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Understanding the Austrian Business Cycle from a Neoclassical Perspective

Presented at the Islamic Economics Institute, King Abdulazia University, Jeddah on 17 April and 15 May 2013

During the Great Depression of the 1930s an important debate took place between two economic scholars: one who would eventually become the Director of the Bank of England; and one who would receive the Nobel Prize in economics. The winner of this debate was John Maynard Keynes, the eventual Director of the Bank of England. The loser was Friedrich August Hayek, the winner of the Nobel Prize in economics[1]. Historically Keynes appears to have won the debate, not because he was Hayek's intellectual superior, rather because he catered to the political climate of the day -- a desire for big government, organized labor, and central banking. After nearly a century of questionable macroeconomic policy under the Keynesian model, there is an important need to review the writings, not of the politician, but of the scholar.

The model outlined in this paper is divided into three components including a production possibilities frontier, a savings and investment market, and Hayek' triangle. The production possibilities frontier highlights the very real trade-off between current and future consumption.[2] The market for real savings and investment characterizes the market mechanism by which this trade-off takes place. Finally, Hayek's Triangle focuses on the term structure of capital as the key to sustainable, long-term economic growth. Combining these three components in a theory of general equilibrium shows clearly that our boom and bust cycles are caused by a distortion in the relative price mechanism brought about by the creation of money *ex nihilo*. In addition, this completed model demonstrates the fundamental weakness of Keynes's *General Theory* and provides the "missing link" between short and long term economic growth. Further, this model strongly suggests that we can eliminate the economic business cycle through the introduction of sound money.[3]

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1   The Royal Swedish Academy of Sciences awarded the 1974 Prize for Economic Science in memory of Alfred Nobel to Professor Gunnar Myrdal and Professor Friedrich von Hayek for their "pioneering work in the theory of money and economic fluctuations and for their penetrating analysis of the interdependence of economic, social and institutional phenomena". <http://www.nobelprize.org/nobel_prizes/economics/laureates/1974/press.html>

2   It is this trade-off that is completely ignored in undergraduate macroeconomic courses and only rarely addressed in graduate macroeconomics courses. What is worse is the mechanism by which it is achieved -- namely, the savings and investment market -- has been supplanted by a market for money that is often completely detached from the real savings, real investment, and the real economy.

3   Roddy A. Stegemann. 2012. "Central Banking: The Enemy of Sound Money. A Transition from Unsound to Sound Money". Unpublished monograph, as well as "Money Creation and the Revolution. Along the Path to Real Change". 2011. Unpublished monograph. <>

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If the model is of interest to the student of Islamic economics, then it is because it is built on a real economy that prefers money, not as a speculative financial instrument created by private and central banks for the purpose of redistributing real wealth from the hands of the many to those of the few, but as a tradable commodity whose sole purpose is to effectuate the trade of real goods and services. Though not in the best Austrian tradition, this model relies on classical general equilibrium theory to effectuate its very attractive outcomes.[4]

The Model's Components

TRADE-OFF BETWEEN CURRENT AND FUTURE CONSUMPTION

What we produce can be either consumed or saved. What we save can be either set aside and consumed at a later date, or invested and employed to produce other goods and services. Although the decision to save and the decision to invest are not one and the same, they are the decisions of the same economic agent -- namely, the income earner. The decision to invest, however, is not the decision of the saver-investor alone, for it requires agreement between him and the entrepreneur who employs the savings of others to produce future consumptive goods and services. Indeed, in the absence of the entrepreneur nothing happens. How these two investment decisions are coordinated is depicted below in the loanable funds market (see figure 2 below).

Figure 1. Production Possibilities Frontier

The indirect relationship between current consumption and new investment depicted in figure 1 captures the trade-off between current and future consumption. It is based on the assumption that *real investment* cannot take place in the absence of *real savings*. Accordingly, the creation of new capital to replace old capital or to increase one's productive capacity consumes time, energy, and resources that cannot be devoted to the production of current consumption. The concavity of the curve reflects diminishing returns in both consumption and new investment. As real investment does not include savings that we set aside and do not invest, these latter are included as part of current consumption.[5] In effect, the real decision is between whether one invests or does not invest given some level of income.
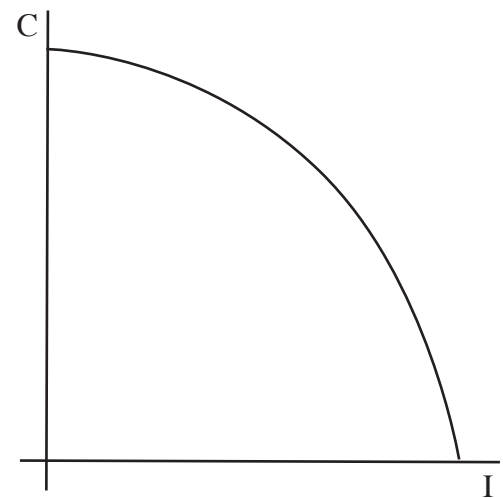
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4   This paper is largely based on Roger W. Garrison's seminal work entitled *Time and Money: The Macroeconomics of Capital Structure* (2001), Jesús Huerta de Soto's *Dinero, crédito bancário y ciclos económicos* (1998), Friedrich August Hayek's *The Denationalization of Money* (1976), and Jörg Guido Hülsmann's *The Ethics of Money Production* (2008).

5   It is useful to distinguish between two kinds of savings: one, uninvested or protected savings, savings that we set aside as a kind of insurance against unexpected or expected income shortfall; and two, invested savings, savings that are lent to entrepreneurs at some risk to the saver-investor. Uninvested or protected savings can also be used for speculative purposes and for large future purchases, but in and of themselves cannot cause an economy to shrink; only a failure to purchase or to replace outworn capital can achieve this. Savings, in whatever form, can be undertaken by anyone who receives income -- this includes firms and government in addition to wage-earners and those on fixed income.

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Finally, keep in mind that the production possibilities frontier comprises the savings and investment decisions of all consumer-savers and entrepreneurs beyond which an economy is unsustainable for a prolonged period in the absence of new investment greater than that of replacement capital.
.

SAVINGS AND INVESTMENT MARKET
In order to capture the coordination between savings and investment we now consider the savings and investment market. This market is comprised of two functions that together capture the decision of consumers to save and invest on the one hand, and the decision of entrepreneurs to undertake new investment on the other.
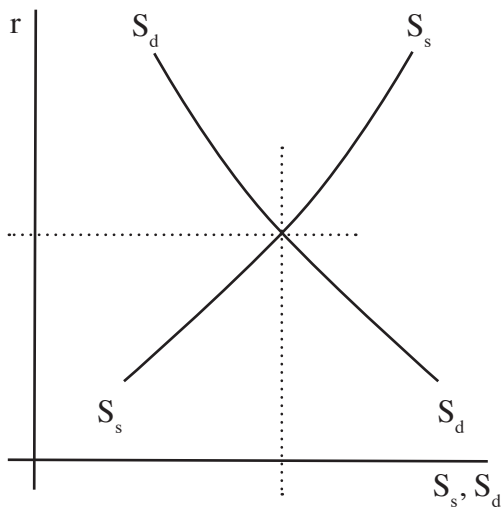
Figure 2. Savings and Investment Market

$$S_s = S_s(r; C) \qquad \text{(equation 1)}$$

$$\delta S / \delta r \geq 0$$
$$\delta S / \delta C \leq 0$$

$$S_d = S_d(r; \Psi) \qquad \text{(equation 2)}$$

$$\delta S / \delta r \leq 0$$
$$\delta S / \delta \Psi \geq 0$$

where   r = rate of return on invested savings
C = current consumption and uninvested savings
Ψ = business outlook

The supply of savings curve in figure 2 is upward sloping because the saver-investor denies himself access to a portion of his real savings during the length of his investment (liquidity risk), and because there is no guarantee that he will ever see his savings again (default risk). In effect, the saver-investor expects to be rewarded for his sacrifice, and the higher the promise of reward, the more willing he is to invest.

The situation for the entrepreneur is both similar and different from that of the saver-investor. Like the saver-investor the entrepreneur is a risk-taker, for he can never know with certainty the value of what he produces until it is actually produced and traded. Also, depending on the nature of the contract between the entrepreneur and the saver-investor, the entrepreneur may be stuck with an obligation no matter his ability to repay when the investment period has expired. Now, if the entrepreneur succeeds, he will likely find it easier to obtain more savings in the future. If he fails, however, he will likely find it difficult, if not impossible to obtain anything at all. Thus, although he generally has more control over how the invested savings of others are utilized, the entrepreneur tends to incur greater risk than the saver-investor.[6] In order to control the amount of risk that he assumes, the entrepreneur must carefully weigh the expected revenue from his project against the already very tangible costs of it at the time of investment. The lower the initial

6   Certainly the nature of the contract into which the entrepreneur enters to obtain the savings of others is very important in this regard.

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cost of investment, the more inclined will he be to undertake his project. Thus, the demand for real savings is indirectly related to the price at which they are obtained.

Notice that in this simple model there is no distinction between saving provided in the form of third party debt or direct participation in the actual investment. In this model we do not care how the investment project is funded.[7] Important is the recognition that current consumption must be sacrificed in order to realize future consumption and that the amount invested is determined by the voluntary decisions of saver-investors and entrepreneurs who interact in a competitive market auction for the available real savings. No government intervention is required, or for that matter, in most cases even desired.

The role of government in this model is primarily that of an unwanted interventionist.

VALUE-ADDED PRODUCTION FUNCTION

The third and final component of our model is a simple triangle that I will introduce initially as a value-added production function given by
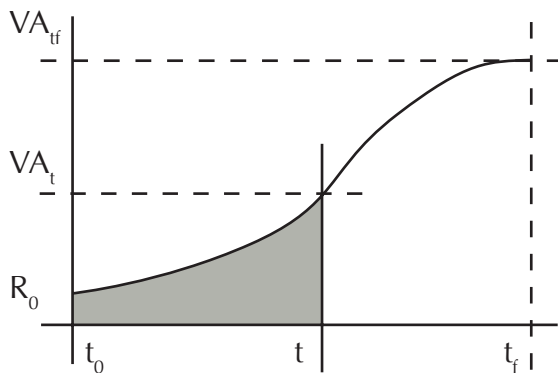
$$VA_t = VA(t_;t_f, \Phi) + R_0 \qquad \text{(equation 3)}$$

$$\delta VA / \delta t \geq 0$$
$$\delta VA / \delta t_f \geq 0$$
$$\delta VA / \delta \Phi \geq 0$$

where R_0 = the value of initial factor inputs at the time of investment
t_f = the time required to realize the final good
t = the time to a particular stage of production
Φ = technological change

Figure 3. Value-Added Production

This function captures two important features of real capital employed in the allocation, production, and distribution of final goods and services: one, the incremental addition of value beginning with the employment of natural resources and finishing with the distribution of consumptive-ready final goods and services; and two, the opportunity cost of real capital bound in time to the production and distribution of final goods and services.

In effect, when we purchase finished goods and services we are not just paying for the expended capital, but also for the sacrifices that we make in current consumption so that we can consume these goods and services at a later date. The longer the production process t_f and the more intensive the use of capital VA, the greater the cost of the finished product. Each time more value is added, the capital employed to add that value is unavailable for current consumption. It is the opportunity cost of sacrificed current consumption and the associated risks that make real capital dear.

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7   This is not an entirely true statement, for it will become obvious later on that the nature of the contract between the saver and the investor is very important when it comes to picking up the pieces after a bust.

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In figure 3 we observe that at some point t the value under the curve between t_0 and t is the value of all capital consumed in the production of finished goods and services up to point t and beginning with the initial utilization of resources R_0 at t_0. The value of this capital is valuated relative to its expected value at time t_f when the finished good and services are actually traded. Similarly, at point t_f the value under the curve from point t_0 to t_f is equal to the value of all capital consumed in the production of the finished goods and services. Only at point t_f can we know the truth worth of the employed capital. We can now write the *value of total capital* at the time of trade as

$$VTC_{tf} = \int VA(t\,;\, t_f,\, \Phi) + R_0 \qquad\qquad \text{(equation 4)}$$

such that the integral is evaluated over the interval t_0 - t_f.

Further, the value of the finished goods and services at the time they are traded is given by

$$VA_{tf} = VA(t_f,\, t_f,\, \Phi) + R_0 \qquad\qquad \text{(equation 5)}$$

Because we know both the value of the finished goods and services at time t_f and the value of all capital that is consumed in their production between t_0 and t_f, the rate of return on invested capital r is obtained as follows:

$$r = VA_{tf} / VTC_{tf} \qquad\qquad \text{(equation 6)}$$

HAYEK-GARRISON TRIANGLE

Plotting VTC_{tf}, the value under the above value-added production function between t_0 and t_f, against VA_{tf}, the value-added of all finished goods and services at t_f, obtains Garrison's interpretation of Hayek's triangle.[8] Unlike the area circumscribed by the value-added production function described above, the Hayek-Garrison triangle is empty. Moreover, the direction of increasing VTC_{tf} is now the opposite of what it was before. In effect, we only care about the base of the triangle (VTC_{tf}), its height (VA_{tf}), and the slope of the triangle's hypotenuse -- namely, the rate of return on the economy's productive capacity VA_{tf}/VTC_{tf}. Notice that what is measured along the vertical axis includes only what is actually consumed, or alternatively saved and held; it does not include what is saved and invested. Goods and services that are plowed back into the production process -- namely, real investment -- are treated as a part of the
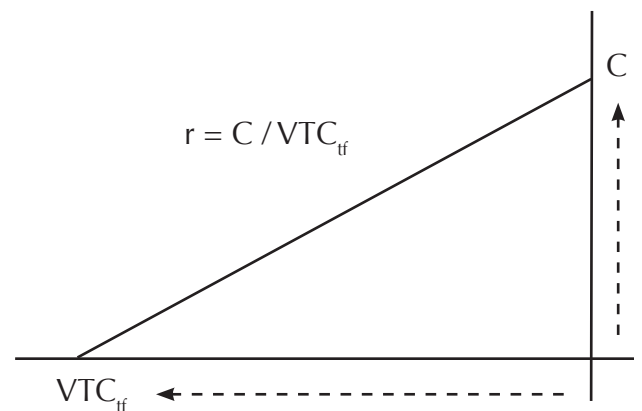

Figure 4. Hayek-Garrison Triangle

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8   In support of this relationship Roger Garrision refers to the notions of *waiting* and *roundaboutness* promoted by Gustav Cassel and Eugen von Böhm-Bawerk, respectively. See Roger W. Garrison. 2002. *Time and Money: The Macroeconomics of Capital Structure*. New York: Routledge, p. 49) . Hayek's triangle was first published by Hayek in his book *Prices and Production* in 1931. It appeared again later in 1935 in the second edition of the same work.

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cost of production and are included along the horizontal axis. As a result, the value VA_{tf} can be relabeled C, as it represents only that portion of final goods production that is either consumed or set aside in the form of uninvested or protected savings at time t_f. Accordingly, we may rewrite equation 6 as follows:

$$r = C / VTC_{tf} \qquad\qquad \text{(equation 7)}$$

THE GARRISON TRIAD -- THE ZERO GROWTH SCENARIO ONLY

The Garrison Triad is a general equilibrium model that combines the production possibilities frontier (figure 1), the savings and investment market (figure 2), and the Hayek-Garrison triangle (figure 4) into a single macro-economy whose sole output is C. The triad is very useful for several reasons. It demonstrates clearly the fundamental weaknesses of Keynes' *General Theory*, provides a framework for understanding the cause of economy-wide boom and bust cycles, and reinvigorates the saver-investor and entrepreneur as the true source of employment opportunity in a free market society.

Figure 5 depicts a zero-growth national economy in full employment equilibrium. Income earners and entrepreneurs have met 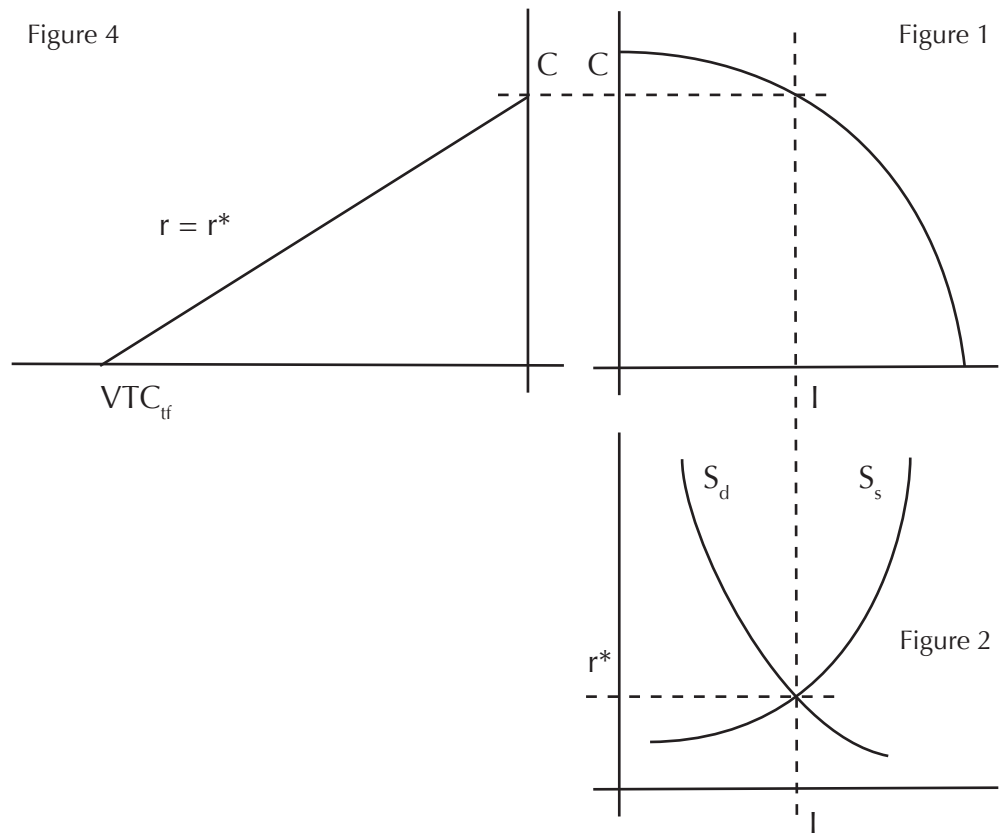in the savings and investment market (figure 2) where they agreed, separately in contract and jointly as a market, on a desired national rate of return equal to r* and some level of investment I necessary to maintain that return. This agreed rate of return yields sufficient total production to supply an amount of finished goods and services for current consumption C and replacement capital I sufficient to maintain the current level of total production (figure 1). At this rate of return the value of total capital employed between t_0 and t_f is evaluated at VTC_{tf} (figure 4).

Figure 5. General Equilibrium Model (Garrison Triad)

THE GARRISON TRIAD -- A SUSTAINABLE GROWTH SCENARIO

Having assembled the three components of the Garrison triad let us now put it to work. In figure 6 in-

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come earners and investors have agreed that sustainable growth is in their best interest and are willing to make the sacrifice in current consumption necessary to achieve this growth. This decision results in a rightward shift in the supply of savings, downward pressure on the rate of return, and an increase in investment beyond that of simple replacement capital. These actions are observed in figure 4 of figure 6. The associated changes in consumption, investment, savings and rate of return brought about by the sacrifice in current consumption are indicated by the superscript 1. The arrow in figure 1 indicates a change along the production possibilities frontier. The arrows in figures 2 and 4 depict movements of the curves. Once the new investment is realized the production possibilities frontier shifts out (not shown) and figure 6 appears as figure five, but with a higher level of savings, consumption, investment, and invested capital. The rate of return on capital returns to its normal rate.
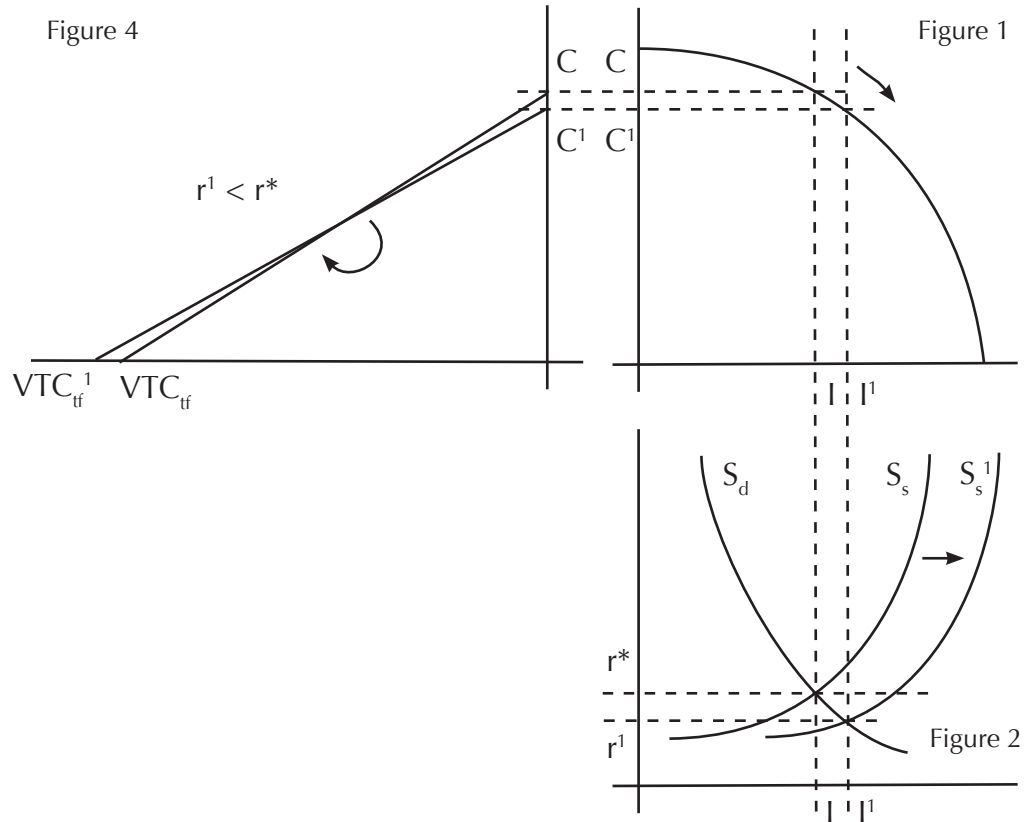
Figure 6. Sustainable Positive Growth (Garrison Triad)

THE GARRISON TRIAD -- AN UNSUSTAINABLE GROWTH SCENARIO

In the above scenario the decision to save and invest was voluntary and made by income earners and entrepreneurs who understood clearly that you cannot produce something out of nothing. One must set aside goods and services that one would otherwise consume to build the capital that will be later utilized to produce tomorrow's consumption. In order to produce capital the labor of workers that would normally go into current consumption is diverted toward the production of capital goods; moreover, these workers must be nourished, clothed, and sheltered even though they contribute nothing to current consumption while the capital goods and related finished goods and services are produced. Not only does capital formation take time, but once it is in place additional time is required to produce the products that depend on it for their realization.

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In this scenario we will assume, as our national governments would often have us believe, that something can be created out of nothing -- namely, by simply increasing the money supply more can be produced with no sacrifice in current consumption.

This assumption is captured by allowing the supply of savings to increase with no change in the level of current consumption. In effect, money is pumped into the system thus creating the illusion that there is more of everything to go around. What happens, in fact, is that resources are shifted out of one sector of economic activity into another, while the remaining resources are squeezed. This results in a sudden rise in economic activity that cannot be sustained (C, I^1) What is worse, workers and consumers, who are the principle price-takers in this economy are cheated by the rise in prices that necessarily results. Workers finish by working longer hours and earning more, but the value of what they earn -- namely, their pay check -- declines, and they are no better, or even worse off than they were before the money was injected. Depending on how the new money enters the system the effect can be devastating.
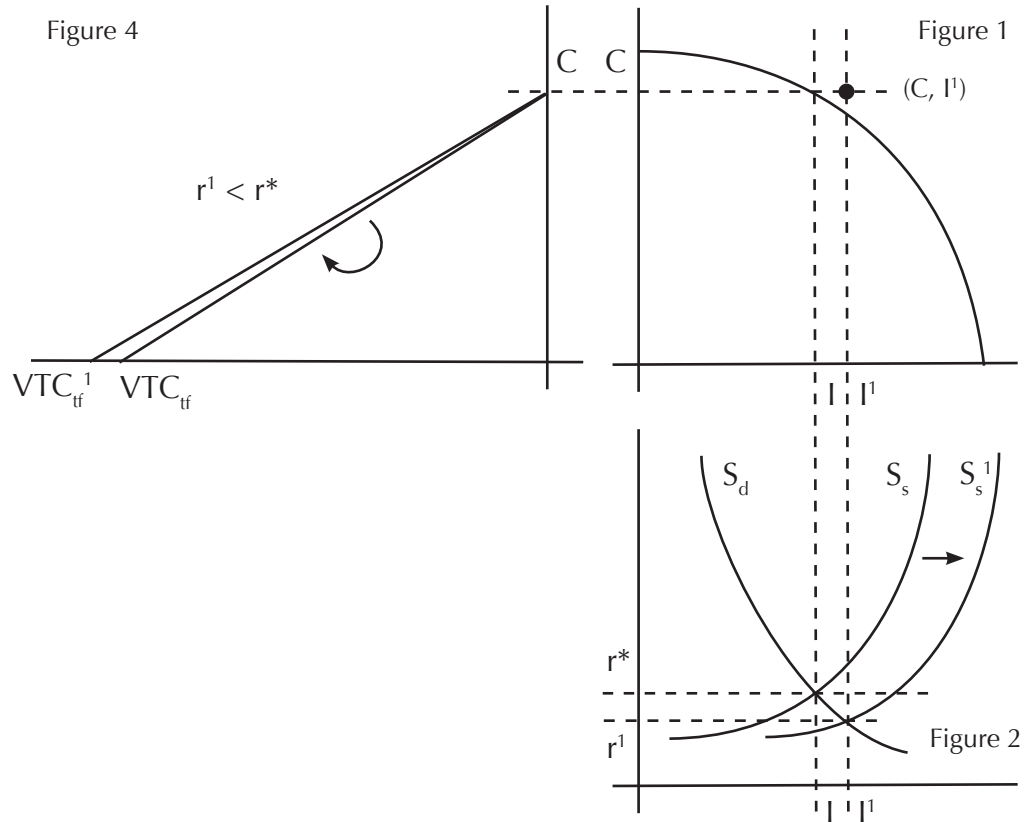
Figure 7. Unsustainable Positive Growth (Garrison Triad)

FUNDING UNSUSTAINABLE GROWTH
New money typically enters an economy via either of two channels: one, a central government issues new debt that is purchased by its central bank and then spent into the economy[9]; or two, individual banks lend, independently and simultaneously, money into existence via the fractional reserve system. In the former instance the money can be spent on current consumption or lent to firms in the form of loan subsidies in an effort to stimulate new investment. In the second instance the money is lent directly to firms

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9   In the United States the central bank is the Federal Reserve System, a private banking cartel established by Congress in 1913. The new debt is issued by the US Department of Treasury or other government agency that Congress has authorized the power to borrow.

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through common market channels for the purpose of new investment. If in the first instance the money is spent on current consumption, then it causes firms to borrow in order to produce the new real capital necessary to keep up with the new demand for final output. The higher revenue for the same production brought about by this additional demand makes the cost of borrowing at the current rate of return appear cheaper. If, on the other hand, the new money is spent directly on new investment, then it is because the government lends below the current market rate. In either case firms are encouraged to invest in projects that they would otherwise forego and are eventually compelled to abandon because of the rising cost of production brought about by the increase in demand on already employed resources. This increase in the general cost of everything is captured by the various labor markets depicted in figure 8.
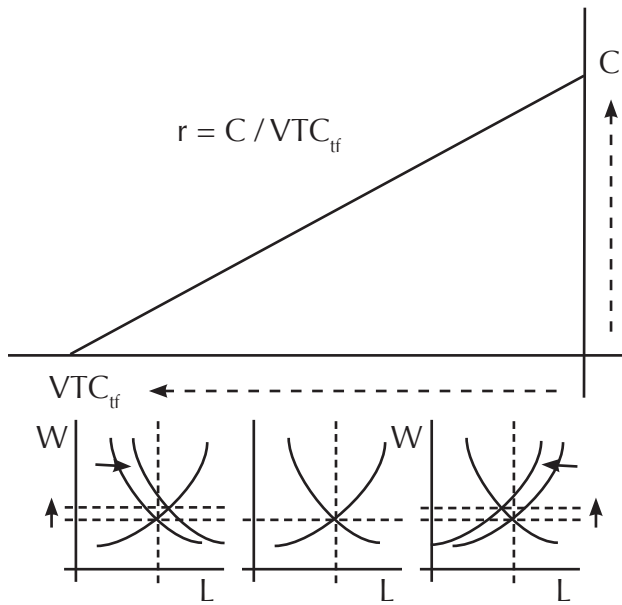
As the length of the base of the Hayek-Garrison triangle is determined by both the value of capital and the time that it is bound, its length is directly proportional to the length of the production process t_f. Accordingly, we may divide this process conceptually into different phases of production including initial, intermediate, and final. In the *initial phase* either new resources must be found that are not part of normal production or already employed resources must be transferred out of their current employment. In the *final phase* the goods and services that result from this production are distributed and sold as retail consumption. The *intermediate phase* includes all intermediate phases of production requiring both capital and labor.

Figure 8. Phases of Production

$$r = C / VTC_{tf}$$

BOOMS THAT TURN TO BUST

When new investment, spawned by the influx of new money, is undertaken, labor and other materials are drawn from the final and intermediate phases of production into the initial phase. This transfer of factor inputs brought about by the increase in demand causes a subsequent price rise of these factor inputs (indicated for labor only). Simultaneously, however, a shortage in these same inputs is created in the final and intermediate (not shown) production phases. As a result, prices rise across the board. As this general price increase is not expected by most entrepreneurs, no allowance has been made for their rise, and many entrepreneurs are forced to abandon their new investment projects due to cost overruns. As workers that had previously been employed in later phases of production now find themselves unemployed in their new higher paying positions in the initial phases, there is a shortfall in the demand for final goods and services.   As a result, inventories pile up in the final phases of production, more workers are driven into the streets, and a further drop in demand for final goods and services ensues. In short, the economy enters into a downward spiral and an economy-wide bust. Accordingly, figure 7 returns to the way it ap-

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peared in figure 5 with one important exception and its inevitable consequences -- the production possibilities frontier shrinks and there are now fewer real savings and capital available for production. What often occurs at this point is more money is pumped into the system with the same devastating results. We will return to this point later.

Easy to comprehend, but often overlooked in the Keynesian macroeconomic model is that most capital inputs are industry or sector specific, and that much of the labor force is similarly tied to its role in the development and utilization of existent capital. This means that once a new investment is undertaken the newly formed capital cannot be utilized elsewhere. Furthermore, in the absence of new technology there is every reason to believe that we actually grow poorer with each new boom and subsequent bust. In other words what we applaud as technological advancement is in reality stunted positive economic growth. The social, economic, and political consequences of creating nominal wealth that has no correspondence with real savings are not good, and our situation is growing worse.[10]

THE KEYNESIAN CROSS AND THE AUSTRIAN BUSINESS CYCLE

We are all familiar with the famous Keynesian cross, because it is the only macroeconomic theory readily available to us as undergraduate student, and it appears to be the only economic concept that most politicians understand. Let us now take this cross and insert it into figure 1 of the Garrison triad.[11]
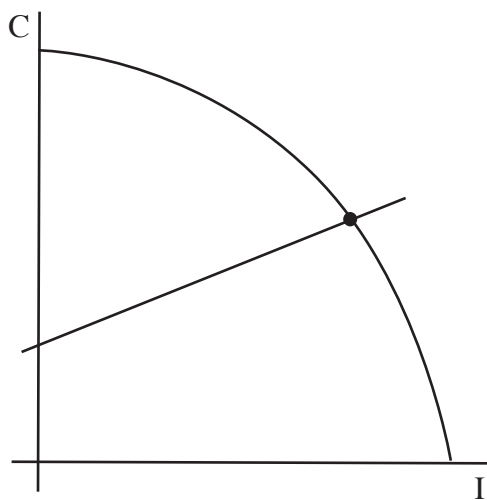

Figure 9. Production Possibilities Frontier

In quick review Keynes takes the national income identity $Y = C + I + G + (X - M)$ and combines it with the empirically demonstrated consumption function $C = a + bY$. Under the assumptions that the government balances its budget at home and maintains balanced trade with its overseas neighbors we can combine C and G as C and write

$$Y \equiv C + I \qquad \text{(accounting identity)}$$

Further, we know $\qquad C = a + bY \qquad$ (equation 8)

where
$$a > 0$$
$$1 > b > 0$$

Now, rewriting the accounting identity as an equation, substituting it for Y in equation 8, and solving for C obtains equation 9.

$$C = a/(1\text{-}b) + b(1\text{-}b)I \qquad \text{(equation 9)}$$

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10 Numerous articles have been written on the ever increasing level of debt required to obtain only small advances in real economic growth. I have written an unpublished monograph that outlines in greater detail this process and the devastation in which it results. See "Money Creation and the Revolution: Along the Path to Real Change". 2012. Unpublished monograph. <http://www2.gol.com/users/hsmr/emblem/newyear/Snake2013/_documents/revolution.pdf >.
11 op cit. Garrison, pp. 136-39.

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This equation can easily be inserted into figure 1 of the Garrison triad as a straight line. As the propensity to save b is generally positive and less than 1, the relationship between C and I is necessarily direct and opposite to what good common sense predicts -- namely, that real economic growth cannot take place in the absence of real savings. This contradiction works in Keynes' model only because the amount of investment is exogenous and decided completely independently from the amount of real savings in the economy! We have only to look at the point where the linear relationship expressed in equation 9 crosses the production possibilities frontier to see this. In effect, the Keynesian model fails at the very point where long-run sustainable growth becomes possible! Now, if the Keynesian model is useful at all, it can only be useful in an economy in which the factors of production are not fully employed. But, what exactly does it mean when we say that an economy is not fully employed?

Typically, what comes to mind is people without work. The solution to this dilemma is, of course, the creation of new jobs. At this point many people turn to government, for they have been taught that an increase in spending will stimulate new investment. Unfortunately, this is not at all certain for several reasons.

Let us first consider the source of the new spending. As modern governments typically run deficits, there is generally no pool of real savings from which they can draw. As a result, the new spending come from either an increase in debt or higher taxes. Raising taxes when unemployed income-earners are already drawing down their savings is not a good idea. Raising taxes on employed income-earners would also result in decreased savings and spending. Decreasing the available supply of savings forces up the cost of new investment. Similarly, flooding the bond market with new debt issues without an increase in the money supply would drive bond prices down, force interest rates up, and make it more difficult for entrepreneurs to borrow. Thus, neither of these methods of funding are likely to stimulate new investment. Now, what if the new debt issues were held by the central bank and more money printed? Interest rates would remain low, but prices would rise, thus making raising the cost of production. What is more the illusion of greater wealth would eventually dissipate and even more debt would have to be issued. This is pretty much where we are today.

Now let us consider the nature of alternative spending schemes, for, after all, there are two sides to every market, and it might just be possible to offset the higher costs of new investment with larger revenue flows.

So, how could the money be spent that would provide the temporary relief needed until firms -- the true sources of sustainable employment -- have had the time to adjust to the new situation. Typically, large government projects that would improve the existent infrastructure are advanced. If the planning for these projects were already completed, resources would be diverted away from areas where they were invested before the bust began, and the cost of new production in those industries would rise. This would result in a slower recovery in those industries that were producing goods and services that would still be in demand, if only the demand for them and the *real* means of payment were present. Although improvements in infrastructure are a good idea, they probably should not be undertaken until after the recovery when

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firms have already adjusted to the new circumstances. Transfer payments are another popular alternative often advanced by politicians to gain popularity for the administration currently in office. These can come in a variety of forms including unemployment insurance, increased taxes for the wealthy and tax relief for the poor, and new labor intensive government programs that could address any number of known social issues. No matter how these transfer payments enter the economy, they will surely absorb excess inventories, but there is no guarantee that they will stimulate new investment. Moreover, if new jobs are created, then they will be created in government and become an additional burden on the national economy in the years ahead. This, too, is where we are today.

HEALING THE WOUNDS OF A BUSTED ECONOMY
Indeed, the solution to a busted economy is time and charity, for what is perceived by Keynes and his followers as underemployment is unemployed workers and idle real capital -- machinery and tools that are not producing, land that is sitting idle, and stock piles of raw materials and intermediate goods waiting for production to begin anew. And then, we hear the refrain that "if only there were more demand". Now, all of this may be true, but is an increase in demand brought about by government intervention the solution?
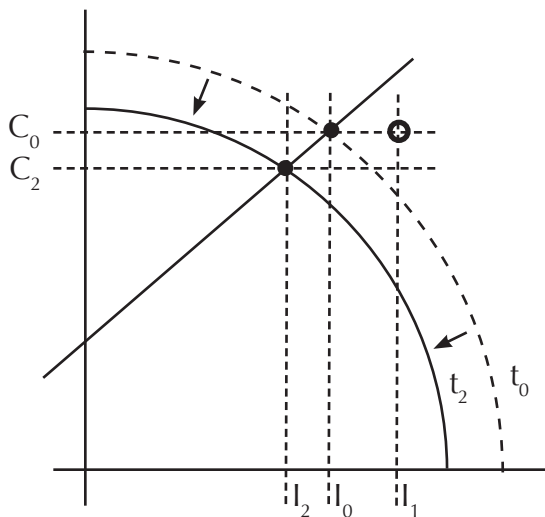

Figure 10. A Wounded Economy

In order to answer this question we must consider how the bust was brought about -- money was lent *ex nihilo* into existence -- either by a central bank catering to the demands of a spending-prone central government unable to balance its budget, by banks seeking to make a profit through the issue of low-priced debt, or by the creation of financial derivatives -- namely, new debt constructed from old debt that has yet to be repaid.

With too much money chasing after too few goods prices rose, the ability of producers to make good on their new investments became increasingly difficult, and they began defaulting on their loans. Thus, the real problem is not a lack of demand, rather it is the inability to make good on a very large number of broken promises -- à la Ronald H. Coase. In effect, there is widespread market distrust and no amount of government spending is going to remove it.[12] The trust must be rebuilt, and it must be rebuilt by those who partnered the broken promises; no third party can achieve this. In effect, what Keynes and his followers would have us believe to be underemployment is in reality full-employment with a large amount of real savings in a market atmosphere of extreme distrust. In short, all of the rules of a full-employment economy continue to prevail -- simply, the cost of transaction has risen due to a very high level of distrust. Figure 10 renders clearly this new situation clearly.

12 Ronald H. Coase once pointed out that free market agents can solve most social problems, if only the cost of transaction in solving them can be overcome. See Ronald H. Coase. 1960. "The Problem of Social Cost". *The Journal of Law and Economics*. October.

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Before we enter into the boom period the economy is fully employed at C_0, I_0. When new money is lent *ex nihilo* into the system the economy moves to an unsustainable point of new investment I_1 at the same level of consumption C_0. When the economy busts, the productions possibilities frontier shifts from its position at t_0 to its new position at t_1, and a new full-employment equilibrium substantially below that of its previous level is realized at C_2, I_2.

Now, compare this scenario with the Keynesian cross expressed in equation 9 and depicted in figure 10. What we observe (point C_2, I_2) is the important difference between an economy operating with *under-employment* and an economy operating with *full-employment* based upon widespread distrust. In the Keynesian model under-employment (point C_2, I_2) is a special case of full-employment (point C_0, I_0). In the ABC model there is no special case, the two economies are completely different. In the first there is plenty of savings and new investment; in the second there is plenty of real savings and a desire to invest them, but no avenue for investment whose way is not cluttered with distrust and unsettled broken promises.

In retrospect, the Keynesian solution depends on the same corrupt financial practices that brought about the boom that brought about the bust, and that continues to support equally corrupt political practices that would utilize the despair of a nation to advance a party's political base and its own political future by expanding the role of government and making promises of a better tomorrow that can never be realized should the nation follow down a path of endless, temporary, short-term relief. Indeed, by focusing on the bust and neglecting the boom, no permanent remedy is ever found. What is worse, the government in power when the economy finally does heal and the distrust dissipates takes credit for the recovery.

In order to understand the tragedy of the bust, one must first understand the root of the boom. What is more, one has not very far to look -- unsound money that is lent into existence via a fractional reserve system that defies all commercial common sense and whose very survival depends on government statute.[13]

CONCLUSION: RECOMMENDED CENTRAL GOVERNMENT BEHAVIOR
The best that a central government can do in times of economic crisis brought about by a boom and bust cycle is to enforce and facilitate the law and reform its financial system by removing the root causes of the boom that preceded the bust -- namely, the nefarious practice of lending money into existence and monopoly control of the nation's money supply.

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13 Jesús Huerta de Soto. 1998. *Dinero, crédito bancário y ciclos económicos*. Madrid: Union editorial. Chapters 1-3. See also, op cit. Stegemann 2011.

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