

Research Article

The Real Causes of Inflation

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Abstract: Having defined what inflation is, this study proposes some hypotheses to eliminate external and psychological factors; it also examines a closed economy. It shows that the deep cause of inflation is the out of balance relation between consumption expenditure and saving. If consumption expenditure increases more than saving, the result is an *inflation of the real economy*. If saving increase to the prejudice of consumption expenditure, the *financial markets are undergoing inflation*. The main causes of the unbalance of the relation consumption expenditure/savings are: 1) the unbalanced allotment of the benefits of the productivity increase between capital revenues and employee compensation, 2) Either the introduction of forced saving (for example: introduction of retirement funds), or the introduction of forced consumption expenditure (example: introduction of retirement by immediate repatriation of the contributions). Leverage can increase the unbalance. The first induces an inflation of the financial markets, the second of the real economy. Natural inflation of the real economy is defined depending on the relative increase of the productivity of different agents.

Keywords: Inflation of the financial markets, natural inflation, productivity increase distribution

INTRODUCTION

What is inflation? The inflation is a continuous increase of the general price level based on macroeconomic mechanisms.

In the following we resume the general views of most economists which can be found in textbooks so we do not give references.

According to the *monetarist theory*, when the quantity of money increases faster than the Gross National Product (GNP), the inflation brings back the market to equilibrium. Several well-known articles of Milton Friedman are showing the influence of the quantity of money on inflation.

Inflation by demand happens when the prices are increasing because of an unbalanced situation resulting of a too high demand compared to the supply of products or services. To reach equilibrium between the total value of demand and offer, the prices are increasing.

Keynesians are speaking of *inflation by global demand* when the increase of consumption expenditure is facing a stiff supply, when the system cannot react to the variations of the quantity of money through an increase of the production of goods or services.

Inflation produced by the increase of costs of elements entering in the prizes (raw materials, salaries, margins, etc..) is called *inflation by the cost*.

For the *Marxists*, inflation is the result of a conflict between groups in order to obtain a bigger part of the produced wealth. This case is compatible with all the others above.

The excessive increases of the quantity of money, a higher global demand than the supply and the result of conflict between groups have deeper causes. The search of these is the subject of this study. We did not find in the literature relationship between the allotment of the benefits of the productivity increase between capital revenues and employee compensation. We think that this relationship will show the causes of inflation in a new light. This is the main subject of this study.

In order to understand the relationship between the benefits allotment of the productivity and the inflation, we have to isolate the economy of other factors of inflation as external factors, money creation, government intervention and psychological factors. For this reason we define the following working conditions.

WORKING CONDITIONS

As we have seen above, the increase of the quantity of money may cause inflation (monetarist theory). This increase can be produced because of macroeconomic reasons including government budget policies, regulation policies of the central bank or may be caused by outside the country financial markets action. Social conflicts including conflicts between capital/labor or social disturbances like the one which induced hyperinflation in Germany after the First World War and the one in Hungary after the Second World War can also cause inflation.

The inflation can also be originated by an excessive outside demand (exportation), by an unfavorable modification of the exchange rates, or an

increase of the cost of raw materials caused by international conflicts. In order to eliminate these *external* causes as well as the effect of social conflicts, we will define the following conditions:

We assume the case of a State with independent currency, where the quantity of money is stable, where the income and the expenditure of the government are equal, where public and private debts are stable, where import, export and social conflicts are excluded. Psychological causes are not influencing the propension to spend or to save. We assume also that the competition on the market is close to a "pure and perfect competition".

Today, all the savings are not invested in the real economy. As Savings are equal to investment ($S = I$), the excess of savings is invested in the stock markets as capital stocks.

DISCUSSION

In such an economy, inflation can only occur when the supply of products and services cannot match

the demand. The general assumption is that a strong growth initiates inflation. This affirmation should however be moderated as if there is an increase in consumption demand, this induces an increase of productive investments. Figure 1 shows that any increase of the demand causes an increase of the prices if the supply does not change: if the demand increases, the equilibrium point moves from A to B. On the contrary, if the supply increases (thanks to convenient investments) balancing the demand, the equilibrium moves from A to C. Therefore, the increase of productive investments has to achieve an increase of the production equivalent to the increase of the demand of products or services, conserving the same prices, to avoid inflation.

An economy with zero growth, with a zero growth of the productivity will lead to an equilibrium between the income used for consumption expenditure and those intended for investment use, so between consumption expenditure and savings. This means that the

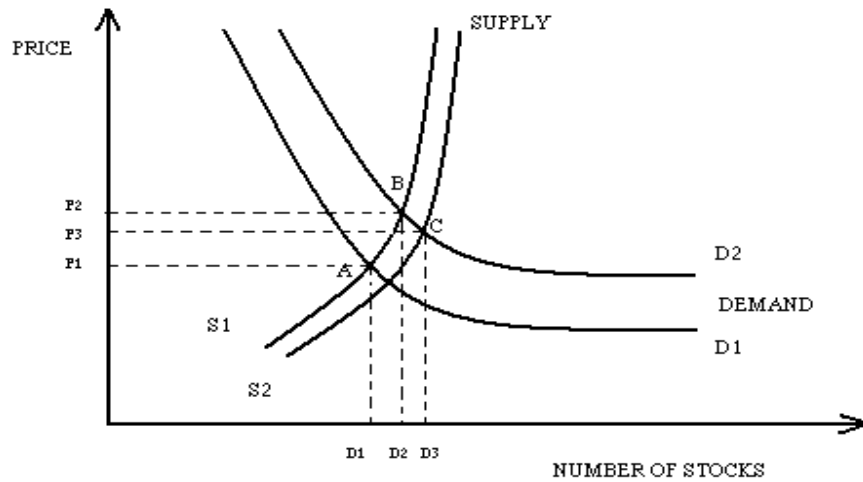


Fig. 1: Stock market prices depending on demand and supply

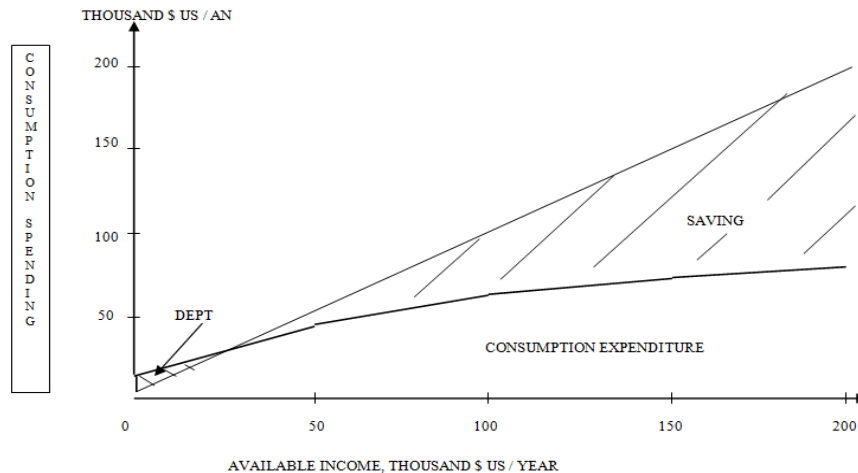


Fig. 2: Propensity for consumption

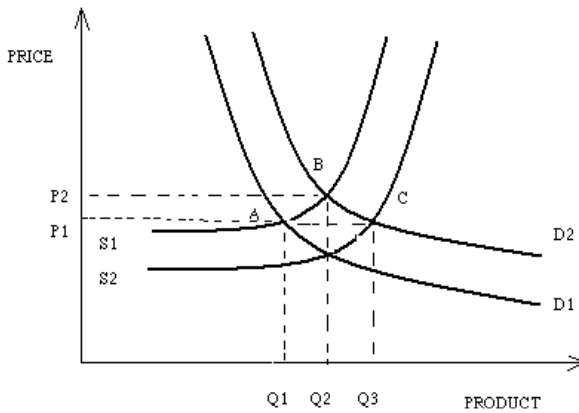


Fig. 3: Consumer products prices depending on demand and supply

enterprises are investing the savings in a manner to allow the production of quantity of products and services corresponding exactly to the demand.

Now, if we assume a regular increase of the productivity, with an increase of production per acting unit, producing a growth of the economy, *the affectation of the benefits of the increase of the productivity will decide if there will be inflation or not.*

If the income affected to consumption expenditure is increasing more than those affected to saving, the enterprises will not have enough means to invest in production to follow the demand, the prices will increase. Figure 3 shows an extreme case, where the supply does not increase following a lack of investment: when the demand increases from D1 to D2, the equilibrium moves from A to B and the prices are increasing from P1 to P2: this is inflation.

How to define the source of consumption expenditure means and the origin of saving?

If we consider the real economy, not an economy corresponding to our working conditions, it is possible to state, in first approximation, if the increase of income is coming from increase of productivity, the increase of salaries match the increase of consumption expenditure and the increase of the capital income matches the increase of saving (or investment). This is justified by the well-known relation between income and propensity to spend (Fig. 2) (Michael, 1990), which shows that the low-income persons are spending the major part of their income, whilst high revenue people are saving a higher part of their income. For those, living from the capital income, the increase of their income is used more to increase their saving, as their consumption needs are already mainly satisfied. We can therefore admit as a hypothesis that the increase of the labor income (salaries) will be used for consumption expenditure (people with capital income have often also salaries) and the increase of capital income will be used for saving.

PROPENSITY FOR CONSUMPTION

The assertion that marginal consumption expenditure is lower for the high-income people than for the low ones, coming from Keynes, is today rejected by the adepts of the neo-classical theory. We will show below that in the actual situation Keynes is right. According to Frédéric (2011), « Keynes states that the marginal consumption is decreasing with the increase of the income » and page 360: « the hypothesis that all the benefits distributed to the families by the firms are saved is close to the facts ». If we consider the extreme case of a very high income, for example one billion per year, if the person makes 10 million more, he will not spend more as all his needs are already satisfied. This means that $\Delta C/\Delta Y$ tends to zero and the curve is a hyperbole so the marginal propensity to spend is not constant and decreases with the increase of the revenue.

Friedman pretends to disprove Keynes's above argumentation using statistics comparing low rural incomes to twice higher urban incomes (Frédéric, 2011) showing a marginal propensity of consumption spending higher for the (higher) urban incomes. Such conclusion is wrong as rural people, depending more on the events of the nature do not react the same manner as urban (often-salaried) people to an increase of income. They know that a bad one often follows a good harvest, so they may save more and will not spend in consumption the excess of benefits related to the past year. It is strange how the scientific community could accept such an argumentation!

Two other deciding factors are going to sustain Keynes's affirmation:

- Retirement funds are holding a big proportion of shares and these do not spend in consumption the received dividends as most funds are relatively recent, (they do not spend yet for retirement), but reinvest in the financial markets. The above must be levelheaded by the way the retirement systems by capitalization are working. At the beginning all the incomes of those found are invested. Only after the first retirees start to receive their benefits will the incomes serve partially for consumption and it is only after 30-40 years that the main part of the capital revenue will be spent for consumption. The contribution of the new entrants will still be accumulated as investment.
- The firms are not distributing all their benefits; they are hoarding a part, to invest in the financial markets or for the acquisition of other enterprises or their own shares. They are also paying a part of the high salaries with « stock options » or using a part of their benefit as cash reserve making them independent from the banks.

We can deduct from the above, if all the increase of the capital revenues are not used exclusively for

investment, that the major part is intended to be invested and the major part of the wages is used for consumption. We can therefore support the hypothesis that a modification of the relation of salary income/capital income will modify the relation of consumption and savings in the same direction until an equilibrium between consumption demand and offer is obtained.

As we have shown above, if the benefit of the increased productivity is completely used to pay salaries, it provokes inflation. In the real economy not subject of our working conditions, it is true, that it is unlikely that any investment to increase production will not be made, because the firms will borrow to finance the increase of the capacity of production in order to satisfy the demand. In this case, if there is not enough saving, the interest rates will increase, which will at the end increase the product prices. To lend money to the firms the banks create money: the quantity of money or the circulation velocity of the money increases.

Let us consider the contrary, when the capital (the enterprises) takes all the benefits of the productivity increase. In this case, the consumption cannot increase (we excluded to go into debt). The enterprises have no interest to invest to increase production so an excess of savings will remain. The excess of savings will be invested in the financial markets. Figure 1 shows that if the demand increases from D1 to D2 the equilibrium moves from A to B and the price of the shares (or other financial instruments) will increase from P1 to P2. In fact, a small part of the investment serves for creation of new shares (productive investment), the supply increases from S1 to S2 (the increase of supply is not necessarily dependent on the demand in this case) and the equilibrium moves from A to C, corresponding to an increase of the price from P1 to P3-corresponding to inflation. In fact, financial markets are reacting according to the laws of demand and supply if the demand increases, the price increases. As the productive investment is only partial, the value of the assets increases partially only. It is inflation. Now, if we consider the real economy, outside of our working conditions, in case of excess in savings, the total of capital stock will increase and with it the capital supply, causing the decrease of the interest rates and the agents are tempted to borrow money to buy more shares as the market is bullish. This accentuates the inflation of the financial markets. Lending money, the banks are creating money and so the quantity of money increases, but in this case, this increase will not produce inflation in the real economy. If, in this case, the central bank reacts to reduce the quantity of money by increasing the interest rates, it punishes the real economy without any justification.

Note: The value of the shares depends on the dividends the shares are generating and on the growth of the value of the shares, short term for some agents, long-term for

others. The important increase of the share prices obliges the CEO's of the companies on the stock market to increase the short-term rentability of the company to the detriment of the salaries, of investment and research, with risks for the long-term expansion of the company. Therefore, the pressure on salaries increases and unbalances more the relation between salaries/capital gain (or consumption expenditure/saving) and increases further the inflation of the financial markets. Lay-offs, resulting of this policy, producing unemployment unbalance the labor market and so intensify the inflation.

STOCK MARKET PRICES DEPENDING ON DEMAND AND SUPPLY

The yearly increase (2002-2007) of about 8% of the quantity of money in the 17 European countries and of about 6% in the USA, with an average of yearly increase of the GNP of 2.6% and a yearly average inflation of the real economy of about 2.5% in the OCDE countries, with an important inflation of the financial markets (increase of the prices of shares yearly approximately 12% for Europe and 15% for the USA) are sustaining our theory (OCDE. Stat Extracts statistics 2012).

Basically, it is the lack of equilibrium between the money available for savings and the money available for consumption, which provokes inflation. If the unbalanced situation is in favor of consumption, *the real economy will undergo inflation*, if on the opposite side, the unbalance is in favor of savings *and the financial markets will undergo inflation*. This is shown by the inflation of the financial markets for the last ten years ending in 2002 by a slow crash of the stock markets. The last crisis in 2007-8 with the crash of the real estate market in the USA and other countries is also a consequence of the inflation of the capital (financial) market. The total stock market values (the market capitalization) in the United States exceeded already in 1996 the total net value of private assets corresponding to industry and services, excluding housing according to OCDE and FIBV Statistics 2012 (Fig. 4). As the production of added values of the enterprises on the stock market does not exceed 15 -20% of the total added value; we were witnessing a huge inflation. Even if the statistics of the private assets do not take in account intangible assets including patents, know-how, etc, the inflation was important, so the director of the Federal Reserve Bank of the United States publicly announced that the stock values were too high. On the other hand (1998-2007) the increase of the value of real estate was highly exceeding the increase of the cost of construction and the historical trend, which showed the evident inflation of the prices.

Bonds for France until 1989 and for Germany until 1991 are not taken in account.

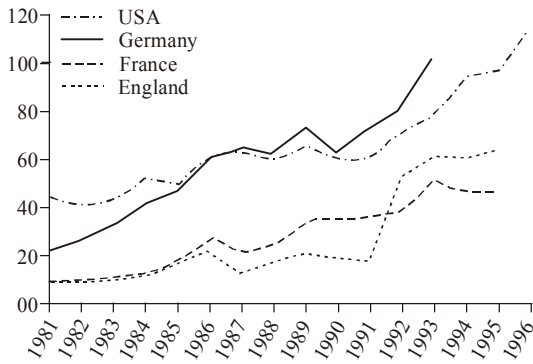


Fig. 4: Total stock market value; Source: FIBV and OCDE statistics

Net private stock include industry and services, exclusive housing. The values of the net private stock for the United States from 1994, for Germany from 1995 and for England were obtained through extrapolation.

On the other hand, *the relation of salaried income* (salaries+employees benefits as social security, retirement funds and various insurances)/*capital income* (Property and entrepreneurial income+operating surpluses of private unincorporated enterprises) did decrease substantially since 1970-80. United Nations Statistics (1992) show that the increase in productivity

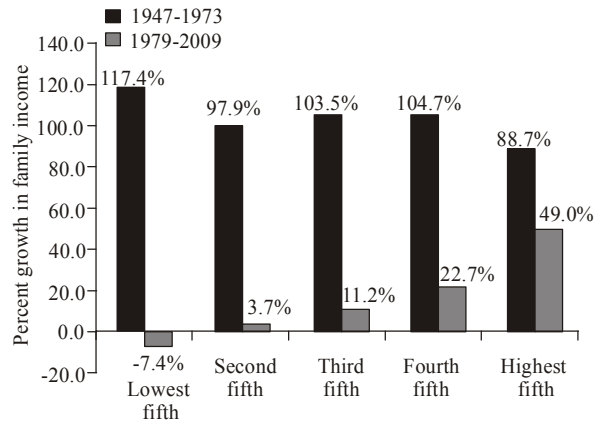


Fig. 5: Real family income growth by quintile, 1947-73 and 1979-2009; Analysis of the Economic Policy Institute, February 9, 2011

was mainly in favor of the shareholders hence for the capital income. We can mention some numbers: The relation remuneration of labor/remuneration of capital decreased 8% in the United States from 1970-80 and 6.9% from 1980- 92. This relation decreased between 1980 and 92 13.1% in France, 34.3% in the United Kingdom, 40.1% in Holland 18.8% in Germany 13.4% in Italy and 30.2% in Belgium. It is possible that between 1945 and 70 the salaried people took more benefit from the increase of the productivity

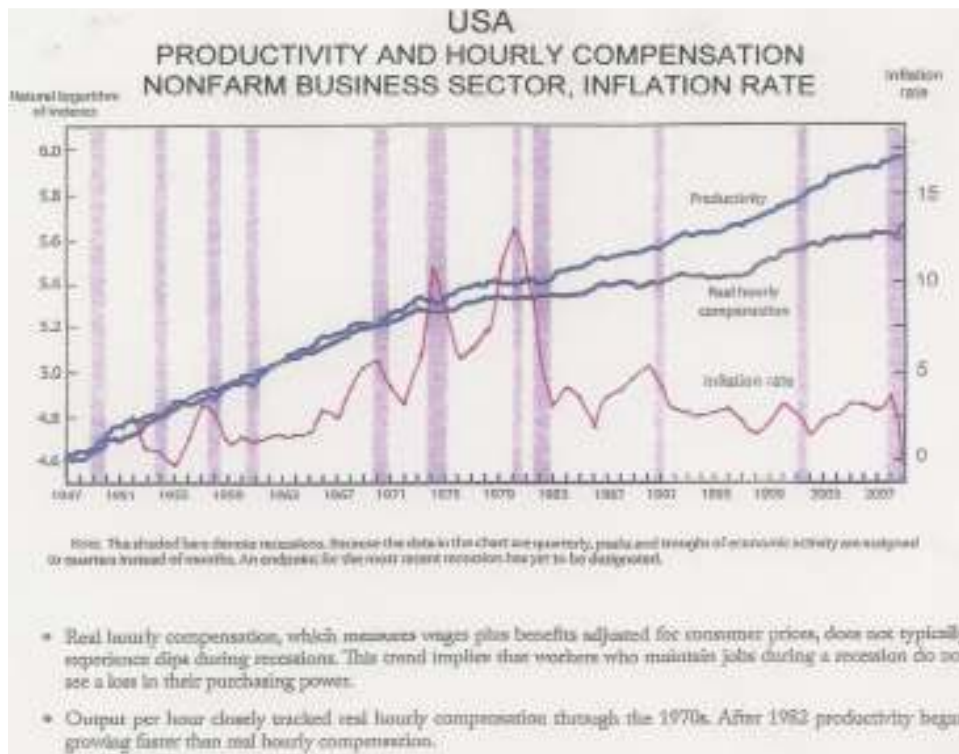


Fig. 6: Productivity and hourly compensation, Nonfarm bussness sector inflation rate; Sources: Productivity-compensation: Michael Chernousov, Susan E. Fleck and Shawn Sprague: Productivity trends in business cycles, a visual essay. Monthly labour review, June 2009, 61. Inflation rate: Historical inflatio rate, inflationdata.com

in the USA, according to government statistics the real median income increased from 1945 to 75 of 124% but decreased from 1975 to 98 of 4% and taking the increase of taxes in account even 9%). We have to mention the special case of Switzerland where the relation of salaried income/capital income increased 28% between 1970 and 92 and where the unemployment rate during this period remained under 1% of the active population. Figure 5 shows the real family income growth by quintile, 1947-73 and 1979-2009: The growth 1947-73 was very close for the 4 lowest quintile (98-117%) somewhat lower for the highest fifth quintile (89%). The growth 1979-2009 was almost linearly increasing from -7.4% for the lowest fifth to 49% for the highest fifth. This confirms the United Nations statistics above as the highest quintile has the highest capital income.

If we compare the inflation rate with the difference of productivity increase versus increase in wages (the

productivity-wages gap) for various countries we can see the correlation (Fig. 6 to 9). As the real economy facts do not correspond to our working hypothesizes the correlation is not always there. Crises, government actions and external factors influence the inflation. If we consider the United States, the low inflation rate after 1983 corresponds to the productivity wages gap (Fig. 6). For France the correlation is visible from 1987 (Fig. 7). For Italy the inflation rate decreases from 1984 (Fig. 8). For the United Kingdom the inflation is low since 1984, corresponding to an increase of the productivity-wages gap (Fig. 9).

Note: Inflation always provokes a partial loss of revenues, short term for the inflation of the real economy and long term for the inflation of the financial markets, as illustrated by the recent stock market crash with a huge loss for the capital income. The real estate market crash caused losses not only to the capital

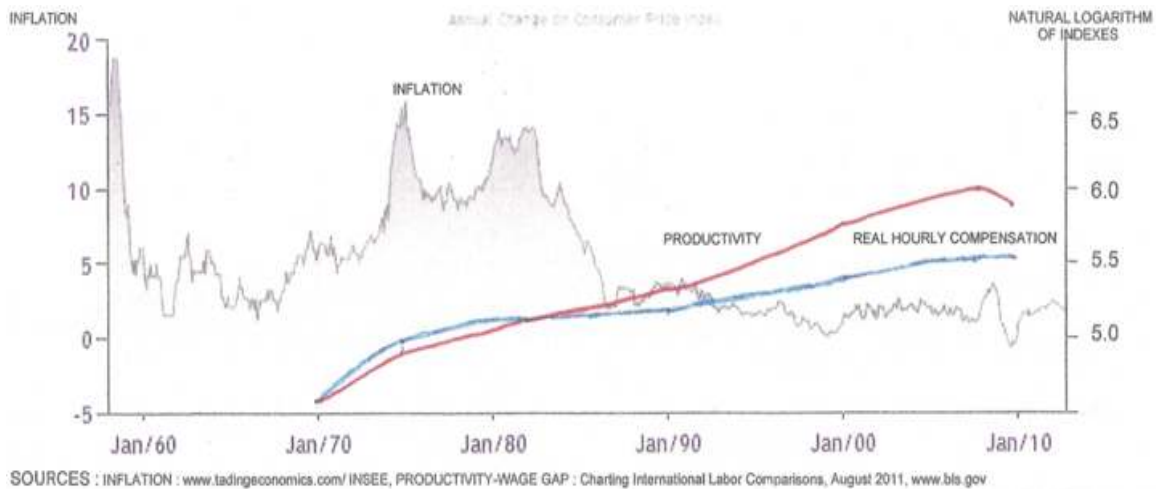


Fig. 7: Productivity and hourly compensation and inflation rate in France

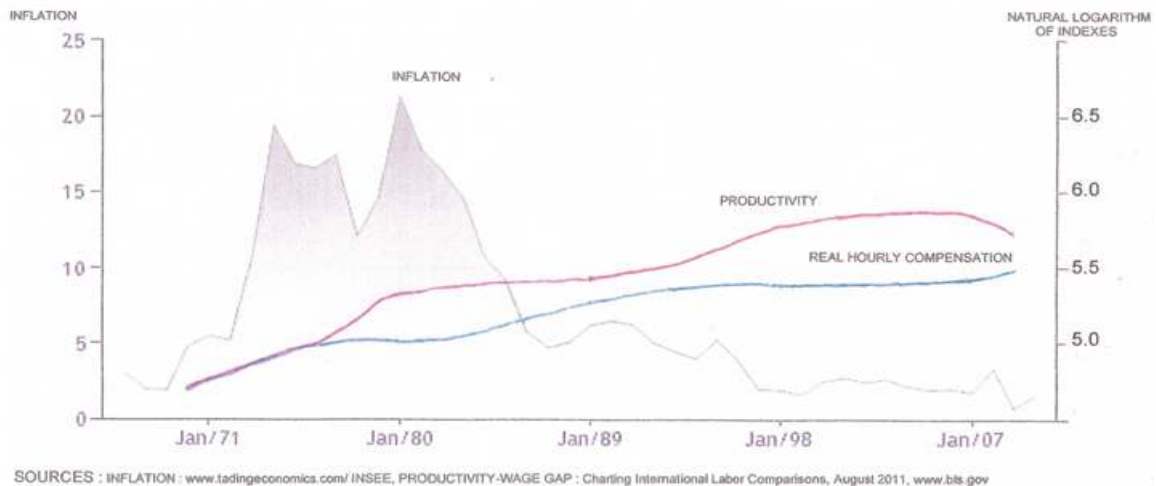


Fig. 8: Productivity and hourly compensation and inflation rate in Italy

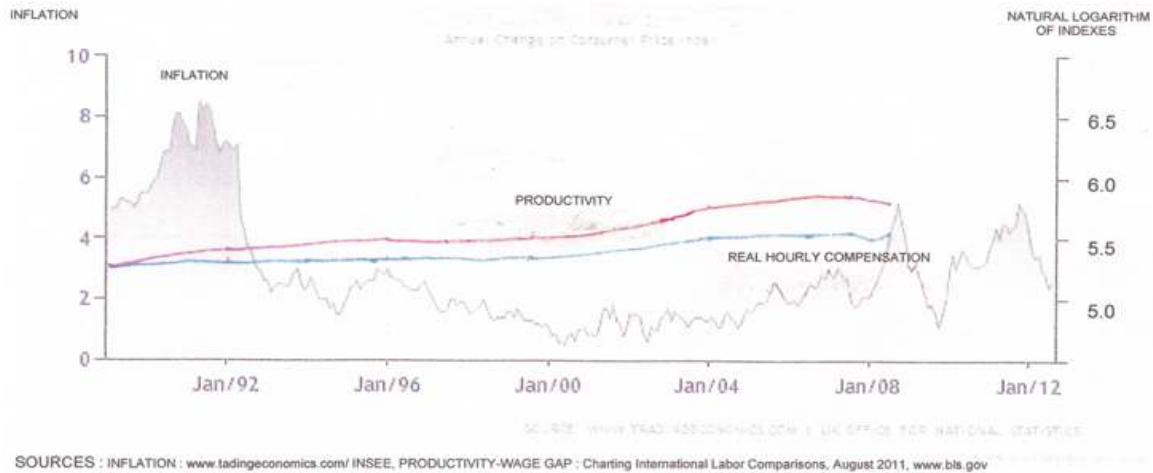


Fig. 9: Productivity and hourly compensation and inflation rate in United Kindom

income but also to the salaral income, resulting in a reduction of the consumption expenditure. Already before the last crisis (2002-2007) more than 10% of the work force of the OCDE countries was unemployed and about 15% of the industrial capacity was not used. Therefore, the economy is not efficient. It is to the advantage as much for the capital as for the labor to reach an equilibrium in the repartition of the benefits of the productivity increase. As far as a balanced repartition of the benefits promotes growth: growth is tied to consumption expenditure and investments, if one or the other does not increase the growth will be weak or none. Creating wealth is maximized when the repartition of the benefits of the productivity increase is balanced between capital and labor.

Considering the ideal case of a balanced benefits repartition of the productivity increase, the same percentage of salary rise as capital revenue rise, this will have the following consequences:

The price level of consumer goods can be expressed according to Hyman (2008). The simple equation, admitting that profits equal investment and the wages are spent on consumer goods:

$$P_c = \frac{W_c}{A_c} \left[1 + \frac{W_i N_i}{W_c N_c} \right]$$

- P_c : Price level (of consumer goods)
- W_c : Money Wage rate in consumer goods
- W_i : Money Wage rate in investment goods
- N_c : Employment in consumer goods
- N_i : Employment in investment goods
- WN : Wage bill
- A_c : Average of productivity of workers with productivity increase

If the money wage rate is the same in consumer and in investment goods:

$$P_c = \frac{W_c}{A_c} \left[1 + \frac{N_i}{N_c} \right] \tag{1}$$

Which for our purposes can be written as:

$$P_c = \frac{W_c}{A_c} M \tag{2}$$

From this we get by changing to logarithms:

$$\ln P_c = \ln W_c - \ln A_c - \ln M$$

By differentiation we obtain:

$$\frac{dP_c}{P_c} = \frac{dW_c}{W_c} - \frac{dA_c}{A_c} + \frac{dM}{M} \tag{3}$$

As in our hypothesis M is constant:

$$\frac{dP_c}{P_c} = \frac{dW_c}{W_c} - \frac{dA_c}{A_c} \tag{4}$$

Which means:

If the proportion of increase of wages is equal to the proportion of increase of productivity, there is no inflation.

Not all the sectors of the economy have the same increase of productivity; the increase of productivity in the administrative field is today not negligible because of the use of computers, but during the fifties and sixties it was little. In some fields, the increase of productivity is close to zero. We do not see how the productivity of a medical doctor or a hairdresser could be improved 30 years ago or even today. We assumed that the salaries were increased according to the productivity increase yearly. The buying power increasing, the sectors of the economy with low or zero increase of productivity could also rise the prices and hereto the salaries. In this case, the GNP should

increase also approximately with the increase of the wages if the consumption and investment customs are not changed. However, the sectors with no increase in productivity having still increased their expenditure, an inflation of the real economy will occur.

Assuming the proportion of workers with the productivity increase *equal* to their wages increase is *a* and the proportion of workers with no productivity increase is *b*, $a + b = 1$, $a = 1 - b$, The inflation can be expressed according to equation (4):

$$\frac{dP_c}{P_c} = [1 - b] \left[\frac{dW_c}{W_c} - \frac{dA_c}{A_c} \right] + \left[b \frac{dW_c}{W_c} \right] = \frac{dW_c}{W_c} - \frac{dA_c}{A_c} + b \frac{dA_c}{A_c} \quad (5)$$

As the wages increase is equal to the productivity increase, according to our hypothesis:

$$\frac{dW_c}{W_c} - \frac{dA_c}{A_c} = 0$$

And,

$$\frac{dP_c}{P_c} = b \frac{dA_c}{A_c} \text{ is the inflation in our case} \quad (6)$$

The average increase of the productivity will be:

$$a \frac{dA_c}{A_c} \quad (7)$$

According to our simple hypothesis the increase of the GDP (Gross Domestic Product) will be

$$\frac{dGDP}{GDP} = a \frac{dA_c}{A_c} \quad (8)$$

If we divide Eq. (6) by (8):

$$\frac{dP_c \times GDP}{P_c \times dGDP} = \frac{b}{a} \text{ and } \frac{dP_c}{P_c} = \frac{b}{a} \times \frac{dGDP}{GDP}$$

The level of the inflation will be the increase of the GDP multiplied by the proportion of workers with no productivity increase divided by the proportion of workers with the productivity increase *equal* to their wages increase. We will call this *a « natural inflation »* in opposition to an inflation caused by an unbalanced repartition of the benefits of the productivity increase or other factors such as the increase of consumption by indebtedness, increase of the raw materials cost, variation of the currency exchange rates or modification in the repartition of the contributions for retirement funds or for retirement by distribution, etc. Example: if $b/a = 0.8$ and the increase of GDP 3 % the inflation will be 2.4%. The Central Banks have to take into account the *natural inflation*. For this reason they should never fix a maximum inflation which could be close to the natural inflation.

If the increase of the wages is different of the productivity increase, but the other hypotheses are the same:

$$\frac{dP_c}{P_c} = \frac{b}{a} \lambda \frac{dGDP}{GDP} \text{ where } \lambda = \frac{dW_c}{W_c} / \frac{dA_c}{A_c}$$

This means, the inflation will be lower when λ is less than 1 and higher if it is more than 1.

The central banks are used to react to what they consider as causing inflation: excessive increase of the quantity of money, strong growth. In fact, they should check the reasons for the increase of the quantity of money or the GDP as an important growth yield by an important increase of productivity is not causing a higher inflation than the natural inflation.

The inflation is maintained through the increase of salaries in order to compensate de previous inflation, so the economy cannot return to an equilibrium salaried income/capital income. The inflation of the financial markets is also self sustaining as if the increase of the productivity does not correspond to an increase in salaries it will provoke unemployment. The unemployment will unbalance the labor market and will cause a decrease of the salaries increasing even more the capital income and which was already excessive compared to the salaried income. The relation of saving/consumption expenditure will steadily increase and feed the inflation of the financial markets with cumulative effect-until the market will come back to the equilibrium through a crash. In 2002, we had a delayed crash, as the fall of the stock market was slow in opposition to the one in 1929. As the real economy was somewhat disconnected of the financial markets, the result of the crash was not like in 1929. In 2007-8 the financial markets were connected to the real economy as the bubble was in real estate. The effect on the real economy was reduced by the massive intervention of the governments. As the macroeconomic equilibrium between labor income and capital income did not change and the massive leverage for speculation continued, after a big loss for many stockholders, the inflation of the financial markets is starting again. As the relation between dividends and stock values is high again, nobody knows how long until the next crash. During the period after the world war two, the unemployment rate was low in spite of the high increase rate in productivity, but it was a high inflation of the real economy, probably because the salaries increased faster than the capital income (we do not have statistics for this period).

As we have seen, the unbalance between savings and consumption is producing inflation. The lack of balance can also occur when produced by other factors than the inadequate repartition of the benefits of the increase of productivity. Here follow some examples where the initial working hypotheses are not always taken in account.

In case of boom, psychological reasons can incite the consumer public to spend more than they earn, as they hope to earn the coming years more and so they need to make less savings or can make debts. The productive investment will in this case not cover the production needs leading inevitably to inflation.

It is worthwhile to examine the effect on the economy the introduction of a retirement system without discussing the advantage or disadvantage of the two possible systems.

A mandatory retirement system like the social security, which distributes to the presently retired people the money subscribed by the working, will increase the consumption and decrease the saving (utilized for investments), will cause inflation to the real economy. The introduction of retirement funds by capitalization will significantly increase the saving, decrease the consumption and thereby induce inflation on the financial markets. Only at the end of the retirement of the first contributors, will the main part of the contribution be transformed to consumption expenditure: when the contributions will be equal to the allowances paid. Consequently, during thirty to forty years the contributions represent accumulated savings.

From experience, we can tell that savings are increased as a result of the introduction of retirement funds by capitalization. These savings have to be invested in the real economy in order to bear fruits. All savings, which do not correspond to an investment, are lost on a long term. (Investing in gold for example does not bring benefits even if it keeps its value. Only productive investments can have an output similar (or better) than the social security type of retirement. Excessive borrowing for consumption will also produce inflation of the real economy as well as the leveraging which will induce inflation on the financial markets.

The amount of investments taken up by the economy depends on its growth and so of the growth of the consumption expenditure. We have seen above that the manufacturing and the service industry can increase their investments when the consumption is stagnant. However, we have shown that all the saving is not invested in a productive manner because of a phenomenon connected to the inflation of the financial markets. Consequently, the increase of consumption expenditure is reduced in favor of the higher increase of savings, all the savings cannot be invested in a productive economy. As the introduction of retirement by capitalization is made to the prejudice of consumption spending, it unbalances the relation savings/consumption expenditure. *Increasing excessively the savings and reducing the consumption expenditure will create inflation of the financial markets.* This is the second cause of inflation of the financial markets presently observed, produced by an excessive amount of saving. How will the market balance the supply and the demand of investment on the long term? The supply and the demand of consumption

products are balanced by the market; in case the salaries are increasing faster than the increase of productivity, the production cannot follow the demand; the produced inflation will cancel the excess of salary increase. In a similar way, the excess of saving will be cancelled on long term by the inflation of the financial markets. Introducing a pension fund by capitalization in a period of low growth (the economy cannot take up too much savings), the retirees will lose a part of their retirement.

The introduction of the retirement by distribution, as we mentioned above, corresponds to an increase of the consumption spending, as the insured persons will lessen their savings and the retired persons will immediately spend the money in consumption. This is perhaps the second cause of the after war inflation, beside of the increase of the salaries, perhaps higher than the increase of productivity.

CONCLUSION

As it shows from the above arguments, the basic cause of the inflation, as well as the inflation of the real economy and of the financial markets, is the unbalance of the relation between consumption expenditure/savings (or investments). The main causes of a lack of balance of these factors are the inadequate repartition of the benefits provided by the increase of productivity and the introduction either of a forced saving or a forced consumption. Social causes can also modify the balance of consumption/saving. The introduction of a retirement by distribution corresponds partially to a forced consumption and the introduction of retirement funds by capitalization corresponds partially to a forced saving. The first provokes an inflation of the real economy, the second of the financial markets. The leverage effect accentuates the unbalance. We have to add to this causes the natural inflation, as defined above, which is however relatively small.

The above mentioned statistics showing the increase of the relation capital income/salaried income during the period 1970-92 (other statistics show the same trend between 1992 and 2004) corresponding to an excessive increase of the stock market values, corroborate the theory concerning the inflation of the financial markets. The well-known statistics of the inflation of the real economy during the period 1960-70 corroborate the theory on this subject.

Consequently, the central banks and the governments should try to balance savings and consumption: savings, which are not invested in the real economy, cannot produce value. If the savings are not enough for the productive investments needed, the inflation of the real economy will deprive it from a part of its growth. In case of introduction of retirement systems one has to be concerned about the macroeconomic effects of this introduction. One

solution would be to start the two types of retirement systems in the same time and to balance them in course of time with the macroeconomic tendencies. The interest rates should be differentiated for bank credits for the real economy and the financial markets.

The great crisis of 1929 (and the one of 2001-2) can be explained by this theory. It was a period of big economic changes. Electricity replaced the steam power and the productivity increased dramatically especially in the United States. However, the increase of productivity did not bring an increase equivalent to the compensation of employees. A huge number of workers were laid off in favor of more efficient technological solutions. As in the meantime the compensation of employees was stagnant, the demand did not reach the supply. At the end of the twenties, the US industry did only use 75% of its capacity in key sectors. The benefits of the increase of productivity were not delivered to everybody to increase consumption and empty the warehouses. In order to increase the demand, the banks and the distribution did promote cheap credit. During 1929, the amount of the consumption debt became unbearable. The stock prices became much higher than their value, feed by the credits for speculation and above all, by the unbalance between savings and consumption spending caused by the embezzlement by the capital of the main part of the benefits of the increase of productivity. At the end, the market restored the macroeconomic equilibrium-

leading to a collapse of the economy.

The difference with the present crisis is that the use of new sophisticated financial instruments as well as a very high leverage, often irrational, increased the indebtedness of the financial actors; the irresponsible deregulation also contributed to make the financial markets completely obscure. Another difference: The intervention of the governments to save the banking system and to stimulate the economy. The government intervention attenuated the crisis, but a drastic regulation of the capital markets and the banking system is essential to avoid an aggravation of the crisis and new crises.

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