A Better Distribution of Income Improves the US Economy

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The recent economic upturn after the recession of 2007-2009 has been more sluggish than most previous recoveries. The new tax laws will lead to more government borrowing to finance its budget deficit which will raise the interest rate and crowd out households and firms which will reduce aggregate spending and will have a contractionary impact on the American economy. Although there is no consensus about a solution for recession, there are some economic policy recommendations which can help a contracted or sluggish economy. Specifically, a better distribution of income improves the US economy especially during the economic downturn and or the slow recovery. Using time series data for 1949-2017(Q3), the empirical estimates confirm the hypothesis that the propensity to spend out of average and below average income is greater than the propensity to spend out of high income. Any policies, such as recent changes in tax laws in favor of high income will reduce aggregate spending and will have a contractionary impact on the economy. Any policies leading to shifts of income from high income to average and below average income will increase the aggregate spending and have an expansionary impact on the economy. Therefore, a better distribution of income improves the US economy both during the economic slowdown and the recovery after 2007-2009 recession.

1. Introduction

How does a change in the distribution of income impact the US economy during the economic downturn? What is the main reason for the recent long and slow recover and what is the role of distribution of income in economic slowdown? After more than two centuries of debates regarding the business cycle, there is no general agreement among economists about what causes recessions. Abel and Bernanke (2016) believe that the answers to two questions regarding the causes of the business cycles and the way to fix it have remained highly controversial. Sherman and Meeropol (2015) believe that the main causes of macroeconomic instability are raising inequality and financial crises in the US economy during the last several recessions. Sherman and Meeropol (2015) suggest that sometimes, it is useful to look back and find out why recessions have occurred and why recoveries usually followed shortly thereafter. This also helps to understand the causes of the Great Recession of 2007 to 2009 which differ partially from most other previous recessions.

According to Bade and Parkin (2012), the National Bureau of Economic Research (NBER) has identified 35 complete cycles starting from a trough in December 1854 and over 158 years, the US economy has been in recession for about one third of the time and in expansion for about two thirds of the time. Since the Great Depression, multiple

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competing theories of business cycle emerged to explain the causes of an economic slowdown (Punzo, 2015). For example, regarding the 1990-1991 recession some economists believe that it was caused by an aggregate demand downturn from a reduction in consumer confidence during the Gulf war. Several experts blamed the Federal Reserve policy of reducing the money supply. Other economists believe it was caused by a decrease in aggregate supply brought about by an increase in the price of oil. Others argued that the main causes of the 1990-1991 recession was the delayed effects of the tax increase and the new government regulations implemented in 1980's (Knoop, 2004). Similarly, several causes for the recession started in 2007 have been identified by different economists. These factors include the real estate market, financial market crisis, the increase in the price of oil, uneven trade policies, the continuous depreciation of the U.S. dollar, Federal Reserve policy, the war in the Middle East, and too much government involvement in the market economy. Arnold (2015) believes that different school of economic thought such as classical, Keynesian, and monetarist provide different alternative explanations for the business cycle and prescribe different solutions for recession. According to him, there are two groups of theories regarding business cycle theories: linear and nonlinear. The linear theories assume random shocks excite the resonant mode, producing cycles.

The nonlinear theories develop from limit cycles and their generalizations. It is assumed that there are no exogenous forcing factors. Arnold's point of view deals only with linear theories and therefore it is intellectually limited. Dore (2000) presents both types and is more comprehensive. In short, there is no general solution for recession. However, there is a general consensus among all economists that during any recession, aggregate spending decreases (Navarro, 2010). In his interesting book, "The Secrets of Economic Indicators" Baumohl (2012) presented the economic indicators that investors, business strategists, and policymakers can use to help them translate the economic data into knowledge for intelligent decision-making for future state of the US economy. He also explains several foreign indicators to be used to project potential business cycles in European and Asian economies. According to him in all economies in the world any economic policy leading to an increase in aggregate spending helps the contracted economy (Baumohl, 2012).

Although most of these research papers cover different reasons for economic slowdown or slow and long recovery from the demand side theories to supply side theories but none of the previous research projects show any positive correlations between better distribution of income and economic recovery.

The present paper offers a general policy recommendation to improve the distribution of income to increase aggregate spending when an economy experiences a long and slow recovery after recession.

In section 2the relationship between business cycle and distribution of income is examined. Section 3 is devoted to the theories of business cycles. In sections 4 and 5 the Keynesian and post Keynesian consumption theories are explained. Section 6 is devoted to the dates of peaks and troughs of the previous business cycles in the US from 1949 to 2017. In sections 7 a hypothesis is formed. Using quarterly data for

income and consumption of low income and high income in real terms for the period of 1949-2017(Q3), this hypothesis is tested in section 8. Summary and conclusion is in section 9 of this paper.

2. The Business Cycle and the Distribution of Income

Revenue and cost are two major determinants of profit. Aggregate revenue from the sale of the gross domestic product (GDP) may be divided into four components: consumption spending, investment spending, government spending, and net exports. Consumption spending is, by far, the largest component of aggregate demand or aggregate revenue. Consumption spending has been between 65 and 70 percent of the total GDP. Over 90 percent of personal disposable income is absorbed by consumption (Namvar, 1995). Obviously, the behavior of consumption has had considerable impact upon the behavior of aggregate demand and the business cycle (Blinder, 1975).

The theory of the consumption function was changed radically in the 1930s by John M. Keynes. Then, it was changed radically again in the mid-1950s with the emergence of "the new theories" of the consumption function (Mankiw, 2015). These include the permanent income hypothesis, the life cycle theory, and other consumption models that stress psychology and downplay income distribution.

On the other hand, the distribution of income is of extreme importance to many business cycle theories such as Thorstein Veblen (2013 reprint), Wesley Mitchell (1951), G. Moore (1994), and the post-Keynesian school. Income distribution in this paper refers to the functional distribution between low and average income (wage and salary earners) and high income (non-wage earners); it does not refer to individual income distribution. The objective of the present paper is to test the hypothesis that consumption depends critically on the distribution of income between the wage and salary earners and high income earners; non-wage earners.

3. Theories of Business Cycles

Sherman and Meeropol (2015) consider four periods in the evolution of cycle theory:

I. Classical political economy which believed in Say's law and saw the private enterprise economy as a self-adjusting economy with competition prevailing as the mechanism leading to equilibrium.

II. The rise of neoclassical economists from 1870 to 1930. They explained Say's law in a technical fashion by examining separately the labor market, the product market, and the money market. Cycle theories were formulated by examining the shocks from monetary institutions and shocks from technical changes.
III. The Keynesian revolution from the 1930s until the 1970s. Keynes criticized Say's law based on the price rigidities that prevent adjustment to full employment.
IV. Modern business cycle theory period including monetarism and rational expectations which have attempted to revitalize Say's law. New-Keynesians, Institutionalists, and

post-Keynesian economists who attack Say's law and the notion that the economy self-adjusts to equilibrium.

4. Keynesian Theory of Consumption

Keynes (1936) argued that a "fundamental psychological law" is the basis for consumer behavior. There are two broad groups of factors, subjective and objective factors, which he considered in analyzing the aggregate consumption function. Subjective factors are unlikely to change over a short period of time except in abnormal or revolutionary circumstances. He assumes that changes in aggregate consumption depend only on changes in the objective factors. Some of the principal objective factors are: change in income, change in the difference between income and net income, and changes in fiscal policy (Sherman & Meeropol, 2015). The ratio of consumption to income is defined as the average propensity to consume (APC), while the ratio of additional consumption to additional income is called the marginal propensity to consume (MPC). With the help of these two economic terms, Keynes' consumption theory has been developed. According to Keynes, APC or MPC is socially-conditioned and constrained by the objective facts. MPC is assumed to be constant, meaning that all individuals have the same MPC (Mankiw, 2015). Keynes concluded that aggregate consumption is a fairly stable function and mainly depends on the aggregate income. However, Keynes pointed out in different parts of the General Theory that redistribution of income has effects on the aggregate consumption.

5. The Post-Keynesian Consumption Theory

The post-Keynesian theory suggests that consumption depends critically on the distribution of income between low and average income earners, wage and salary earners, and non-wage earners, wealthy people (Lorenzo, 2010). Also, post-Keynesian models put more emphasis on the assumption that MPC depends on the source of income and it is not considered as constant for all consumers (Eichner, 1979). A post-Keynesian consumption model is used in this research to test the hypothesis.

It is imperative to mention that wage income and non-wage incomes are defined differently in different studies. Some define worker's wage as wages only; others define it as all employee compensation including salaries, bonuses, and fringe benefits. Some define non-wage income as personal profits only while, in other research, non-wage income includes interest income, rent, and retained profit. There are a number of studies finding a much higher APC (or MPC) for wage income earners compared to APC (or MPC) for non-wage earners. Among these are Sherman and Meeropol (2015), Fichtenbaum (1985), Sherman (2011), Burnmeister and Taubman (1969), Modigliani and Steindel (1977), Steindel (1977), Arestis and Driver (1980), Marglin & Bhauri (1993), Friedman (1957), Namvar (1995), Abel and Bernanke (2016), and Bade and Parkin (2012).

Most of the recent consumption functions explaining cycle theories were influenced by the dominant theories of permanent income (Friedman, 1957), relative income (Duesenberry, 1967), and life cycle (Modigliani & Ando, 1963; Modigliani & Steindel,

1977) hypotheses. The permanent income hypothesis suggests that consumption is more closely related to permanent income than to annual or quarterly transitory income. The life cycle hypothesis argues that consumption habits vary over the lifespan and depend more upon total wealth than income. The relative income hypothesis states that people are not so much concerned with their absolute level of consumption as with their consumption relative to the rest of population. These cycle theories assert that consumption is independent of the distribution of income and ignore the impact of redistribution of income on the general economic performance (Rubin & Nieswiadomy, 1994).

6. Business Cycles (1949-2017)

In traditional societies, natural phenomena or political conflicts were considered the main reasons for business cycles. But, according to Wesley Mitchell (1951) who is often called the father of modern business cycle analysis, modern private enterprise economy experiences recurring business cycles defined as "alternating periods of expansion and contraction in economic activities." The business cycle is an economy-wide, endogenously caused phenomenon within the private enterprise system. Each cycle generally lasts from one to several years. Table 1 shows business cycles, with quarterly peaks and troughs, for the past nine cycles since 1949.

Table 1: The US Business Cycle Peaks and Troughs Dates

BUSINESS CYCLE REFERENCE DATES		DURATION IN MONTHS			
Peak	Trough	Contraction	Expansion	Cycle	
Quarterly dates are in parentheses		*Peak to Trough*	*Previous trough to this peak*	*Trough from Previous Trough*	*Peak from Previous Peak*
July 1953(II)	May1954 (II)	10	45	55	56
Aug 1957(III)	Apr 1958 (II)	8	39	47	49
Apr 1960(II)	Feb 1961 (I)	10	24	34	32
Dec 1969(IV)	Nov 1970 (IV)	11	106	117	116
Nov 1973(IV)	Mar 1975 (I)	16	36	52	47
Jan 1980(I)	July 1980 (III)	6	58	64	74
July 1981(III)	Nov 1982 (IV)	16	12	28	18
July 1990(III)		8	92	100	108
Mar 2001(I)		8	120	128	128
Dec 2007 (IV)		73			81

Source: National Bureau of economic research, www.nber.org/cycles.html

Wesley C. Mitchell, founder of the National Bureau of Economic Research (NBER) in the 1920s, divided each cycle into nine stages. Stage 1 is the initial trough, stage 5 is the peak, and stage 9 is the final trough. Stages 2, 3, and 4 divide the expansion into an equal number of quarters while stages 6, 7 and 8 divide the contraction into an equal number of quarters. Stages 1 to 3 are called "recovery," 3 to 5 are "prosperity," 5 to 7 are "crisis," and stages 7 to 9 are "depression." To study and analyze the business

cycles, the average level of an economic variable at each stage of the cycle is calculated for the last nine cycles from 1949-2007.

Following Sherman's business cycles data analysis (2011), data on average national income, average national consumption, and calculated APC show that national income in real terms rose in the average expansion by 17.9 percent and fell in the average contraction by 3.3 percent. With respect to aggregate consumption, expansion and contraction are not as strong as for national income. On the average, consumption rose 14.8 percent to the peak and fell only 0.6 percent to its lowest level in the contraction. The cyclical pattern of the average propensity to consume (APC), that is, the ratio of consumption to income, shows that it falls in the expansion and rises throughout the contraction. That is because the national income rises faster than consumption in expansion and falls faster in contraction. During the last nine cycles, APC changes have been consistently counter-cyclical.

7. Hypothesis

Namvar (1995) concluded that the wage share of national income moves down in early expansion and moves up strongly in early contraction. Also, it was concluded in the previous sections that APC decreases in expansions and rises in contractions indicating that the wage share of national income moved in the same direction as APC in the last nine expansions and contractions. This indicates that there may be a relationship between propensity to consume and labor share of national income (Sherman and Meeropol 2015). Also, in the previous sections it was concluded that worker's spending from labor income shows a higher propensity to consume than spending from non-labor income. If we put these three facts together (APC cycle, labor share cycle, and high APC for wage-earners), a hypothesis is formed for this paper suggesting that the aggregate consumption depends critically on the distribution of income between average income or wage-earners and non-wage earners (rich people). Using quarterly data in real terms for the period of 1949-2017 (Q3), this hypothesis will be tested.

8. Estimation and Results

Consumption is defined as aggregate consumption expenditures including all spending on non-durables, durables, and consumer services. Wages are measured as compensation of employees during the time period 1949-2017(Q3). Non-wage income is measured as all incomes except for the wage compensation of employees which includes all rental, interest, and profit incomes received by the consumers plus all profits retained by all producing companies.

Following the model used by Namvar (1995):

$$C_t = a + b_t Y + c C_{t-1} + \varepsilon_t \tag{1}$$

$$b_t = d\left(\frac{W}{P}\right)_t + e\left(\frac{W}{P}\right)_t^2 \tag{2}$$

Where: C = Consumer expenditure
             W = Wage income
             P = Non-wage income

The argument is that if d and e are zero, then b_t is unrelated to the changes in income distribution. On the other hand, if d and e are not zero, then b_t is a variable and it is a function of the distribution of income. By substituting (2) into (1) we obtain:

$$C_t = a + d\left[\left(\frac{W}{P}\right)Y\right]_t + e\left[\left(\frac{W}{P}\right)^2 Y\right]_t + cC_{t-1} + \varepsilon_t \qquad (3)$$

$$C_t = -25.2 + 0.34\left[\left(\frac{W}{P}\right)Y\right]_t - 0.07\left[\left(\frac{W}{P}\right)^2 Y\right]_t + 0.53C_{t-1} \qquad (4)$$

(2.06)   (8.3)   (-8.3)   (8.05)

$R^2 = 0.906$ SER = 11.22 D.W. = 2.29   Sum Squared Residuals = 148.3

The Durbin-Watson statistic of 2.29 indicates that the serial correlation is not a problem. The t-statistic indicates that it is more than 95 percent likely that the coefficient is not zero. Estimated values for d and e are both statistically significant at the 0.1 level indicating that it is more than 90 percent likely that these coefficients are not zero, meaning that b_t (propensity to consume) is a variable. This indicates that b_t is related to changes in income distribution (shown by the ratio of wage over non-wage income, W/P). This confirms our hypothesis that changes in the distribution of income have a considerable impact on propensity to consume and consequently have a considerable effect on aggregate consumption and on economic activities.

9. Summary and Conclusion

An economic recession is an economy-wide, endogenously caused phenomenon within the private enterprise system. There is no general agreement about what causes a recession and, therefore, no universal consensus on the solution. But it is generally agreed upon that any policy to increase aggregate spending will help a contracted economy.

In the General Theory, Keynes argues that the propensity to consume is not constant for all levels of income. Most of the recent consumption theories, including the permanent income, the life cycle, and the relative income hypotheses, assert that consumption is independent of the distribution of income. An alternative view is the Post-Keynesian hypothesis which argues that aggregate consumption depends critically on the redistribution of income between wage earners and non-wage earners.

All of the above mentioned cycle theories assert that consumption spending is independent of the distribution of income and ignore the impact of redistribution of

income on the recovery of the economic downturn. Using time series data for 1949-2017(Q3), the hypothesis that the propensity to consume is a variable has been tested. It indicates that both MPC and APC are variable parameters. The estimated results do not reject the hypothesis that consumption spending is influenced by changes in the distribution of income between average income or wage earners and non-wage earners. Therefore, any policy leading to changes in the distribution between these two groups will have a considerable effect on the aggregate demand and consequently on the level of economic activity. Any policy associated with shifting income from workers to non-workers will reduce the aggregate propensity to consume and will have a contractionary impact on the economy. On the other hand, any policies leading to shifts of income from non-workers to workers will increase the aggregate propensity to consume and have an expansionary impact on the economy. We can conclude that the expansionary fiscal policy in the form of a tax cut or tax rebate will be more effective if all of the tax cut or tax rebate be devoted only to the average income or middle class group. Therefore, a better distribution of income improves the US economy during the period of economic slowdown.

References

Abel, AB & Bernanke, BS 2016,*Macroeconomics, Prentice Hall*, 9th edition.

Arestis, P & Driver, C1980, 'Consumption out of Different Types of Income in the UK', *Bulletin of Economic Research vol. 32,* pp. 23-36.

Bade, R & Parkin, M 2012, *Foundations of Macroeconomics*, Pearson College Division.

Baumohl, B2012, *The Secrets of Economic Indicators*, FT Press publishing.

Blinder, A1975, 'Distribution Effects and the Aggregate Consumption Function' J*ournal of Political Economy*, vol. 83, no. 3.

Burnmeister, E & Taubman, P 1969, 'Labor and Non-Labor Income Saving Propensities', *Canadian Journal of Economics vol. 2*, pp.1-15.

Dore, M 2000, *The Macro dynamics of Business Cycles*, Blackwell.

Duesenberry, J1967,*Income, Saving, and the Theory of Consumer Behavior*. Oxford University press.

Eichner, A 1979, *A Guide to Post-Keynesian Economic*, New York.

Fichtenbaum, R 1985, 'Consumption and the Distribution of Income', *Review of Social Economy*, vol. XLIII, no. 2.

Friedman, MA 1957, *Theory of the Consumption Function.* Princeton, NJ. Princeton University Press.

Keynes, JM 1936,*General Theory of Employment, Interest, and Money*. New York

Knoop, TA 2004,*Recessions and Depressions, Understanding Business Cycles*, Greenwood publishing group.

Klein, P & Moore, G 1985,*Monitoring Growth Cycles in Market-Oriented Countries*, Cambridge, Ballinger.

Lutz, LG 2015, *Business Cycle theory*, Oxford University Press, USA.

Mankiw, G 2015,*Macroeconomics,* Worth Publishing, 9th Edition.

Marglin, S &Bhauri, A 1993, 'Profit Squeeze and Keynesian Theory', In Stephen Marglin, *The Golden Age of Capitalism: Lessons for the 1990s*. Oxford University Press.

Modigliani, F& Ando, A 1963, 'The Life Cycle Hypothesis of Saving: Aggregate Implications and Test', *American Economic Review vol. 53.*

Modigliani, F. & Steindel, C 1977, 'Is a Tax Debate an Effective Policy Tool for Economic Stabilization', *Brookings Papers on Economic Activity* pp.175-209.

Mitchell, W 1951,*What Happens During Business Cycles*? New York. National Bureau of Economic Research.

Murfin, AJ 1980, 'Savings Propensities from Wage and Non-Wage Income', *Warwick Economic Papers no. 174.*

Namvar, B 1995, 'The Distribution of Income and the Consumption Function', Ph.D. thesis, University of California, Riverside.

Navarro, P 2010, *The Well-Timed Strategy, Managing the Business Cycle for Competitive Advantage*, Pearson Prentice Hall.

Punzo, LF 2015,*Cycles, Growth and Structural Change: Theories and Empirical Evidence*, Oxford University press.

Rubin, R & Nieswiadomy, M1994 'Expenditure Patterns of Older and Nonretired Persons', *Monthly Labor Review vol.117.*

Sherman, H 2011a, Business Cycle Program B University of California, Los Angeles.

Sherman, H 2011b, Business Cycle Program C, University of California, Los Angeles.

Sherman, H and Meeropol, M. 2012, Dynamics of the Current Crisis, University of California, Los Angeles.

Sherman, H & Meeropol, M. 2015,*Principles of Macroeconomics: Activist VS Austerity Policies,* University of California, Los Angeles.

Steindel, C 1977, 'Personal Consumption, Property Income, and Corporate Saving', Ph.D. thesis, Massachusetts Institute of Technology.

Veblen, T 2013,*The Theory of Business Enterprise*. Martino Free Books, Reprint.