

To the Contest "Studies of Freedom"  
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## **Forced Savings and the Unsustainable Boom**

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“ It is a matter of uncertainty what part, and even whether any part (of the increase of wealth) has been produced by the addition to money, since without any such addition it might have been produced as well as by it. “  
J. Bentham

“ According to the prevailing ideology of businessman and economist-politician, the reduction of the interest rate is considered an essential goal of economic policy. Moreover, the expansion of circulation credit is assumed to be the appropriate means to achieve this goal... The ultimate cause, therefore, of the phenomenon of wave after wave of economic ups and downs is ideological in character. The cycles will not disappear so long as people believe that the rate of interest may be reduced, not through the accumulation of capital, but by banking policy. “

L. von Mises

## 1. The Macrocasm of the Problem

The aim of this section is to lay a general groundwork of the working of society and the *unhampered* market which has to economize its resources and, therefore, chooses between consuming or saving what has been produced. The rate of interest as a mechanism which equilibrates changes in society's time preference will be analyzed. This mechanism will further be related to changes in saving and investment, and their effect on capital accumulation. Once the basic ideas are laid down, the emphasis will shift to the next section which will identify how “forced savings” work and whether this particular type of saving is beneficial or not, and how it relates to the trade-business cycle.

We shall start by remembering that man has been endowed with two original factors of production, viz. nature and his own labor. Nature can be substituted with its subcategory, which has to be economized, viz. land. Thus the two original factors of production are land and human labor. Now we shall turn to the “father of capital” – E. Bohm-Bawerk – to elucidate the role of capital in production. As has been mentioned, man can combine his own labor with land to produce in two ways: either for direct consumption (for example, by catching fish with his own hands – “momentary production”) or for producing an intermediate product, which shall be called capital (instead of catching fish with bare hands, man produces a boat and a net, and only then goes fishing) (E. Bohm-Bawerk, 1930, p82). This second option was called by Bohm-Bawerk a roundabout way, thus the production of capital is significant in that it makes the structure of production more roundabout. Such roundaboutness allows for increased productivity, however, time must be sacrificed to produce the additional capital: we can quote R. Strigl (1934, p3-4) to sum up and state a general thesis of production: ” The general thesis would then read: An increase in the returns of production is not only possible by increasing the (*original*) factors of production, but also by lengthening the roundabout methods of production, i.e., by using the same number of (*original*) factors of production in such a way that more time elapses between their initial employment in

production and the attainment of the finished product. Metaphorically, this formula may be used: A sacrifice of time permits a greater output. ” (the word in italics is added by the author). The dependence on time is the main reason why the working class is so dependant on capitalists, who supply the needed capital to increase productivity and produce consumption goods faster. If, on the other hand, the workers tried themselves to produce capital goods, they probably could not survive till the end when this capital would produce consumption goods, as the subsistence fund needed for the survival would run out quickly.

The above mentioned hollistic capitalistic process can be divided into smaller categories, viz. stages and degrees (E. Bohm-Bawerk, 1930, 84). Such division allows us to identify the microfoundations of the capitalist production. We can conclude that to make a consumption good we can employ capital in various degrees of roundaboutness: that is, a year can pass for the intermediate product to produce a consumers good, or five years can pass, or a hundred years, or even a thousand. What effect the increasing roundaboutness has on productivity? As Bohm-Bawerk states, the first steps are more productive, and subsequent ones, although in absolute values are still increasing productivity, increase it at a slower rate (the derivative approaches zero as the degree of time approaches infinity). Therefore, it can be seen that the more capitalistic production is, the less of the years productive powers will be consumed the same year and the more will be employed (invested) as capital to produce consumption goods in future periods: and the higher degree of capitalism is, the more remote those future periods will be. Furthermore, on the same logic, a more capitalistic society will consume in a given year those consumption goods which have been produced by the productive powers initiated farther back in the past (E. Bohm-Bawerk, 1930, 91).

Let us now turn our attention to the graphical representation of these ideas, as depicted in Figure 1:

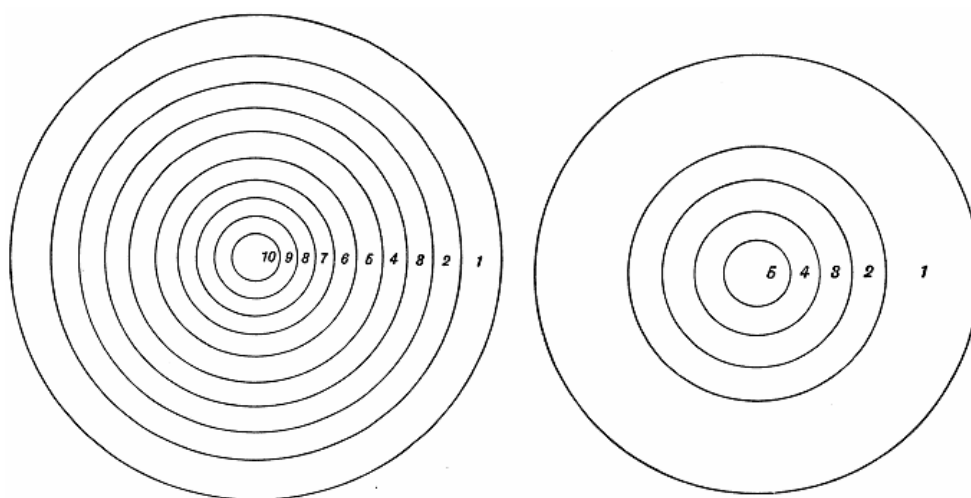


Figure 1. Bohm-Bawerk's concentric rings and productive processes (1930, p107)

Figure 1 represents the total stock of capital and the distance which exists between various stages of production and their aim – producing consumption goods; each circle represents a stage of maturity of how much time has still to pass until the particular intermediate product produces a consumption good. As Bohm-Bawerk puts it: "The outmost circle embraces those goods which will be transformed into goods ready for consumption within the coming year; the second circle represents those goods which will ripen into consumption goods in the year after; the third circle, those which will be ready the year after that, and so on." To clarify the differences between more capitalistic and less capitalistic production, two diagrams have been visualized: the first – representing ten circles and a richer economy – shows how a more roundabout production allows for more capital to be employed, viz. the last circle (labeled as number 1) is far more bigger than the last circle of the second diagram (depicting a poorer economy) which has only five circles. Moreover, we ought to note how in the second diagram the inner circles contract significantly, because, as Bohm-Bawerk states: "In a community where production is not yet strongly capitalistic, the inner circles will rapidly contract, because, in such a community, very lengthy roundabout ways of production, such as turn out their finished goods only after many years, will be rare."

F. A. Hayek in his seminal "Prices and Production" (1935), a lecture series delivered in London in 1930-31, retook and reshaped Bohm-Bawerk's ideas into what is now known as Hayek's triangles. The basic principle of the triangles is to show the inter-temporal equilibrium between consumption and production or, basically, the capital stock and production stages. Let us now take our attention to the triangle, as depicted in Figure 2:

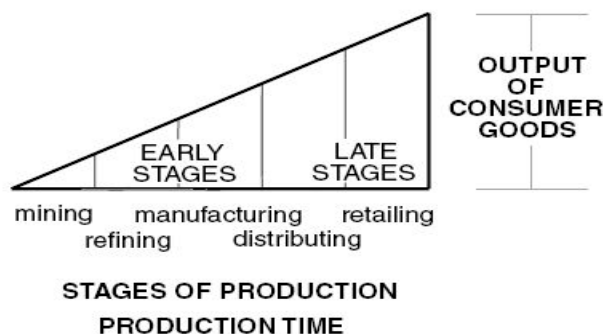


Figure 2. Hayek's triangle and the structure of production (R. Garrison, 2001, p47)

The triangle keeps account of the relationship between the consumable outputs, produced in the economy, and the time structure of production (stages of production): the consumable outputs

are illustrated on the vertical axis and the structure of production is shown on the horizontal axis. The structure of production is differentiated into early and late stages, as to retain the principles of Bohm-Bawerk's concentric rings. The vertical distances between the hypotenuse and various stages of production can be conceived as values of goods-in-production (R. Garrison, 2001, 46). In a general sense, the slope of the hypotenuse represents value added by time and factor input in a linear sense. This relationship is not fixed and can vary due to changes in inter-temporal preferences, viz. an increase in time preference would mean an increase in consumption and a decrease in production time (and a decrease of capital and investment) – in such a case the vertical axis would increase and the horizontal would contract, that is, the slope of the hypotenuse would increase. The inverse would happen when the time preference of the community decreases. This shall be illustrated in Figure 3:

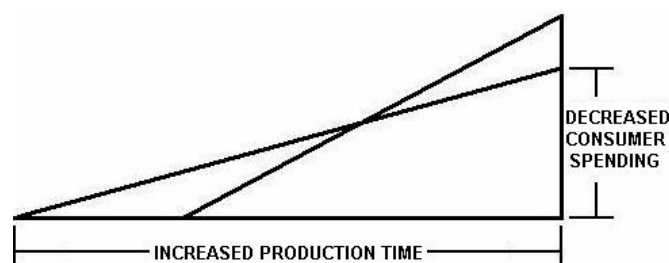


Figure 3. Changes in the community's time preference (R. Garrison, 1994)

What Figure 3 shows is how the economy adjusts to changes in people's time preference. Let us suppose that consumers become more future oriented, viz. their time preference decreases. Such a lowering in time preference consequently raises the amount that is saved in the community. All that happens is depicted in the Hayekian triangle (Figure 3) which is transformed: due to increased saving more inputs are available to the entrepreneurs and they increase the amount of investment – this is seen in the horizontal axis of the triangle, which has been lengthened, that is, the period of production has been increased. Moreover, the fact that savings have increased means that the community decided to consume less – thus the vertical (the consumption) axis of the triangle decreases. Thus, we see how the unhampered market adjusts to changes in consumption by either increasing or decreasing investment and the stages of production. R. Garrison summarizes the shifts in the triangle focusing on the changes in the hypotenuse: "The height of the hypotenuse of the reconfigured triangle measured at each stage of production along the production-time leg shows (1) that the demand for input is reduced in the final and late stages of production, (2) that the extent of the reduction diminishes as stages further removed from consumption are considered, (3) that stages remote from consumption experience an increased demand for input and (4) that stages of

production more remote than had existed before have been created anew. The slope of the hypotenuse, now less steep than before, reflects a lower rate on interest corresponding to the reduced time preference. ” (R. Garrison, 1994)

The next – and last – step of the analysis in this section shall turn upon the aspect of capital formation in an unhampered market and the equilibrating function of the interest rate as a mechanism which readjusts and unifies the supply of and demand for capital, and this will set the stage for our analysis of the trade cycle in the next section. We shall start by supposing that the community decided to save more: first of all, saving more means the curtailment of present consumption, but only of present and not future consumption, as some like to object that by saving people do not stimulate the economy (we shall leave aside hoarding in this context), but such objections are false, because, as already mentioned, the savings do not stimulate only presently, but people do not renounce consumption at all, as the reason they save is that they want more consumption in the future. Thus the entrepreneurs are guided to expand the period of production, because they now that in future the increased supply will meet with an increased demand. Let us now track the behavior of the rate of interest, which sends important signals to entrepreneurs: as the price system sends signals about changes in consumer preferences and, thus, changes in demand, the interest rate signals, whether consumers need immediate want gratification or want gratification in a remoter future.

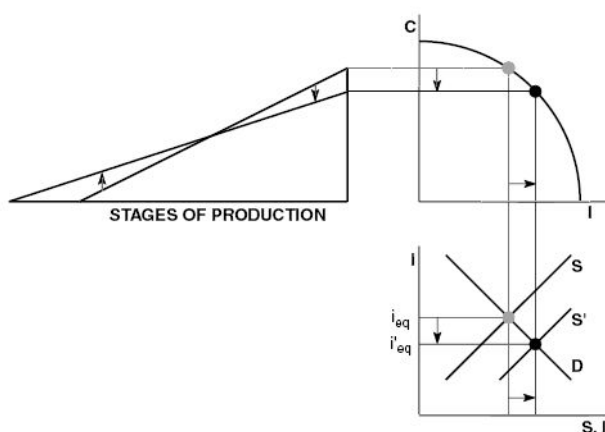


Figure 4. Changes in monetary and real sectors of the economy (R. Garrison, 2001, p62)

We shall refer to Figure 4: the figure depicts the above mentioned Hayekian triangle, but this time two new diagrams are introduced. The diagram next to the Hayekian triangle is the Production Possibilities Frontier (PPF), which shows the possible bundles of consumption and investment given high resource utilization. We have to notice that the trade-off between consumption and investment is negative and has an increasing negative slope the bigger the

investment becomes, because more goods better suited for one output are being devoted to the other output (R. Garrison, 2001, p40). The diagram beneath depicts the loanable funds market and shows the equilibrating rate of interest, which balances actual savings with investment. Thus, the unhampered market reacts like this to increased saving: the slope of the hypotenuse decreases, which means that the stages of production are being lengthened while present consumption decreases. Therefore, the equilibrium point on the PPF shifts to the right side indicating that there is more investment and less consumption. Moreover, the loanable funds market also reaches a new temporal equilibrium, as the supply curve shifts to the right indicating an increase in saving. This increase in saving lowers the interest rate and, thus, the entrepreneurs can borrow more funds and increase the investment in the economy (hence,  $S=I$ ). To summarize, we can see how vital of a mechanism is the interest rate, which sends signals about changes in consumption and, thus, in saving. Usually, no loss of total production occurs, because the resources can be shifted either to early or late stages of production depending on the time preference of the individuals in the society.

## **2. The Microcosm of the Problem**

Having laid down the general foundations how the unhampered market works, we can turn our attention to the problem, which is to identify the main causes of economic cycles. In this section we shall analyse the doctrine of "forced saving" and its impact upon economic fluctuations. The main aim shall be to identify whether artificially induced capital accumulation is sustainable and then to propose what can be done to eliminate them.

As early as the beginning of the 19<sup>th</sup> century classical economists were interested whether an addition to the money supply could increase capital and, thus, future wealth. Hayek (1935) notes that J. Bentham and T. Malthus raised questions how the distribution of the circulating medium would affect the productive powers of the country, the latter inferring that if the new banknotes or chequing accounts reach the hands of producers instead of consumers then there will occur an increase in capital and future production. Thus this was called "forced frugality", because a smaller amount of resources was consumed and a bigger amount employed as capital.

Although, at first glance, it seems that the additional issuance of medium of exchange and its substitutes are beneficial, especially when handed to productive powers, to society, we shall show that such action creates an unsustainable restructuring of resources, viz. a boom and bust scenario. The "forced saving" forces the economy into disequilibrium and, therefore, has to be abandoned, because natural powers (consumer preferences) are trying to shift it back to equilibrium.

Anytime and anywhere the prevailing ideology becomes related to credit expansion, the existing authorities start a route of creating artificial wealth. The belief that accommodating the terms of trade is the right policy urges the monetary institutions to expand the money supply. In order to loan out the additional money supply the rate of interest needs to be lowered below its natural level. We shall stop here and define the natural level of interest rate, as introduced by the Swedish economist K. Wicksell in the end of the 19<sup>th</sup> century. His opinion was that there would settle an interest rate – which he called the natural – if all lending and borrowing were done in real capital goods, that is, without the intermediation of money. Hayek (1935) summarizes the natural rate saying that: ” Wicksell’s theory is as follows: If it were not for monetary disturbances, the rate of interest would be determined so as to equalize the demand for and the supply of savings. This equilibrium rate, as I prefer to call it, he christens the natural rate of interest. In a money economy, the actual or money rate of interest (“Geldzins”) may differ from the equilibrium or natural rate, because the demand for and the supply of capital do not meet in their natural form but in the form of money, the quantity of which available for capital purposes may be arbitrarily changed by the banks. ” Let us now return to the analysis of the expansionary policy. As was mentioned, a decrease in the interest rate below its natural level is needed for the new money to be made as loans, but we have to keep in mind that the absolute values of the nominal (market) interest rate do not have to be falling to indicate that credit expansion takes place (although this is the usual case), as the nominal interest rate could be staying the same or even rising, but still falling behind the natural rate. All this means is that investment exceeds real savings. We shall illustrate the process graphically in Figure 5:

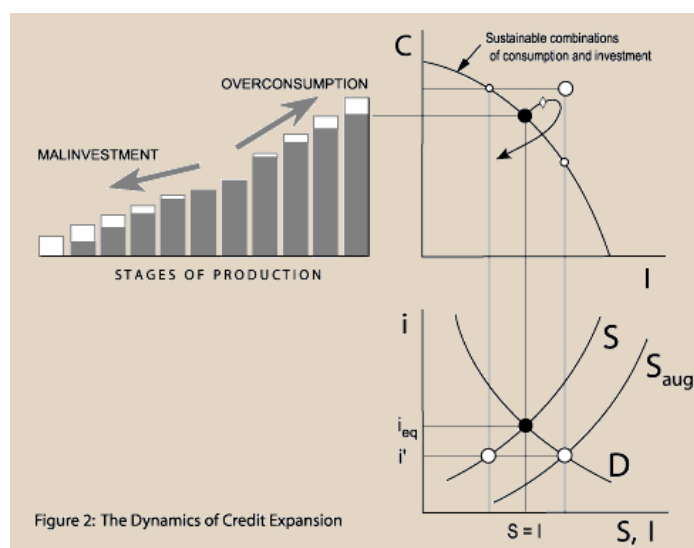


Figure 5. The dynamics and effects of credit expansion (R. Garrison, 2004)

The effects of increasing the money supply either by the Central Bank (by increasing commercial banks' excess reserves or buying Treasury securities – "monetizing the debt" – or through various other open market operations) or the banking system (by creating demand deposits either through fractional reserve banking or by giving various loans in chequing account form without money backing them), as shown in Figure 5, take such a route: the loanable funds market sends a signal to entrepreneurs by decreasing the interest rate (in the figure in absolute terms) that more savings are available, thus, the supply of loanable funds shifts rightwards. But the reality is that savings remained the same, therefore, to accommodate the new, lower, interest rate additional money has to be issued into circulation (or uncovered chequing deposits created). The entrepreneurs and their calculation have been deceived and, as Mises (1998, p550) states: " the drop in interest rates falsifies the businessman's calculation. Although the amount of capital goods available did not increase, the calculation employs figures which would be utilizable only if such an increase had taken place. The result of such calculations is therefore misleading. They make some projects appear profitable and realizable which a correct calculation, based on an interest rate not manipulated by credit expansion, would have shown as unrealizable. Entrepreneurs embark upon the execution of such projects. Business activities are stimulated. A boom begins. " Moreover, as the interest rate decreases, people, according to their time preferences, decrease their savings and increase their consumption, as to correspond to the new, lower, interest rate. This process is depicted on the hollow circle on the initial supply of loanable funds curve. Thus, not only *forced savings* occur, but *overconsumption* takes place simultaneously. The PPF due to increased investment ought to move clockwise as to show more investment and less consumption, but the overconsumption means that the curve ought to move counter-clockwise. Therefore, these conflicting forces are: " pushing the economy neither clockwise nor counterclockwise along the PPF but rather are pushing in a direction nearly orthogonal to the frontier. The levels of consumption and investment consistent with the two hollow points in the loanable-funds diagram correspond to a hollow point that lies beyond the PPF. The very nature of this hybrid effect helps to explain why credit expansion has such strong political appeal. " (R. Garrison, 2004). Reallocation takes place in the structure of production, as resources are being shifted both to the early and late stages of production ignoring the maintenance of the middle stages (the augmentation of capital in these stages is depicted by additional white rectangles in the Hayekian triangle). We have to take attention of the fact that the middle stages are under-maintained, as this is important. According to R. Strigl (1934, p130), the production of consumers goods and subsistence means has to be increased quickly, but there aren't any funds to achieve this, therefore: " capital goods which are tied up in perhaps the second or third stage of production on their way to maturing into consumer

goods will be withdrawn from these stages and transformed on a shorter path into finished subsistence means. ” This means that in the short run both lengthening the structure of production and overconsumption seem possible, but: ” The result will be that for the following period of time an expanded supply of subsistence means may exist, but that later on there must be a *greater lack of these*. ” The boom has started and the length of it will depend how much and for how long the money supply is increasing. The new money reaches the market and prices start to rise – the rise will depend on the increase in the money supply and increase in productivity (the latter offsetting price increases). For example, we can refer to Figure 6 to see the increases in the money supply in Lithuania, USA and Euro Area in the period 2000-2009:

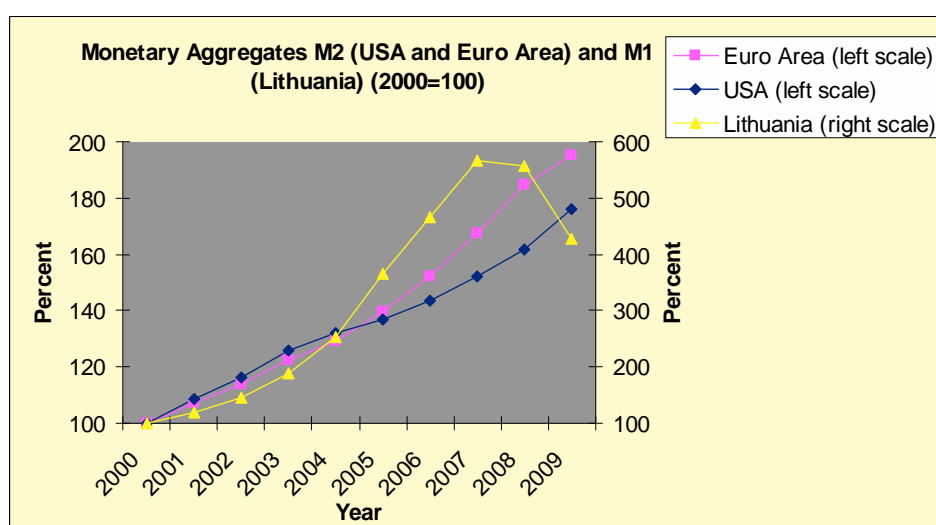


Figure 6. The ideology of our monetary authorities during 2000-2009 (Sources: Central Bank of Lithuania at [www.lb.lt](http://www.lb.lt); Federal Reserve Bank of St. Louis at <http://research.stlouisfed.org>; European Central Bank at <http://sdw.ecb.europa.eu/home.do>)

As the figure reveals, both Euro Area and USA undertook a similar growth in the money supply (during the eight years between 2000 and 2008 Euro Area experienced a compounded annual growth of 8,7 percent in its money supply; USA experienced a compounded annual growth rate of 6,2 percent), but Lithuania grew it’s monetary aggregate M1 at a compounded annual rate of 24 (!) percent. Therefore, it is not surprising when the inflation rate both in USA and Euro Area during 2000-2009 achieved a peak of 5-6 percent compared to a peak of about 13 percent in Lithuania. The futile arguments that prices in Lithuania rose do to increasing oil prices are not right, and, moreover, we ought to say that oil prices rose because of the increasing monetary aggregates and an increased demand in the early stages of production.

Having looked at an empirical example, let us now return to our analysis of ”forced savings” which, as has been noted, is accompanied by overconsumption. Another fact has to be noted why

this is possible: during the boom phase, probably due to the overall positive psychology or the so called "animal spirits", the unemployment rate may fall below its natural rate, also, workers can decide to work overtime and during weekends, some may decide not to retire, moreover, capital maintenance can be postponed and the plants and machines can be kept running longer hours than was intended (R. Garrison, 2004). This allows for the unsustainable combinations of consumption and investment to occur during the boom.

But can the projects, undertaken in the early stages of production and the lengthening of the period of production, be completed? Can the boom go on indefinitely? A little note about expectations: L. Lachmann (1943) raised a question why do the entrepreneurs always borrow when the interest rate is artificially decreased below its natural level. It seems that they should have learned from past mistakes and ought to distinguish when credit is created artificially, as to avoid once again making mistakes. Thus Lachmann introduced the concept of elastic and inelastic expectations and stated: "if banks are to succeed in altering the long-term rate of interest, expectations have to be very elastic. Seen from this angle, the Wicksellian theory appears to be based on a very special assumption, viz. of a capital market without a very strong mind of its own, always ready to follow a lead on the spur of the moment, and easily led into mistaking an ephemeral phenomenon for a symptom of a change in the economic structure. Without fairly elastic expectations there can therefore be no crisis of the Austro-Wicksellian type." Some time later Mises replied stating that businessmen have to be economists if they want to identify whether the lowering of interest is natural or artificial. Moreover, we can imply that inelastic expectations can be turned elastic if the prevailing ideology and public opinion are based on the belief that it is the task of banks to expand credit, which is usually the case. The relation of expectations to the trade-cycle is a complex phenomenon, thus, to interpret it we have to relate to psychology behind our behavior.

Thus assuming that entrepreneurs have elastic expectations or have turned from inelastic to elastic, we shall go on and identify why the boom is not sustainable. As Strigl (1934) points out, the consumption of capital in the middle stages can not satisfy the needed provision of consumers goods to finish the lengthening of the structure of production. What is needed is a constant supply of consumers goods which could support the original factors of production, but because capital in the middle stages has been consumed, only temporary provision is possible. As the entrepreneurs with the issued credit by factors of production, relative prices of producers' goods rise compared to consumers' goods. The profit margin in the early stages of production increases and more entrepreneurs shift their capital to these stages, therefore, the supply of consumers' goods decreases. But the mentioned overconsumption requires more consumers' goods, moreover, once the new

money turns into wages of the factor owners and workers, they spend it in the way which corresponds to their time preference. This means that people desire more consumers' goods and are willing to pay more for them. Thus funds shift from early stages to late stages, as there profit margin once again reappears bigger there. If the monetary authorities decide to counteract this behavior and issue additional credit, the entrepreneurs in the early stages can try to once again secure factors of production and to complete investments. But once the money turns into wages, once again production of consumers' goods reappears more profitable. "Distress" borrowing by the entrepreneurs begins, as they need additional funds to complete the investments undertaken. The monetary authorities can once again expand credit, but such expansion has to occur at an ever accelerating pace, therefore, meaning that the change in price inflation would occur at an accelerating rate. If it is once again decided to continue the expansion, the monetary system could be threatened by hyperinflation, as people would lose their confidence in the medium of exchange. Therefore the "cumulative process" of expansion can not continue. The rising interest rates due to distressed borrowing and the stopped credit expansion start to liquidate the unprofitable investments: it occurs that malinvestment happened. The market has to realign with the true preferences of the consumers. Restructuring of the stages of production has to occur. As is shown in Figure 5, the economy falls beneath its PPF meaning that a recession or depression occurred. "Forced Saving" did not manage to expand the structure of production the way it intended. Of course, some investments probably were finished, but a lot of them had to be liquidated and specific inconvertible capital left unutilized. Thus, we can see, that the large unemployment which occurs and the fall in the production happen, because workers have to move away from the liquidated and unprofitable investments and find new jobs. The problem is that new capital is not available, thus there a period of time has to elapse for the new capital to be saved and accumulated and the unemployed to find employment. Mises (1998, p575) admits that recovery and reallocation of capital: " can be remedied only by the accumulation of new capital and its employment in those branches in which it is most urgently required. This is a slow process. While it is in progress, it is impossible to utilize fully the productive capacity of some plants for which the complementary production facilities are lacking. "

## **Conclusion**

The analysis of "forced saving" has proved that artificial inducement to accumulate capital by expanding the money supply not only results in an unsustainable boom, but simultaneously is accompanied by overconsumption which moves the economy further out of equilibrium. It has been

shown that even if the new money reaches the productive hands, it is not possible to accumulate the desired capital unless the consumers truly diminish their present consumption and provide the needed savings. Thus, the interest rate, as a vital mechanism combining real savings with demand for capital, has to be left alone and only change when consumers change their time preference. Additional issuance of money can only result in rising prices and changes in consumer marginal preferences which can only be sustained as the increase in money accelerates. Such action can only result in an accelerating rise of prices and, if continued further, in disbelief of the monetary system. We have to understand that "the pretense of knowledge" which we erroneously think that we possess causes more harm than good and: "If man is not to do more harm than good in his efforts to improve the social order, he will have to learn that in this, as in all other fields where essential complexity of an organized kind prevails, he cannot acquire the full knowledge which would make mastery of the events possible. He will therefore have to use what knowledge he can achieve, not to shape the results as the craftsman shapes his handiwork, but rather to cultivate a growth by providing the appropriate environment, in the manner in which the gardener does this for his plants. There is danger in the exuberant feeling of ever-growing power which the advance of the physical sciences has engendered and which tempts man to try, "dizzy with success," to use a characteristic phrase of early communism, to subject not only our natural but also our human environment to the control of a human will. The recognition of the insuperable limits to his knowledge ought indeed to teach the student of society a lesson of humility which should guard him against becoming an accomplice in men's fatal striving to control society — a striving which makes him not only a tyrant over his fellows, but which may well make him the destroyer of a civilization which no brain has designed but which has grown from the free efforts of millions of individuals." (Hayek, 1974)

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