.1% | -3698 | 4.18 |
| 1967 | 48% | 148,822 | +13.7% | -8643 | 4.22 |
| 1968 | 52.8% | 152,973 | +2.8% | -25,161 | 4.17 |
| 1969 | 52.8% | 186,882 | +22.2% | 3242 | 4.77 |
| 1970 | 49.2% | 192,807 | +3.2% | -2842 | 4.95 |
| 1971 | 48% | 187,139 | -2.9% | -23,033 | 4.81 |

Figure 13: ESI or Wage/Capital Index, 1981-2000, compiled from IRS data and authors' calculations.

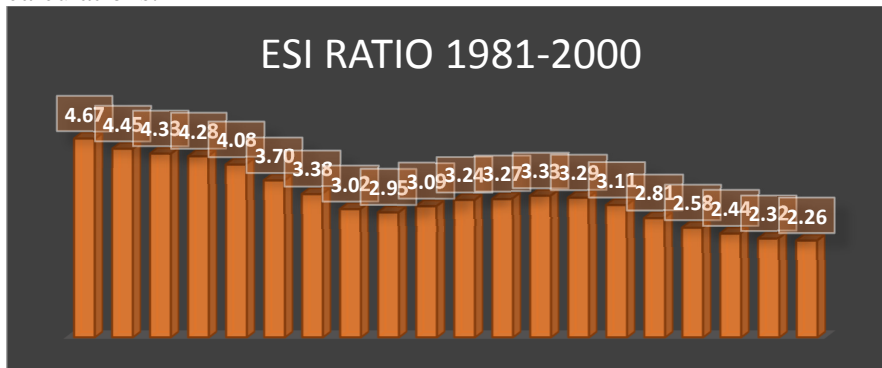


Figure 14: ESI or Wage/Capital Index, 2001-2013, compiled from IRS data and authors' calculations.

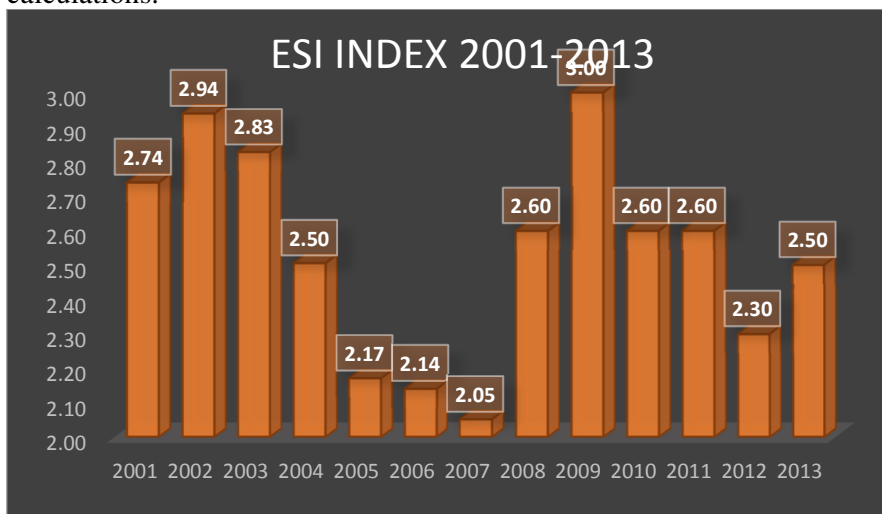


Figure 15: Wages as a percentage of National Income, 1917-1920.

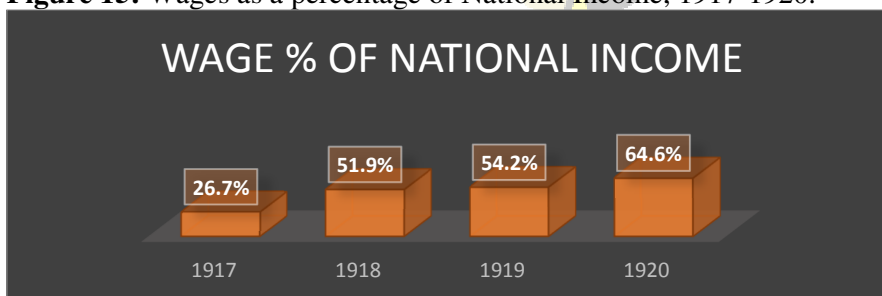


Figure 16: Wages as a percentage of National Income, 1921-1928.

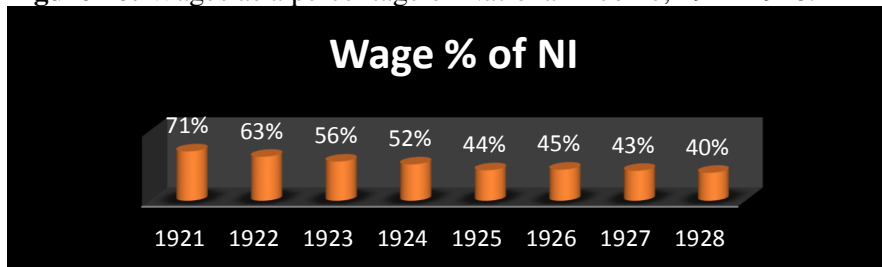


Figure 17: Annual Wage Change, 1921-1932.

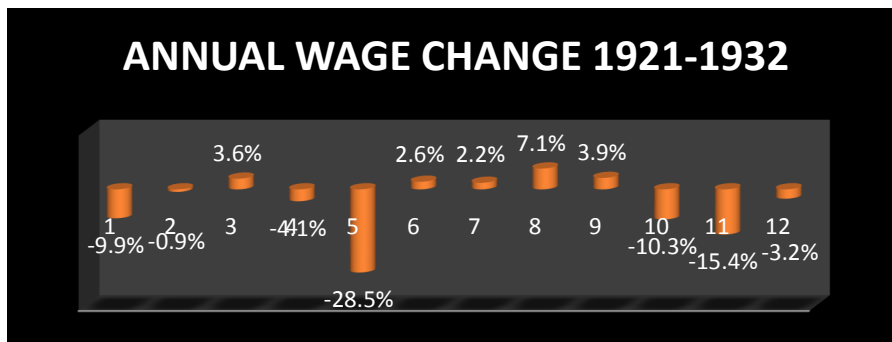


Figure 18: Wages as a percentage of National Income, 1933-1940

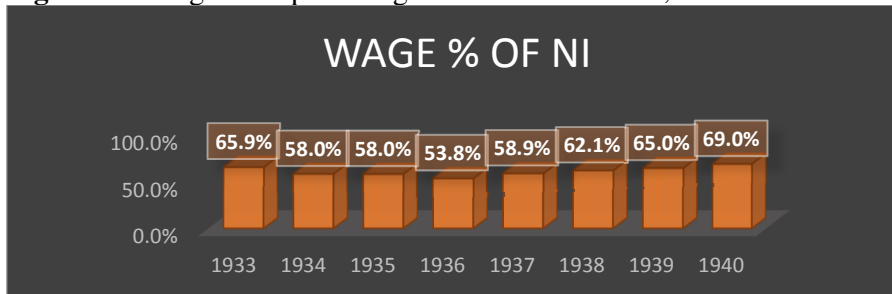


Figure 19: Wages as a percentage of National Income, 1941-1980.

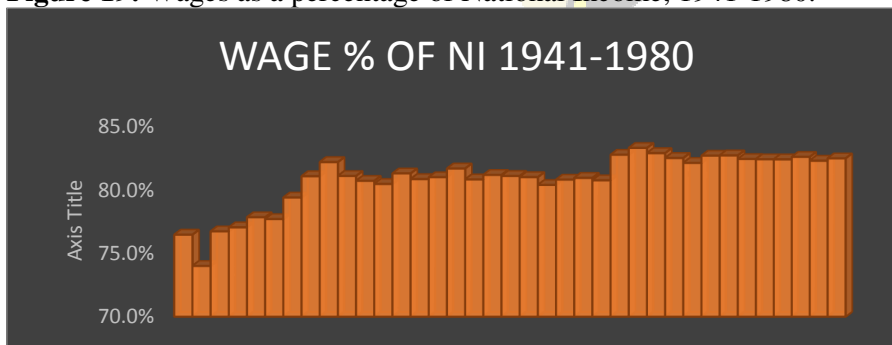


Figure 20: Aggregate Wages as a percentage of National Income, 1981-1988.

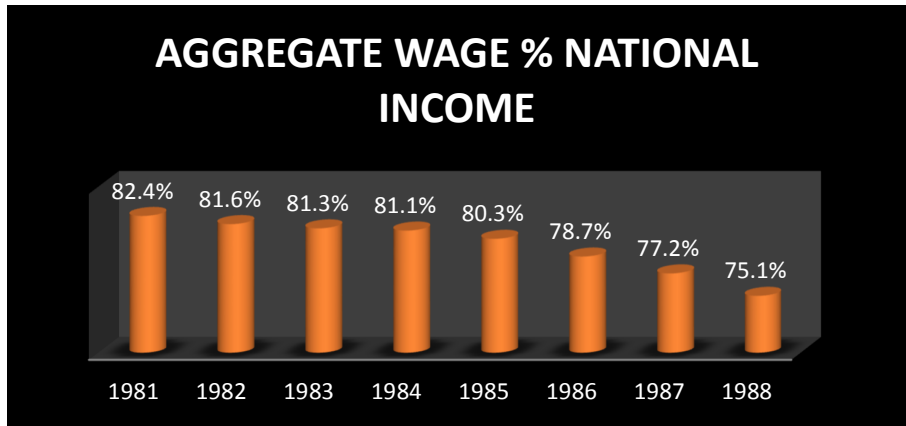


Figure 21: Wages as a percentage of National Income, 1980-2014.

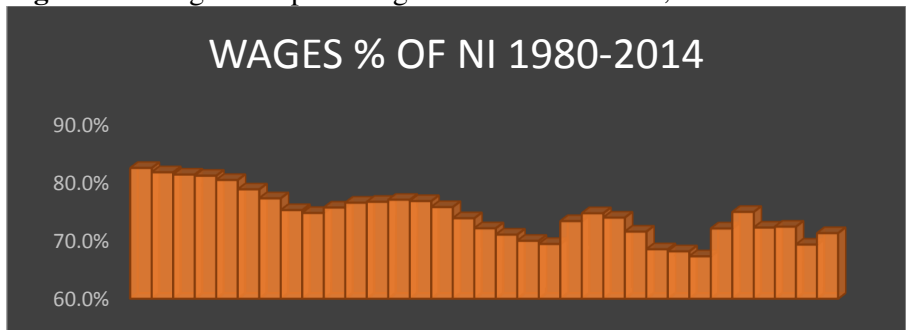


Figure 22: Annual Wage Change, 1961-2014.

