I. Several Problems of Contemporary Economic Theory

Markets of perfect competition continue to remain a skeleton, upon which all contemporary economic science is held together. The state of these markets remains stable, despite a massive amount of work being done dedicated to a more realistic model of imperfect competition. This is apparently linked to the fact that the latter defines such market conditions that impede existing resources from being distributed effectively and leaves the economy far from the limits of its productive capabilities. Moreover, monopolies, monopoly position and monopoly power has always elicited sharp rejection among the majority of economists. Therefore, it is difficult to grasp that the concept of markets of imperfect competition have played a predominate role and have occupied a central position in economic theory. It is often forgotten that a monopoly can elicit positive emotions, if one takes into consideration the J.A. Schumpeter theory.

In the Schumpeter theory, monopoly positions arise due to innovations being introduced and are temporary in nature. Adherents copy and introduce achievements of other leaders to increase their efficacy and to derive a monopoly profit. When all or the majority of producers introduce an innovation, profits dwindle, competition intensifies and the market becomes more perfect. Also, periods of perfect and imperfect competition alternate with one another. This is how uninterrupted and forward moving economic development proceeds. It is surprising that this obvious cyclical nature of such processes has not been studied by anyone and has not been linked with cycles of business activity. It should be noted that J.A. Schumpeter is associated with a category of researchers, whose works are frequently cited, but seldom discussed. Let's briefly touch upon markets of perfect competition.

Criticism of them has been linked to a significant number of unrealistic conditions necessary for the existence of similar markets. These conditions include: a huge number of buyers and sellers, the ability to freely enter and exit the market, the presence of complete information and minimal losses in looking for such information, product homogeneity and divisibility, and the absence of external effects and a growing return. Similar conditions cause the demand and supply curve for individual firms to be horizontal whereby their entire income goes to paying compensation for production costs. No funds remain for the company, profits are nullified and there is no money left for development -- all of which lead to a cessation of economic growth. Surprising is the complete lack of interest in the fact that markets of perfect competition are deeply reminiscent of markets in economic crisis, when economic growth and profits approach zero or go into the red. Moreover, efforts have been made and are being made to get around this surprising conclusion. By adding the theory of a new concept called "nominal profit" and including "entrepreneurial talent" in factors of production or in the income of the owner of the production. But, the difference between production owners and entrepreneurs on the one hand and factors of production on this other, lies in that the former receive compensation after the production process is complete and the goods are sold, and the latter receive compensation at the beginning of the production process.
This is the fundamental difference between an entrepreneur and a hired employee. If full payment of the production costs is made at the beginning of the production cycle, and no changes are made in the production process, then no funds will remain once the product has been sold and the profits will be zero. The entrepreneur is liable for the final outcome, and his income is a direct function of the company’s productivity. A high profit equals a high income, a low profit -- low income. And, if the profit equals zero, then there is no source for compensation.

Under conditions of perfect competition, the production factors use the form of production applicable to that particular level of knowhow and technology in use. Production remains stable and the economy is in an absolutely static state. Profits for an individual firm are possible only at the expense of another. If for some reason the firm reduces production output, then the price for the product will increase or decrease the cost of factors of production, since the reduction in output requires fewer costs. Reducing expenditures or increasing earning leads to profits for other participants in the market that will immediately be spent on increasing output. Output returns to its original levels, and the profits disappear again. It is important to draw attention to the fact the profits are only possible in systems that experience dynamic fluctuations.

If profit is interpreted as the difference in funds available both at the end and beginning of the production process, then it becomes clear that in a static state, profit is absent in principle. That is why profit was and is an alien subject in theories of markets of perfect competition and overall balance, and yet thrives in market conditions of monopolies and oligopolies. Attempts to escape the clutches of perfect competition are possible only when companies introduce fundamentally new production technologies and methods of management. Leaders temporarily become monopolists and earn corresponding compensation. But this process is finite. When the majority introduce innovations, the profits begin to drop steadily and the economy heads into a state of perfect competition, or, in other words, a crisis.

In conditions in which there exist natural (or unnatural) monopolies, there is no need to introduce innovations and increase the productivity of the production factors. A monopoly may turn a profit by reducing the profits of the consumers of its goods and services. Higher prices by the monopoly drive prices up on other goods and services, and inflationary processes begin to intensify. This is the price society pays for the existence of monopolistic markets. Similar thinking leads to the conclusion that the level of inflation largely depends on the quality of laws and the state of social institutions.

In a free market economy the chances of a monopoly forming are much lower than in a regulated economy. Licensing, the issuing of patents and permissions create a favorable atmosphere for the existence of artificial monopolies which have the ability to maintain high prices for its product and services. This conclusion is also bolstered by the fact that high inflation is characteristic for countries in which the problems described are very acute. Undoubtedly, inflation is related to the growth in the money supply, but the latter grows not in and of itself, but rather to a great extent, its growth depends on the quality of the institutional environment.
Practically speaking, background moderate inflation is always present and is exacerbated in periods when profit margins drop and economic growth is slow, and when the economy is approaching yet another crisis. In order to preserve their profits, companies are forced to increase prices. Moreover, the growth in production leads to an increase in demand for and cost of resources (in periods of falling economic growth unemployment falls and wages increase). This also drives up prices on goods. These issues will be discussed in greater detail below. Now it is necessary to briefly touch upon the history of economic cycles.

At the beginning of the 19th century unswerving attention was given to cycles of business activity, but this in no way means that economic crises did not occur before then. Undoubtedly, the absence of any kind of economic statistics in early days complicated the problem considerably. But, what were the historic events such as the weakening of city states, the downfall of empires, the end to slavery and the weakening of feudalism? Most historic changes are economic in nature, ineffective forms of organizing production are replaced with more effective forms. Both slavery and feudalism were in their day, extremely progressive socio-economic formations, but they basically exhausted themselves.

In terms of existing production relationships, further economic growth became impossible; the producers' (the slave owners' and the feudal lords') profits approached zero. Society was on the brink of its own production capabilities, or, using more contemporary economic lingo -- experiencing perfect competition. The crisis forced people to seek more perfect ways to organize production that would generate a real profit. Such ways were found and quickly dominated the scene since they brought proprietors an even higher profit. And, so it went until the next crisis hit, and the cycle repeated itself time and time again. Entire human history consists of uninterrupted repetitive economic cycles. Why were these cycles noticed only two hundred years ago, and why were they so tightly linked to the development of capitalism?

Perhaps one explanation is that the rates of economic development sharply increased during that period of time. Production growth rates 1,000 or more years ago represented only a fraction of a percent, and only in the 19th century, thanks to the evolution of science, technology and revolutionary changes in how labor was organized, the rate of growth grew and is comparable to the current period (several percentage points annually). Weak economic ties between countries and regions, the slow introduction of new technologies, challenges in sharing experience and knowhow led to a slow yet forward moving development over the course of a century. It took a long time for the transition to be made everywhere to more modern forms of organizing production and to the introduction of progressive technologies, and therefore the ability of any one economy to be at the limits of its production capabilities. In other words, being in a static state of perfect competition happened once in a hundred or a thousand years. It stands to note that K. Marx's economic view of history is the most significant -- possibly his sole contribution to the science of economics.

Not a single kind of private ownership was capable of creating a complex irrigation system in the Nile Valley, given the level of technological developments and labor productivity at that time in history. Only forced obligatory labor and slave labor made economic growth and development possible at that time. The lengthy duration of the
existence of slavery in America was a function first and foremost, for economic reasons. The low cost of slaves and their sufficient level of productivity made it possible to augment production volume and bring in a high profit. If one concurs with a similar view of reasons for an economic crisis, then it becomes clear that monetary theories around the cycles of business activity appear entirely dubious. Crises arose when the role of money in the economy was insignificant or was essentially absent. Tight wages and the tendency to save played a significant role in theories based on the ideas of J.M. Keynes (J.M. Keynes 1936), and could not have defining value in economic systems in which wages and savings are absent altogether.

Let us touch very briefly upon the interrelationship between macro and microeconomics. The two branches of the same science continue to develop entirely apart from one another. There are no equations that link microeconomic variables to macroeconomic variables. Consequently there are not any micro bases to explain such concepts as economic growth, unemployment, inflation and many others. Since the 1960's the question has been continually discussed as to the existence of a way to overcome a crisis in economic theory, which to a large extent, is a function of the fact that the science is split into "micro" and "macro".

Eliminating contradictions of this kind is becoming a pressing necessity in the present day. This would make it possible to free the economy of all kinds of accusations of inferiority while providing solid microeconomic grounds for explaining macroeconomic events. The time has come to discuss the connection between profit and economic growth. In what way does the "invisible hand" of the market transform profits among certain economic agents into growth and overall prosperity for others?

II. Profit and Economic Growth

If profit is defined as the difference between monies left in the hands of a company at the end of a production process and after the produced products have been sold, while the beginning production factors have been paid for, then it becomes absolutely clear the only possibility for spending the profit is to acquire investment and consumer goods. (The ability to invest money on the securities market and their derivatives will be examined later).

No other way to use a profit exists. If the profit is kept as a bank deposit it will be used by borrowers to acquire the very same goods. And in this case nothing changes. If the profit is kept in a chest, a safe or in the basement, then, while this is an oversimplified example, for the purposes of economic analysis it is probably more a question for psychiatrists. The money supply is temporarily reduced which somewhat reduces inflation. When the money is put back into the economy, the inflation grows again. However, parity between the overall profit of all producers in a closed economic system and the total economic growth will always be preserved, because the profits should be spent on additional investment and consumer goods.

If, say for some period "x" a producer's profit amounts to $110 million, and an additional product (economic growth) with a value of $100 million will be put out, then the goods will be more expensive, and the lack of parity will be eliminated through inflation. At first glance, one might think that there is one other way in which the balance between profits
and economic growth could be upset. For example, the producer is unable to sell all of his product. The reason for this may have to do with what the producer sees as low market prices. There could be a whole host of other reasons, however: the product is held back in the hopes that there will be an increase in demand and that prices will go up in the future, or the producer decides to hold on to his own goods. All of these scenarios should not cause alarm to economists; at that point the goods had been knocked out of the exchange process and do not represent any particular value. Parity between profits and nominal economic growth is preserved.

An even simpler form of parity can be observed in the economy -- when money is absent from the picture. For an economic "agent" in this case, the profit can be created only in the form of additional investment or consumer good. In the absence of money, there is no other way to make a profit. The agent could trade his additionally goods (or services) for other goods, but, in any case, absolute parity between the profits of the agents and economic growth will be apparent.

In a static economy under conditions of perfect competition, when economic growth in a closed system is absent, profit belonging to an individual agent can be derived only at the expense of another. The total profit will be equal to zero. Using the terminology of game theory, there will be a zero sum game, when the total winnings will be equal to zero. It is specifically in a static state that competition is the fiercest and the most uncompromising. For certain companies the supply and demand curve will be horizontal.

If the company makes a profit, this will mean that someone bore a loss and reduced the output of a certain product. It follows then, that the company can now buy up non-operational factors of production and offer the additional products on the market at the existing price. The supply and demand curves look entirely horizontal. For this to happen, multiple conditions for perfect competition that were discussed earlier don't even need to occur. The only condition for the existence of perfect competition worth considering is the absence of economic growth, as this particular condition is both necessary and sufficient.

Once economic growth starts occurring, competition is no longer perfect. The greater the economic growth, the tamer the competition. When there is growth, everyone basks in the sunshine. If a company uses modern technology and actively incorporates innovations, then the fruits of economic growth can be used for quite a long time. When all economic "agents" use production resources to the fullest capacity for the given level of knowhow and technological development, then the economy will approach the bounds of its production capacities. At that moment the markets enter a new phase of crisis and perfect competition.

Economic growth and profits approach zero so entrepreneurs start looking for innovations that will enable them to turn a profit, which in turn will create economic growth. It is quite obvious that the level of competition overall is characterized by the size of reverse economic growth. The greater the growth, the greater the profit and the lower the level of competition. And, this has nothing to do with the number of players on the market.

One could give examples of markets in which several producers are engaged in this sort of uncompromising competition and in which 100 producers are absent from the market. The heat of the battle depends on how the market develops and on how fast it grows. Even an
absolute monopoly can't turn a profit when its consumers are lacking, economic growth is nonexistent and profits are zero. In this situation it would be impossible to acquire any additional funds. The sole possibility for making a profit is to increase productivity and reduce costs. The effects of perfect competition would be utterly and completely felt by a monopoly.

Just like other producers in other markets, it would be forced to seek and introduce innovations that would allow it to turn a profit and continue to grow. It is true that a monopoly also has the ability to bring in other funds. Without making a particular effort, it can take advantage of the economic growth in the markets of its consumers. Without increasing production and without improving productivity a monopoly can still get its piece of the pie. In this case the only hope is linked to other products showing up in the market that replace those of the monopoly. If the price of the replacement goods turn out to be acceptable to the consumers, then the monopoly steps over into the competitive market having a positive impact on the efficacy in which resources are distributed.

Let us take a closer look at the issue of parity between profits and economic growth. And let's start with a simple example and then turn to an analysis of the production functions of a specific company and the economy in general under conditions of economic growth and then the lack thereof. The example is a market in which three producers are interacting with each other. For simplicity's sake, let's suppose that each of them is using one factor of production (labor and capital) as one unit. The use of several factors would not change anything substantially in the discussion, but might serve to complicate the explanation. Therefore, let's just use one factor of production. Given that in economics, relative price, not absolute price, is what is important.

Let us assume that the price of the end product is constant, but the price of the production factor varies. The production function for a certain company could be represented in the following way:

\[ pq_i = w_i l_i \]

where \( p \) – is the price of the good, \( q_i \) – is the quantity of the good being produced by each firm, \( i \) – is the number assigned to the company (1, 2, 3), \( w_i \) – is the price of the production factor, \( l_i \) – is the quantity of the production factor (in our case \( l_1 = l_2 = l_3 = 1 \)). In a state of perfect competition when economic growth and profit are absent, the price of the production factor is equivalent to say 60 conventional units (\( w_j = w_0 = 60 \)). The production level of each company is 60 conventional units, and the total output is – 180. Let us assume that the first company does not want to accept the lack of profit and introduces an innovation that makes it possible to increase its output by one-third at fixed costs. Then the state of the economic system changes somewhat. The first company can turn a profit (\( v_1 \)).

\[ pq_1 = w_0 + v_1, \quad 90 = 60 + v_1, \quad v_1 = 30 \]
\[ pq_2 = w_0 = 60, \quad v_2 = 0 \]
\[ pq_3 = w_0 = 60, \quad v_3 = 0 \]
At that moment in time the total output is 210 conventional units, and economic growth is 30 (210 – 180). The producers' total profit margin and the level of economic growth are equal and are equivalent to 30 units. Further, at first glance, this parity may be destroyed since the first producer continues to make a profit, yet is unable to increase production. However, this is not the case, because the situation on the market changes with respect to production factors. The first company shifts its entire earnings to obtaining production factors. All of the monies, the 210 conventional units, are spent on purchasing three production factors, whose price \( w_{1} \) will be equivalent to 70 units. The second and third producers will start to experience losses because they cannot use the resources as effectively as the first company.

\[
pq_1 = w_1 + v_1, 90 = 70 + v_1, v_1 = 20
\]
\[
pq_2 = w_1 + v_2, 60 = 70 + v_2, v_2 = -10
\]
\[
pq_3 = w_1 + v_3, 60 = 70 + v_3, v_3 = -10
\]

Production did not change and comprises 210 conventional units, and economic growth is absent. The sum of the profits of the producers is equal to zero, and parity between growth and profits has been preserved. Next, suppose that the second and third producers do not want to accept their losses and introduce new technologies to their companies. The companies start looking like this:

\[
pq_1 = w_1 + v_1, 90 = 70 + v_1, v_1 = 20
\]
\[
pq_2 = w_1 + v_2, 90 = 70 + v_2, v_2 = 20
\]
\[
pq_3 = w_1 + v_3, 90 = 70 + v_3, v_3 = 20
\]

The GNP of the system is equal to 270 conventional units, as growth was 60, total profits equal \(-60\). Parity has been preserved. All of the resources are being used as effectively as possible, further growth is impossible. The system approaches a state of perfect competition and yet another crisis. In the next production cycle, the price of the production factor used is equal to 90 units (270/3). Production is maintained at the same level, but the profits bottom out. The market tumbles into a crisis and producers start looking for new innovations that will increase the productivity of the resources being used. The line of thinking could go on ad infinitum, to increase the number of firms, add new production factors, etc., but the overall conclusion remains the same: in a closed economic system there is always parity between the total profits of the producers and the change in GNP (economic growth).

Of course competition is not an uncompromising battle in nature. After all, crushing one's competitors does not yield obvious advantages. Increasing the productivity of all the resources being used leads to profit, which in turn is the investment the company makes in overall economic growth. Private interests lead to overall prosperity. Even an absolute monopoly is not capable of increasing profits without improving its efficacy. Everything depends on the activities of the company itself, on its abilities to introduce innovation and expand production. And only in a crisis situation when all of the companies are working at
the limits of their production capacities, does competition take on the qualities of an antagonist, when one persons gain is another's loss.

It must be noted that economic growth expressed in percentages is measured by average profit (expressed in percentages). Less profitable companies feel the approach of perfect competition. The rate of cost of resources being used leads to a disappearance of profit and the companies remaining are forced to increase their efficacy to the level of leading companies. As a crisis looms, the productivity of resources evens out and reaches a maximum for this particular level of development of production forces. Ineffective producers will be forced to become effective or will be driven from the market, yielding the resources to those who can make better use of them.

Let us take a closer look at the behavior of individual firms' production functions and at the economy in general in a more realistic scenario. We will examine two production factors -- labor and capital -- as well as a larger number of producers. For simplicity's sake, assume that the companies produce just one good. The production function will be represented in a linear way, just like any entrepreneur or accountant would look at it. Total output expressed in terms of cost given perfect competition is represented by the sum of the cost of the factors of production.

\[ pQ = wL + rK \]

where \( p \) -- is the cost of the good, \( Q \) -- is the quantity of the good (this can be represented as the sum of all goods produced by the firms \( Q = \sum q_i \)), \( w \) -- is the price of labor, \( L \) -- is the total amount of labor (this can be represented as \( L = \sum l_i \)), \( r \) -- is the price of capital, \( K \) -- is the total amount of capital (this can be represented as \( K = \sum k_i \)). For an individual firm the production function in a static state looks like:

\[ pq = wl + rk \]

Expenditures (the right side of the equation) are equal to the income (the left side of the equation), there is no profit. Innovations are needed in both production and management in order to change the situation and climb out of the state of perfect competition. If this happens, then the firm with fixed costs for a certain period of time \( dt \) grows its production and turns a profit:

\[ pq + d(pq) = wl + rk + \nu \]

where \( \nu \) -- is the profit for the firm for time \( dt \). Given (2), we have:

\[ d(pq) = \nu \]

The growth of production for an individual firm is equal to the profit earned thanks to using resources effectively and productively. At the level of the whole economy we have:

\[ pQ + d(pQ) = wL + rK + \sum \nu_i \]

Given (1), we get:
Economic growth is equivalent to the total profit of the producers. Both the quantity of the good produced and its price can grow. The profit can be used either to make production investment or for consumption. How the profit is used and how effectively it is used will determine the scope of real economic growth and the level of inflation. Inflation is always present in a growing economy (Philips curve), but is more complicated than one might think. The rate of inflation depends on the actions of producers and on governments (perhaps to a larger extent on the latter). Reducing transaction losses, infrastructure development, the transparency of laws and the extent to which they are observed, strict protection of ownership rights are all capable of seriously reducing the rate of inflation. Economic growth changes prices and the quantity of resources being used, and profits are spent on their further acquisition:

\[ d(pQ) = \sum v_i \]

\[ d(pQ) = d(wL) + d(rK) \]

(3)

If production growth rates exceed population growth rates, then employment and pay rates go up. The process of accumulating capital hinders a hike in prices on that capital by the rates of economic growth. There are no limits in terms of time as to how much the use of natural resources and capital can be increased. If the price of any one particular resource rises sharply, then efforts will be made to find a replacement which generally can be found. There is only one infinite resource that cannot be replaced and that is labor. Therefore, wages and cost of living will always be on the rise. Prices and the quantity of resources being used will increase until such time when all companies introduce innovation.

From that moment on, economic growth ceases, and the economy sinks into yet another crisis. It is interesting to note, that according to equation (1) it is impossible to define production factor costs (\( w \) and \( k \)) on the backdrop of a crisis or perfect competition. We have one equation and two unknowns. Really, how much does a factory or a plant cost that does not bring in a profit, how much does land cost if no matter how we use it, if it only bears losses? In the case of economic growth the picture changes. According to equation (3), given a constant influx of

\[ w = \frac{d(pQ)}{dl} \]

Given a constant level of labor and labor costs

\[ r = \frac{d(pQ)}{dk} \]

The price of the production factor is equal to the end product of that factor. Any entrepreneur can easily establish the need for obtaining additional quantity of some resource or another. If the end product \((\frac{d(pQ)}{dl}, \frac{d(pQ)}{dk})\) is higher than the price, the a profit will result from acquiring a resource. When the end product and the price are compared, profits start to disappear and a period of perfect competition sets it.

Now we will examine under which conditions economic growth and a company's profit reach a maximum. Let \( l \) units of resource be used effectively, and every unit of
resource increases production by $p dq$. The total amount of the resource is $-L$. Growth in production leads to an increase in prices for the resource:

$$lpdq = Ldw$$

$$dw = \frac{lpdq}{L}$$

The total profit $V$ is:

$$V = lpdq - l \frac{lpdq}{L}$$

By equating the derivative of $l$ to 0, we obtain a condition under which economic growth reaches its apex:

$$l = \frac{L}{2}$$

When companies that are using only half of their available resources introduce innovation, their total profit margin and economic growth on the market reaches its maximum value. Further down the road, the market will endure a fading growth, which will be replaced with yet another crisis at the very moment that the last production factor will begin to be utilized in the most productive way.

III. Economic Cycles

Figure 1 depicts pre-tax profit data for a corporation in the USA and the annual nominal GNP increments from the years 1940 - 2008. The shapes of the curves are in many ways alike. The maximum and minimum profitability of the corporation corresponds with the maximum and minimum increments of nominal GNP. But the absolute values of profits and economic growth, in rare occasions, do not correspond. Possible reasons for the discrepancies are related to several circumstances. First, a large portion of a corporation's profit is paid into the budget of the federal and state governments in the form of taxes, which are then used for government procurements and transfer payments.
On the one hand, effective use of tax monies influences not only inflation rates, but also influences the parity of profits and economic growth. On the other hand, injecting tax payments into the economy is tantamount to a new producer of goods and services, namely the government. The taxes represent payments by corporations for a whole set of specific goods and services, which are produced by and offered by government agencies. To the government, taxes are considered expenditures, while profit is considered to be the difference between output and expenditures. Therefore, for the purposes of our analysis it is necessary to discard taxes from corporate profits and add to it the profit brought in by government entities. For a number of understandable reasons, doing something like this is extremely problematic. Secondly, inaccuracies in the definition and understanding of economic profit creates a whole host of problems.

If one considers the fact, that many financial reports are off by a margin and do not reflect the truth or even present excessive optimism, then the problems become even greater. Moreover, profit includes those funds that were obtained from securities trading, and the cost of these securities does not take GNP into account. Dividing the economy into two sectors -- the real and the financial - also poses challenges for analysis. The profits of the producers can be directed to the financial sector, and in that case, one should bear in mind that some monies have left the production sector, hence leading toward a kind of drop in the level of inflation.

On the other hand, monies from the financial market can be shifted over to the real sector. In this case, inflation rises in the production sector. It is obvious, that this issue requires further analysis and discussion.
Figure 2 depicts the changes in GNP in the USA (in percentages), shifts in unemployment (in percentages), and inflation (in percentages) for the period from 1965-2002. Intense inflation at the end of the 1960's that elicited much strife and lively discussion, was an entirely natural occurrence. When economic growth was experiencing a downturn, when companies' profit margins were sinking, and the competition for resources became even fiercer, companies had no alternative but to raise prices on their products. Lines of credit that had been obtained during a period of high profitability, had to be paid back.

All of these things drove prices even higher, inflation rose, but unemployment levels dropped, because competition for resources was intensifying, including labor resources. That is what always happens when the economy is in a downturn and is approaching yet another crisis (1962-1970, 1973 – 1975, 1978 – 1981, 1986 – 1991, 1999 – 2001, 2006 – 2008).

As seen in Figure 3, inflation and unemployment levels behave in a particular way in these periods: unemployment levels are again proportional to inflationary levels. But, if you study a similar relationship over a longer period of time, then nothing can be said about the way in which these two indices behave. After coming out of a crisis, when the productivity of the resources being used sharply rises, unemployment remains at a fairly high level and can even increase. But this isn't the case for very long.

After production and management innovations have been injected by the majority of companies, competition in the market intensifies and the prices for resources and the wages
for hired workers creeps upward, while employment increases. As seen in Figure 2, not every drop in growth ends up with a crisis. Long term, stable development in the 1950's and 1960's was linked to an unusually lengthy period of time when a wide variety of new technologies appeared, along with the creation of a host of entirely new goods and services. Stable development in the 1990's was clearly linked to the growing use of computers in production, as well as the arrival and development of the Internet and the creation of cellular communications.

These new inventions markedly increased labor productivity, decreased expenditures, and improved management. When the majority of companies began employing these existing innovations, the profits started to drop, meaning that economic growth was again on the decline. The economy again approached its limits of productive capabilities. And, the question arises: why is it that at this particular moment of new technologies and new management solutions appeared and were injected into the economy? The answer seems to lie in the following.

First, significant innovations do not appear every day. Time is needed to develop them, introduce them and test them. Second, when there is economic growth there is no need to inject new technologies, because companies are already making a profit as it is. Injecting innovations takes money and a certain amount of risk. When there is growth, all of the funds are directed first and foremost toward acquiring additional resources and in expanding production because it will guarantee a profit. And, only when the profits dry up do the entrepreneurs start thinking about ways to improve productivity. There is a mechanism called eternal incoming development built right into the economy. All companies use existing resources to the maximum, then the market reaches perfect competition, and profits and economic growth drop down to zero. The only escape from this situation is to increase productivity of resources, or, in other words, inject innovations. This mechanism does not only work in a market capital environment. It worked under slavery, feudalism, and it has even worked under socialism. It even works on the level of the animal and plant world. The inter- and intra-species' battle leads to the appearance of entirely new properties and species, enabling adaptation to any kinds of conditions in life, developing qualitatively and increasing quantitatively.

What is unique about today's crises is that they are global in nature -- something that did not exist in the past. The transition of many country and regions into a phase of capitalism or feudalism took place at different times. The flourishing and downfall of cities and governments of the ancient world did not happen simultaneously. Nations and regions experiencing economic prosperity expanded and grew rich at the expense of many successful neighbors.

Toward the beginning of the 19th century, economic ties between nations grew significantly tighter and capital flowed relatively freely from one region to another. First and foremost, this was the case with North America and Europe, while a little later Japan joined the band wagon. The economies of nations opened up: goods, services and information flowed freely, production technology and management became accessible to all. How did this impact rates of economic development? They evened out, growth and decline happened more and more
simultaneous with one another. This happened for the very same reason that profitability of individual industries evened out within one distinct country or region.

If an individual industry develops rather quickly, then it reaches its phase of decline in economic growth faster, and the company's profits begin to drop. Therefore, capital will be injected into those industries that are in the growth phase, or that have already reached their maximum growth. Profits in those industries will be significantly higher and the funds invested will yield a greater return. The appearance of capital stimulates growth within the industry, and, with ever increasing speed, the industry approaches the phase in which economic growth fades and in which the company's profits drop steadily.

It is in this way that indices of economic growth of various countries and regions even themselves out. Therefore, the countries end up in a state of crisis and perfect competition at the same time, and the crisis is now global in nature. The reason becomes obvious as to why poor countries that have opened up their borders for foreign capital are experiencing faster rates of economic growth, while countries with closed economies (the Soviet Union and Eastern European Nations in the 20th century) are experiencing crises at the very same time when the rest of the world is flourishing.

It is clear that it would be just as strange to say that a crisis has occurred due to poor decisions and action on the part of financial institutions or government, as it would be to accuse birds of flying south as winter sets in. Crises are unavoidable, and, in fact, are actually necessary evils. Their presence drives producers to actively search for and introduce innovations which would be capable of significantly increasing resource productivity, making way for a rise in profits and an expansion in production. On the other hand, the economy can avoid a crisis if entrepreneurs notice earlier on that the economic growth is starting to slow and that they need to get a jumpstart on finding ways to increase the efficiency of production. In that case, the economy would engage before growth and profits disappear. A state of perfect competition will not begin to happen and companies who are leaders will begin to make a monopoly profit that will cause others to follow them in step. This path is possible, if one properly interprets the nature of a crisis and does not blame consumers for excess caution or for increasing savings, but rather blames the producers for erroneous forecasts and overproduction.

IV. Rent and Interest

The contemporary theory of rent and interest presents a wide array of material deserving of detailed discussion. It would be impossible to address such a discussion in the framework of this particular article, and frankly it probably would not make a lot of sense to do so. It would be much more productive to discuss the concepts of rent and interest in light of the proposed link between profit and economic growth in a closed economic system.

It should not be forgotten that many share the opinion about the close relationship between interest and the average profit margin of economic agents. Indeed, an entrepreneur receives credit in the form of money or material resources, organizes a production process and within some period of time extracts some kind of profit. A portion of the profit or in an extreme case, the entire profit can be paid out as interest, if the loan was issued in the form of money, or in the form of rent, if the loan was issued in a non-monetary form. It is clear that
there is no radical difference between the concepts of rent and interest. Rent is the interest paid for credit received in the form of a material resource (land, buildings, production facilities, materials and supplies). Rent does not have to be paid in money, but can also be paid in the form of an end product whose cost is equivalent to the size of the rent.

It follows, that rent and interest can exist in an environment void of money. Both rent and interest are defined by the size of the average profit of producers, and the profit in turn determines the scope of the economic growth. Consequently, the size of the rent and the interest is equal to economic growth, expressed in percentages. If the size of the rent does not correspond to economic growth and thereby the interest, and is considered to be lower than both of these indices, then landowners will have a more profitable alternative to leasing the land. Landowners will have the opportunity to sell the lot belonging to them, and put the money into the bank and yield a profit on the interest earned on that money.

The sale of land leads to a drop in the price for land, while rent, remaining a constant in terms of its monetary value, increases relative to the cost of the land. Thus, interest, rent and economic growth all converge and balance is restored. When economic growth is on the decline, and when the economy is moving toward perfect competition and yet another crisis, producers' real profits drop, and the real values of rent and interest also go down. The nominal value of these indices may remain stable for a longtime because of the inflationary processes that take place as the economy is slowing down and are elicited by the exacerbation of the competition for production resources. Ultimately, the economy reaches the bounds of it productive capabilities, and economic growth, profit, rent and interest disappear and become zero in value.

It becomes impossible to pay the interest and the rent, profit is non-existent, and the economy is on the decline into a static state in which the price of the good produced is exactly equal to the cost of factors of production. There is no surplus. No artificial regulation of the interest rates could be of help, and in fact would only make the problem worse. Let's imagine that if growth is dropping, interest rates would fall also with the hopes of stimulating economic activity.

It would follow a less effective producer who makes a profit lower than average on the market would gain access to credit resources. Moreover, the companies' profits that are on the brink of declining growth would drop steadily. Repayment of loans becomes problematic for effective producers, and for ineffective producers, the problem simply becomes simply unsolvable. Very soon, the economy enters yet another crisis phase and profits approach zero, while ineffective producers go into the red and the day of reckoning has come. In reality, often this is not as scary as it might seem. There is a natural market mechanism which is capable of returning the economy to a state of balance. This mechanism is inflation or deflation by which the nominal values of economic growth, profit and interest are restored. More than 120 years ago, in criticizing Marx's theory of exploitation and surplus value, Bohm-Bawerk presents an extremely germane example revealing the nature of interest.

Bohm-Bawerk believes that Marx's greatest error is that he did not draw a distinction between today's goods and the goods that will appear in the future, or between today's and
tomorrow's money. Even if the surplus value is produced solely by labor alone, then it will only appear in the world some time from now. Where is the exploitation, a worker in the present earns the entire current cost of a product that will be produced in the future. The same identical goods produced at different times are not identical because of the very existence of interest. Suppose that it takes a worker five years to manufacture a steam turbine, valued at $5,500. No objection is raised over the fact, that for five years of labor that worker should receive all $5,500. But when will that payment occur? Clearly, it will occur five years from now. The worker cannot be paid until the turbine has been manufactured and sold. But he cannot wait that long -- he needs means to survive. At the end of the first years he requests compensation for his labor. The question is, how high should the payment for the first year be in comparison to the cost of the finished turbine. Can it be equal to $1,100, since the worker completed a fifth of the work? Bohm-Bawerk says: “No”. The turbine will not be completed for another four years. Our worker will not receive the full value of one-fifth of the value of the turbine, but less than that. Adopting the prevailing interest rate at that time - 5%, Bohm-Bawerk concludes that at the end of the first year, the worker should receive about $1,000. In his argument against the theory of exploitative interest, Bohm-Bawerk used the interest norm for discounting the cost of future goods.

If one considers that in a closed economy there is parity between economic growth, profits, and interest, then it becomes apparent that nominal GNP grows at an annual rate of 5%, and the producers' profits are on average 5% of the GNP. Let's assume that the labor productivity and the output of manufactured goods increased by 5% that year. The entire profit will go to wage increases to workers. Wages should increase by no less than 5%, because the entire remainder of the consumer goods should be purchased. If a profit is made thanks to reducing capital expenditures and a better use of capital by producers, and if production levels remain the same, then the entrepreneur will immediately sink his entire profit into acquiring more capital. Investments will grow by 5%.

During the next production cycle investments will yield a 5% growth in production of consumer goods, and workers' wages will increase by the same amount. All of the goods will be purchased. Clearly, interest will be equal to the amount by which the workers' income increases and the returns the owners of production make. Therefore, this is the very reward that is needed by refusing current consumption and today's investments. No exploitation is observed, the workers are fully compensated for their labor at the front of the production cycle, entrepreneurs and production owners get their profit in the end if they use resources wisely and if they increase production. The wolves' bellies are full, and the sheep are still alive and in one piece.

V. Conclusion

Parity between total profit of the producers and economic growth in a closed economic system is the linking force between the microeconomic and macroeconomic parameters that make it possible to see macro events as a result of the activities of individual companies. This makes it possible to continue to bridge the gap between microeconomics and macroeconomics, something that is extremely useful and necessary for the development of economics as a science.
Having yielded a certain profit, an economic agent stimulates economic growth equal to the size of the profit. Hence, by following one's own personal interests, an individual can impact the prosperity of the entire society. Clearly this mechanism has been in play over the course of history of societal development and not just over the past 300 or 500 years. Striving to turn a profit is characteristic of any era or historical periods. Similar aspirations led to the development and fortification of cities, nations and empires. Economic crises have always occurred. The collapse of nations, the downfall of empires, the weakening of cities and the shifts in political and economic formations have been first and foremost a function of economic causes.

In periods of time such as these, the economy approaches its limits in terms of production capacity when all of the economic agents are working to the maximum level of efficiency for that particular level of production capabilities. Producers' profits and economic growth are at zero, and any profit of a given agent is possible only at the expense of another. Speaking in more modern terms, the markets are in a state of perfect competition. The supply and demand curves appear to the producers to be absolutely horizontal. The only way to get out of this economic situation is to inject innovations into management, technologies, and the distribution of ownership rights, which make it possible to increase resource productivity considerably.

Agents who introduce innovations sooner than others have the opportunity to use their temporary monopolistic status to turn a profit. The lack of desire to bear losses, but rather the efforts to make a profit leads to producers to the introduction of new innovations. Competition in the markets becomes imperfect and economic growth accelerates. Then, when practically everyone has introduced innovations, the economy again takes a downturn into a crisis and into a state of perfect competition.

It is namely these cyclical processes that create economic cycles. Acceleration of economic growth led to the fact that the cycles became shorter in duration and at the beginning of the 19th century very close attention was paid to them. The development of relations between nations and continents, the free flow of technologies, knowhow and capital has led to the formation of global crises. These developments do not carry any fatal threats, but rather represent a mechanism that stimulates the search for new ways to considerably increase the productivity of labor and capital. The actions of financial institutions and governments and the behaviors of consumers and producers are not the root causes of an economic crisis. The root of economic crisis is rather the artificial regulation of interest rates, which in a free market represents the rate of economic growth -- expressed in percentages. Artificial regulation of interest rates is not capable of stimulating economic growth, but rather creates additional problems.

References


