

ON CERTAIN TRADE-OFFS BETWEEN STRUCTURAL CHANGES AND MONETARY POLICY

Andrzej Wojtyna¹

The organisers should be congratulated upon the choice of the conference topic at least due to two reasons: a) an unexpected strong decline in the economic growth in Poland since the last six months of the previous year, which phenomenon put in a new light the relationships between structural changes and the monetary policy and b) a relatively poor identification of this significant relation in the literature.

The reasons of the decline in the economic growth have not yet been convincingly explained by economists. whereas it has been almost generally accepted that this phenomenon results from three groups of factors (see Mujžel *et al.*, 2001): a) externalities (a global recession), b) a restrictive monetary policy and c) a slowdown in system reforms (some of which have been even reversed) and weakening of the supply side of the economy - the relative weight of each of the aforementioned groups remains unclear. While the first two groups are of short-term character and they influence the real GDP, the third group affects the effectiveness of use of production factors and thus shapes the changes in the potential GDP. The above mentioned three reasons should perhaps be supplemented with the fourth one. The overstated and too long protracted reference to the dramatic economic situation inherited from the previous government, which resulted in the revision of entrepreneurs' expectations and the consolidation of the stagnating trends.

¹ University of Economics, Cracow
Institute of Economic Sciences, Polish Academy of Sciences, Warsaw

I. Introductory remarks

The organisers should be congratulated upon the choice of the conference topic at least due to two reasons: a) an unexpected strong decline in the economic growth in Poland since the last six months of the previous year, which phenomenon put in a new light the relationships between structural changes and the monetary policy and b) a relatively poor identification of this significant relation in the literature.

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One may expect that the delayed restructuring process constitutes one of the major medium-term threats to the Polish economy. A presumption that the restructuring should precede privatisation is a risky concept. The so called consolidation of enterprises only fosters the increased monopolisation and the political power of particular sectors (thus increasing the expectations for State aid) and prevents the search for a strategic investor. Moreover, by merging companies into a single group, holding etc. the hitherto restructuring efforts of some undertakings are foiled. There is also a serious threat that the new package proposed by deputy prime minister Kołotko would discourage even those companies which till now have been fulfilling their liabilities towards the State and the suppliers.

While the slowdown in structural changes is usually mentioned in the diagnoses of the reasons behind the economic growth slowdown, strangely enough this factor is

omitted in the discussions concerning the restoration of the high growth rate. Many politicians see such opportunity in the further decrease in interest rates; others hope for the upward trends in the German economy. A general feature of our political discourse consists in a frequent opinion that “growth will simply come again due to the logics of the market economy”. These opinions may however turn to be wrong because they are based on the experience of the highly developed countries. We should remember that the empirical data on the developing countries indicate a high volatility in growth rates - and what’s particularly important - the existence of several distinct patterns (Pritchett, 2000): 1) steady growth (“hills and steep hills”), 2) rapid growth followed by stagnation (“plateaus”), 3) rapid growth followed by decline (“mountains”), 4) catastrophic falls (“cliffs”), 5) continuous stagnation (“plains”), or steady decline (“valleys”).² In his conclusions (p. 247) the author states that “the rule applicable to the developing countries provides that everything may happen there and often actually happens”. Thus it is impossible to exclude the possibility that the current strong slowdown in the Polish economic growth may mean entering the *plateau*, as was the case in the late eighties when nobody could probably foresee this pattern to suit so well the Japanese economy in the several years to come.

On the other hand, the concept - present in the public discourse - that all structural problems in the Polish economy can be easily solved by a significant acceleration of privatisation, must be treated as equally naive and risky. Without entering into the details, it should be only pointed out that most researchers believe that the privatisation - although important and necessary - on its own would not solve the issue of business effectiveness, as it rarely leads to an efficient corporate governance.³ Simultaneously the restructuring of the existing companies as well as the reallocation of resources in the economy as a whole require other important conditions to be satisfied (see more Estrin, 2002).

In this context important questions about the character of the monetary policy (as well as the broader macro economic policy) arise:

- Has monetary policy hampered the structural changes?

² When applying the narrow definition of the recession (an absolute drop in GDP in two consecutive quarters) Poland fortunately falls into the first pattern.

³ Also in the West privatisation has recently led to disappointment due to the corporate governance deficit. See more *Coming* (2002).

- If it has, was it due to its over- or under-restrictiveness?
- What is more important for the structural changes: hard budget constraint imposed by a restrictive monetary policy or by a demanding industrial policy?
- Whether in comparison with fiscal policy, the monetary policy has a comparative edge in influencing structural changes?
- Which element of the broadly understood monetary policy has greater influence upon the structural changes - interest rate policy or exchange rate policy?
- What institutional infrastructure would best facilitate the co-ordination of the structural policy interventions by the Government and monetary policy of the NBP? In particular, how to convince the NBP that the planned and implemented structural changes are realistic and allow for a less restrictive monetary policy?
- Which function of NBP is more important from the structural change perspective - the monetary policy or banking sector supervision?
- To what extent the slow pace of structural changes hinders NBP primary efforts to ensure stable pricing? Whether and to what degree does it rise the cost of disinflation?
- What is the optimum level of inflation in the context of structural change effectiveness?

Such an extensive list of questions (yet definitely incomplete) leads to a reflection that the relationships between the monetary policy and structural changes have not been not sufficiently examined in the economic literature. While this might be justified in case of highly developed countries, it is difficult to explain for the emerging economies. This is first of all true for the introductory textbooks (e.g. Todaro, 1997), but to a large extent it also applies to the textbooks at the advanced level (e.g. Agénor and Montiel, 1996). Although they devote a lot of place to each issue in question separately, we can learn very little about their relationships. This approach of analysing macro economic topics (e.g. price stabilisation) independently from the issue of structural changes is characteristic not just for the textbooks, but also for the strictly scientific papers. One of the possible reasons of the status quo may be a traditional “division of labour” between the World Bank and the International Monetary Fund. It’s however worth mentioning that IMF - partly in response to criticism - recently tries to operate outside its traditional domain. For instance in the first of the “Eleven

Commandments on Economic Policy” formulated in 1997, IMF underlines that “the reasonable monetary, fiscal and structural policies are complementary and mutually supportive”⁴. We should however also notice that in the latest report summing up the philosophy underlying the macro economic programmes and policies recommended by the Fund (Khan *et al.*, 2002), it is hard to find any references to the discussed relationships. Similarly, the reports of the World Bank do not put too much stress on the interdependence between macroeconomic and structural dimensions.

This paper is not aimed at answering the aforementioned questions which refer to the Polish situation; with a current level of empirical knowledge this task would perhaps anyway be impossible. The purpose is much more modest: to present certain trends in the research on interactions between structural changes and monetary policy. Since these relationships do not form a clearly separated domain in the economic research, we have to start with the sketch of the possible interpretations thereof (part II). Then in part III, the relations between the monetary policy and structural changes will be discussed in the context of research on the transformation processes in the Central and Eastern Europe. In part IV we shall discuss the controversies over the significant publication of Akerlof *et al.* (1996), which suggested that permanent costs (in a form of higher unemployment) are the consequence of difficulties in restructuring under zero inflation. In part V we shall present the conclusions from research on the influence of the “new economy syndrome” on the monetary policy. Finally we shall come back to the reflections on the Polish situation.

II. Various approaches to the relationship between structural changes and monetary policy

The definition of structural changes itself requires clarification. If referred to a system under transformation it is convenient to treat it as equivalent of the *microeconomic transition* as understood by Estrin (2002:102). In such a case two types of change are possible: a) restructuring within the existing companies and b) resource reallocation. The interactions with monetary policy should be examined for each of them. There is a feedback: structural changes shape the monetary policy (among others

⁴ According to the Bank of England Quarterly Bulletin, August 1997, p.307.

by modifying the existing and creation of new transmission channels), while the monetary policy (e.g. its restrictiveness) influences the pace of structural changes.

Generally we can identify the following aspects of structural changes in their relation to the monetary policy:

- Structural changes as the transformation of the aggregate demand structure. Here one has to study whether the interest rate changes exert impact mainly through the channel of the aggregate demand or the exchange rate channel, as well as what is the structure of time lags in each channel.⁵ Another important aspect is the elasticity of the demand for both consumption and production goods to the changes in interest and exchange rates. It is also important to analyse the problem of consumption booms (see more: Montiel, 2000). A one-off adjustment of the consumption function (e.g. due to the significant changes in relative prices) may constitute an important factor disturbing the “trade off” between the output and inflation, and consequently making the monetary policy more complicated to pursue.⁶
- Structural changes and the Balassa-Samuelson effect. If a higher growth rate due to the catching-up effect means a different speed of productivity increase in various sectors, then the “safe” inflation level in the less developed economies may be higher than that of the industrialised countries. Škreb (1998:181) for example suggests that due to both the Balassa-Samuelson effect and errors inherent in the calculation of the consumer price index, inflation of 4-5% may actually mean price stability for the former socialist countries.⁷ In these circumstances going down to a significantly lower level of inflation (in particular if it happens too fast) should be evaluated as a negative influence of monetary policy upon the process of structural changes.

⁵ Although it is difficult to explain the surprisingly good export results in the period of the severe growth slowdown in Poland, one could risk a thesis that a high exchange rate has better effected the restructuring than the high interest rates (noting however that that the exchange rate also depends upon interest rates).

⁶ If the consumption boom in Poland in the mid nineties is to a great extent of that character, then the incomprehensive appreciation of this fact by NBP could have resulted in the application of the over-restrictive policy - one of the possible reasons for the quicker disinflation than originally expected.

⁷ The Balassa-Samuelson effect also complicates the process of the EU currency integration. That is why the inflation in Euroland must exceed the optimum level for countries with higher GDP (e.g. Germany). The zero inflation for the entire group could strongly increase the risk of deflation in certain countries (Sinn and Reutter, 2001).

- Structural changes as the consolidation of public finance. In this case, for the reliability of the monetary policy and the process of disinflation, it becomes important whether the budget deficit is closed by the expenditure cuts, or through the increase in indirect taxes. Changes in the structure of expenditures are also critical: if at a given level of deficit the share of growth promoting expenditures increases (e.g. infrastructural investments), then in the long-term perspective this should increase the rate of the potential GDP growth and simultaneously decrease the threat of the inflationary pressure. In addition, the consolidation of public finance may require a temporary increase in certain expenditures, which should not lead the central bank to tighten its monetary policy. Similarly, the effective process of structural transformations (or its prospect) allows for a larger deficit without threatening the long-term internal and external economic equilibrium (see Begg 1998:113).
- Structural changes as the increased equilibrium unemployment. Any accelerated structural changes usually lead to a significant increase in unemployment. If these changes are followed by the process of disinflation, then the frictional and structural unemployment is accompanied by the cyclical one. A particular combination of institutional conditions on the labour market may then lead to a strong hysteresis effect. The risk is high due to the structural change itself. It may even increase as a consequence of the restrictive macro economic policy. Recently the hysteresis effect has again become subject of studies.⁸ In one of the most popular publications Ball (1999) analyses the changes in unemployment in the OECD countries and comes to a conclusion that the passive macro economic policy during the recession resulted in the high cost of the permanently excessive unemployment. Particularly controversial are his conclusions on whether the hysteresis effect acts also in an opposite direction – whether the expansion of demand may permanently decrease unemployment. In his opinion, those countries which already in 1985-97 managed to significantly reduce unemployment, succeeded mainly due to the demand increase as a consequence of both the specifically targeted monetary policy and the non-monetary shocks. However, Mankiw (1999:238) in his comments to the Ball's publication, states

⁸ The models trying to explain the hysteresis phenomenon were first popular in the late eighties.

that the established correlation may be equally well interpreted in the opposite direction. According to this interpretation, the countries which with the highest increase in NAIRU⁹, have been forced to carry out less expansive monetary policy.

- Structural changes as changes in market structure. The level of competition (monopolisation), barriers to entry or exit, etc. significantly influence the effectiveness of carrying out monetary policy. Usually authors draw our attention to the monopolistic structures on the labour market, which affect the power of trade unions and the possible wage negotiations as well as they have impact on the elasticity of nominal and real wages.¹⁰ However recently - in the studies of the new Keynesians and the representatives of the so called new neoclassical synthesis - more attention has been paid to the structure of the product market. In case of monopolistic competition, the frequency of price amendments by companies affects the effectiveness of monetary policy. The results indicate that price adjustments are less frequent when inflation is low – since the cost of the price change remains constant it is rational for the companies to do so. This nominal rigidity means that the changes in the monetary policy produce greater real outcomes when the level of inflation is low - or in other words - the short-term trade-off between output and inflation is stronger (see more: Yates and Chapple, 1996). This may also mean that when inflation level is low a given interest rate rise would result in both unintended and too strong drop in output as well as in too fast disinflation.
- Structural changes in the financial sector. Financial innovations - resulting among others from the IT development - cause that the effectiveness of measures applied by the monetary authorities as well as the importance of individual transmission channels undergo radical changes. There is of course a feedback: the monetary policy leading to a low inflation significantly modifies the operation of financial markets and institutions. This influence is particularly significant if monetary policy unintentionally leads to deflation (see more:

⁹ The non-acceleration inflation rate of unemployment.

¹⁰ One of the reasons why researchers concentrate on the labour market is the fact that the asymmetric nominal downward rigidity on the product market is practically non-existent. (Groschen and Schweitzer 1999:312).

Saunders, 2000). Another important question is whether the optimal point on the Phillips curve is identical for the financial institutions and the business sector. Palley (1998:16-17) draws our attention to the fact that zero inflation (but not deflation) is in the US context the best solution for the financial sector (since there is no inflation tax on the financial assets), however the interests of the industrial sector are better served by a higher level of inflation. We should consider whether this opinion is also applicable to the economies with less developed financial markets.

- Structural changes in response to financial crises. Financial crises may initiate the long-postponed necessary institutional reforms of the financial and capital markets as well as the industrial sector (this actually happened for instance in South Korea after 1997). In such a situation a regulatory function (compared to the monetary policy) of the monetary authorities gains more significance (among others bank supervision). It may however happen that the applied macroeconomic crisis-preventing measures turn to be so effective that the government withdraws from the proper institutional reform (for example Japan). It is however difficult to *ex ante* determine the capacity of the financial sector to survive monetary and banking crises. Bank of International Settlements in its recent report (BIS, 2002) reminded that until the crises both Argentina and Turkey were believed to have healthy banking sectors. The case of Australia and New Zealand shows that their monetary authorities facing the Asian crisis reacted differently, and that the interest rate rise may not necessarily be the best solution. The issue of the right response of the macroeconomic policy is not limited to financial crises, but it also covers the strong internal shocks reflecting major changes in the global economy. For example, Rodrik (2001) re-examines the reasons of failures of developing countries and from that draws several important conclusions on the appropriate preventive measures. On the basis of the *ex post* analysis Rodrik questions the popular view that the main reason for the growth drop in most of the developing countries, were microeconomic factors (including the trade policy aimed at import substitution). In his opinion,

an inefficient institutional framework was the major factor preventing the adequate intervention of the macroeconomic policy against the external shocks.

III. Structural changes and monetary policy in the period of systemic transformation

In the literature on transformation, the relation in question is in most cases analysed in relation to the choice of the right sequence of the reforms and the costs of disinflation. We may generally say that certain issues appearing in the publications on developing countries, become even more important in relation to the post-socialist countries, due to the definitely larger scope of structural changes. For the countries which entered transformation with particularly high inflation, the choice of the reform sequence was relatively simple: a success in disinflation was a necessary condition for structural reforms. This choice was becoming more complex when inflation was reduced to a moderate level. Then a dilemma concerning the financial sector reform appeared. On the one hand, one could assume that the immediate restructuring of this sector, resulting in its increased effectiveness and competitiveness, would facilitate the process of further disinflation. On the other hand however, we could expect a rapid disinflation to excessively weaken the emerging financial sector. Similar dilemmas applied to interactions of disinflation with other structural factors, such as labour market reforms, the consolidation of the public finance sector or changes in ownership. As time went by, the importance of certain elements of political economy in interactions between disinflation and structural changes, was growing (see more: Cottarelli and Doyle, 1999). Let's examine some selected elements and features of the aforementioned interactions discussed in the literature:

- If the potential GDP is growing rapidly, there is less motivation to temporarily stimulate economic growth by monetary expansion. Thus the growth promoting structural reforms (privatisation, economy opening, decreasing the role of the State sector, fiscal reform, competition) become important for price stability (Cottarelli and Szapáry, 1998:5).
- The process of transformation is a huge, long-lasting and positive supply shock, giving a chance for a high growth in productivity. That's why the post-socialist

countries may reach a relatively high disinflation rate, at a cost being significantly lower than in the countries of the Western Europe. (Deppler, 1998:186).

- Structural reforms become the key factor in the second phase of transformation, when the main task for the macroeconomic policy consists in refraining from imposing barriers to their implementation. The objectives are as follows: a) to prevent the re-acceleration of inflation, b) to avoid an excessive and permanent currency appreciation, which among others might hinder the structural changes in the exporting sectors, and c) to avoid such policy mix, which could lead to a financial crisis (Begg, 1998:112).

The sequence of the reforms – so important for the post-socialist countries – obviously constitutes a universal issue which applies to all groups of countries. For instance, Piggot and Christiansen (1998) analyse the sequence of structural reforms on the labour and product markets and disinflation in the industrialised countries. Their study indicates that disinflation and the adjustment in the institutional framework for monetary policy have preceded the progress in structural reforms. They also express an opinion that inflation should not be further curbed until the adopted measures will have improved market flexibility.¹¹

Several other topics appearing in the transformation studies are of more universal character. The first one is about the monetary policy carried out with high level of uncertainty, resulting from the ongoing structural changes. An important dilemma here is whether in such circumstances the trial and error method may be applied in the monetary policy. Solow (1998:4-5,22-23) examines the dilemma in relation to the US economy in the late nineties, when serious doubts arose whether the NAIRU estimates should still be used as a basis for the monetary policy. In his opinion there are sufficient arguments that in such circumstances support the approach of “establishing an equilibrium between the inflation threats on one hand and the benefits of the high output and employment on the other, by applying the mechanism of trials

¹¹ This leads to a reflection that in the Polish discourse a little attention is paid to this dilemma. NBP avoid a question whether - from the point of view of structural reforms - they have not gone beyond the optimum level of disinflation. Instead they stress that interest rates may be decreased only subject to the progress in these reforms. The above mentioned two dilemmas could have been identical if the inflation had not been curbed to such a low level that the first one may only be evaluated *ex post* .

and errors”.¹² This means that the monetary policy should be symmetrical and should not have an anti-inflation bias. In other words, this supports the view that both the insufficient and excessive conservatism in the central bank’s policy, is a sub-optimal solution.

An opinion similar to Solow has been also expressed by Bean (1994:119). He refers to an extreme situation (a reversed Solow’s case) when the unemployment rate above the equilibrium ceases to influence inflation. In such circumstances, the high unemployment tells policy-makers nothing about the equilibrium unemployment rate (in spite of the fact that it is not yet higher). Then, the only way to learn what the limits of the demand expansion are, would be to reduce unemployment to a level where inflation would start increasing. And the author concludes that “the more expansionary policy may be beneficial by generating the experimental knowledge on the limits of such policy”.¹³ Bean’s proposal was criticised by his commentators Ito (1994:144) and Meltzer (1994:164). The first underlines the threat of incorporating inflationary expectations into the economy. Additionally he believes that little can be learnt from such experiment, as the companies, workers and households will start to change their behaviours, following the change in the behaviour of business policy makers after they have gained new “knowledge” (the case of the so called Lucas criticism). The second author believes that the involvement of financial authorities in the “monetary fine tuning” and the use of the money illusion, would be a mistake which would additionally increase the economic uncertainty.

It is clear that the aforementioned dilemma is particularly intense in the post-socialist countries. On one hand, a particularly high level of uncertainty due to the ongoing transformation as well as the lack of good estimates of the key parameters, suggest the “explorative” approach. On the other hand, due to the painful experience of the macroeconomic experiments performed in the previous system, the aversion to such an approach is fully understandable. It seems however that the rapid global changes will anyway force central banks and governments to more courageous application of the “explorative”.

¹² Recently a similar postulate has been addressed to the NBP. According to some economists, without such “explorative” approach it is impossible to learn whether there is space for the further reduction in interest rates. In their opinion, the potential return to higher interests rates (if inflation accelerates again) would be a better solution than the persistence of high interest rates.

¹³ The relationship with the current situation seems to be evident.

The second dilemma - and actually the key one for us - is whether the structural reforms leave any room for loosening the monetary policy. This may also be formulated in a slightly different way - should structural reforms be carried out under favourable or unfavourable market conditions. It is obvious that in the latter option an important role will be played by the factors from the sphere of the political economy. In spite of the great importance of this dilemma there not many direct references to it in the literature. One of the few researches directly dealing with the dilemma is Bean (1994:126-127). He starts stating that although the negative demand shocks have been partly liable for the growth of unemployment in the Western Europe, the macroeconomic policy has a limited role to play in its reduction. The main stress must be put on the relevant reforms of the supply side of the economy. However according to Bean, as soon as these reforms have been carried out, the macroeconomic policy (mainly the monetary policy) "may play a useful supporting and cementing role by guaranteeing a quick materialisation of the structural reform benefits". Neither politicians nor the central bank should worry about the strong economic growth accompanying the reform. Assuming that the effective reforms will result in the adequate increase in investments, the appropriate monetary policy should consist in its initial loosening and subsequent tightening.

Blinder (1994:339) supports Bean's opinion that if the microeconomic policy is successful in reducing the natural rate of unemployment, the central bank should increase the demand to such extent which would enable the transfer of the economy to a new equilibrium point. He believes it is necessary as the additional supply will not generate an extra demand. This is a symmetric relation: if the microeconomic factors (e.g. widening the magnitude of the State welfare or a negative productivity shock) reduce the productive capacities of the economy, then the role of the central bank consists in limiting the aggregate demand proportionally to the decrease in the total supply.¹⁴ Characteristic here is the position of the International Monetary Fund. In their report IMF opt for the supportive role of the macroeconomic policy in carrying out structural reforms on the labour market in Western Europe. and doubt anybody could suspect IMF of supporting statism or being pro-Keynesian (see more: IMF, 1999A, chapter 4).

The importance of the supporting role of the demand policy for the labour market reforms is also noticed by Blanchard (2000:440-441) in the context of attempts to reduce high unemployment in Spain. In his opinion the experts agree that the temporary growth in the aggregate demand and the acceleration of the economic growth constitute an important part of the necessary package of measures aimed at decreasing the unemployment. He indicates that contrary to the demand expansion of the late 80-ties, the expansion initiated in 1995 did not result in the accelerated inflation, which should be the case due to the simultaneous reduction in both the natural and real unemployment rate (according to the hysteresis hypothesis).

The IMF study provides us with an example for the dilemma whether the structural reforms should be carried out in the period of high or low economic activity (IMF, 1999A:109). Due to the political barriers, the amendments to the labour protection regulations should rather be introduced in the time of low unemployment, while the wage elasticity reforms may be easier during the recession period.¹⁵

IV. Controversies over the model of Akerlof, Dickens & Perry

The main point raised by Akerlof *et.al.* (1996) is quoted in the literature as one the most important arguments against the zero inflation. This argument is directly related to the subject of this paper, as the interactions between the monetary policy and structural changes play an important role in it.. The significance of the model is great anyway because it has hit on the crux of the main disputes of the contemporary macroeconomics, and provoked a lively discussion.¹⁶ This is a stochastic general equilibrium model - developed for the US economy – which assumes a downward nominal wage rigidity, monopolistic competition as well as the heterogeneous demand and supply shocks for individual businesses. The aforementioned and other elements cause that the model is complex and does not contain analytical solutions, and thus the

¹⁴ Blinder reminds that one of the reasons for the inflation in the seventies, was the too slow adjustment of the total demand to the slowdown in productivity in the highly industrialised countries.

¹⁵ O. Blanchard during his last visit to Poland spoke in the same spirit (an interview in “Gazeta Wyborcza” daily of 12th April 2002) warning that “at the moment when the unemployment reaches 18%, there is no point in forcing radical amendments to the Labour Code, because the social resistance is too strong”. In his opinion, in Poland (also in France) the authorities failed to act i.e. no changes were introduced in period of more favourable market conditions.

¹⁶ The Akerlof *et al.* hypothesis was popularised by Krugman (1996).

authors have to use simulation in order to prove that the downward nominal wage rigidity leads to the non-linearity in the Phillips curve. (see Andersen, 2001).

For greater simplicity we could present the essence of the Akerlof *et.al.* concept in the following manner.¹⁷ Shocks affecting the economy severely influence the firms. In a typical year ca. 10% jobs disappear while ca. 11% new jobs are created. In order to survive both the domestic and international competition, the companies in difficulties have to carry out the restructuring process, including wage reductions. In the inflationary conditions the reduction of real wages may be done without the necessity to decrease the absolute level of nominal wages. At a very low, and definitely at zero inflation, such possibility disappears. Due to the downward nominal wage rigidity the adjustment to the new conditions must be made through quantity adjustment (i.e. employment reduction). Since under a restrictive demand policy there will always be companies forced to reduce relative wages in order to sustain the employment, the cost for the economy - in a form of increase in unemployment - will be of a permanent character. The simulation model was used for the examination of the consequences of the Federal Reserve System's (FRS) policy aimed at the reduction of the 6% inflation to the level of 3% or zero (at the initial unemployment rate of 6%). It turns out that for the 3% inflation target, unemployment sets (after a temporary growth to 7,5%) at the level between 5,5%-6%. For the zero inflation target unemployment would stabilise at the level of ca. 8% (after a temporary increase to over 9,5%). Thus this "positive" inflation produces a grease effect for the labour market mechanisms. Other simulations have shown that the nominal wage rigidity model much better represents the trends in prices and unemployment in the period of the Great Depression than the traditional NAIRU model.¹⁸

Hogan (1997) reconstructs the Akerlof *et al.* concept in the form of five steps necessary for the low inflation¹⁹ to be treated as undesirable: 1) downward nominal wage rigidity, 2) consequently low inflation leads to on average higher real wages than in case of a moderate inflation, 3) these higher average real wages result in the higher

¹⁷ The authors develop and formalise the hypothesis of J. Tobin of the early 1970s.

¹⁸ In relation to the years 1954 -1995 the capacity of the model to replicate the real data did not differ much from the traditional NAIRU model. This results from the fact that in that period the average wage increases were big enough to eliminate the barrier of the nominal wage rigidity.

¹⁹ In order to avoid any terminological misunderstandings, low inflation should actually be interpreted as the zero rate inflation.

unemployment, 4) the higher unemployment due to low inflation combined with the downward nominal wage rigidity, implies wealth loss 5) the cost of higher unemployment is not compensated by greater benefits of the low inflation. Referring this analysis to the Canadian economy, Hogan states that each of its elements should be thoroughly examined, if the analysis were to be used as the basis for the rising of the inflation target band. It is hard to disagree that before making any radical switch in the monetary policy, all theoretical and empirical arguments related to the above discussed steps, should be thoroughly studied. Thus we should spend some time analysing the commentaries to the Akerlof *et al.* model.

Theoretical reservations covered the following issues:

- By saying that the nominal wage rigidity eliminates the neutrality of money, the authors have questioned the fundamental element of mainstream economics. This implies the trade-off between inflation and unemployment (output) also in longer term. For many economists it is equally difficult to theoretically accept the model's presumption of the money illusion.²⁰ This is particularly disputable in relation to the particularly low inflation, as the monetary policy becomes then more stable and predictable, and entrepreneurs can much easier differentiate between the nominal changes in prices and average wage on one hand and changes in relative prices and real wages (Viñals, 2000). Money illusion is not a sufficient condition for the downward nominal wage rigidity, effects of which could be neutralised by inflation. Generally speaking, the theoretical arguments for the nominal wage rigidity are much more complex than it is presumed in the literature (Yates, 1998:242).
- The presented evidence concerning the nominal wage rigidity do justify the broader macroeconomic conclusions formulated by the authors. Their reasoning falls under the Lucas critique. The empirical evidence coming from the environment characterised by a high growth in nominal wages are then related to a hypothetical situation of the zero growth in average wages. We may however expect that together with the change in the macroeconomic environment, the behaviour of firms would also be modified. In the real life situation if the average nominal wages do not rise, workers would not treat the nominal wage reduction as anything exceptional and unjust. So even if the downward nominal wage rigidity exists under the inflationary

conditions, it may be radically decreased or eliminated under the regime of stable prices (Gordon, 1996: 62; Mankiw, 1996:69; King, 1999:18).

- If the productivity trend remains at a sufficiently high level, then the reduction in unit labour cost and in relative wages is possible without a need for the reduction in the nominal wages. Then there is no need to adopt positive inflation as the target for monetary policy. This will only be necessary when the shocks are so severe, that the required real wage reduction exceeds the long term productivity ratio (King, 1999:18).
- Doubts arise in relation to the production function used in the model. Since it is characterised with the constant returns from work, the model generates non-cyclical real wages. If we replace this function with a more conventional option (i.e. with the diminishing returns), then the model will generate anti-cyclical wages, which are inconsistent with the empirical evidence. Equally controversial is the model's presumption that wages play an important role in the allocation of labour even in the short term. The authors neglect the option of having the downward rigid wages with no influence on resource allocation (Mankiw, 1996:67).

Moreover, quite serious empirical objections have been lodged:

- A more detailed and updated review of the empirical data on nominal wage rigidity leads to definitely less unequivocal conclusions than those drawn by Akerlof *et al.* One of the serious problems is lack of a sufficient number of episodes with the zero or at least very low inflation. Generally speaking, the hitherto available empirical results indicate that the thesis on the downward nominal wages rigidity must at best be treated "as not proved" (Yates, 1998:242).
- The used non-linear (convex) form of the Phillips' curve has not been confirmed in other studies, most of which indicate its linear character. In their econometric analysis Akerlof *et al.* do not give any evidence confirming its non-linearity. Moreover the thirties do not give sufficient proofs, that due to the rigidity of nominal wages, money permanently loses its neutrality. In that period the upward wage elasticity was an enigmatic issue rather than the downward one. The adequate period for the historical analysis were the 1920s and 1890s (Gordon, 1996:64-66).

²⁰ It's worth mentioning however, that many empirical studies confirm existence of this phenomenon in real life.

- The authors have not learnt the key lessons from the twenty years of attempts to estimate the Phillips curve equations: a) that the coefficients on lagged inflation do not have to sum up to one, even if the natural rate hypothesis is true b) that not only the level but also the variations in the unemployment rate influence inflation, while after World War II the latter factor became particularly important (Mankiw, 1996:68).
- We should treat with scepticism the explanations (among others of Akerlof *et al.*), which try to correlate long-term components of inflation rate and unemployment. Econometric studies indicate that in the US economy after World War II, these two factors were not interrelated (Staiger *et. al.*, 2001:53).
- The behaviour of the US economy in the early nineties seems to be inconsistent with the model predictions. If the model were correct, the observed inflation fall should have resulted in the rise of the average wages, profit drop and the increase in the steady-state unemployment rate. In reality wages were stable, profits were growing rapidly, and the steady-state unemployment was clearly lower than in the past (Mankiw, 1996:68). These inconsistencies were strengthened in the late 1990s, when favourable tendencies became more evident, and the concept of the “new economy” was becoming more popular.²¹

In spite of the formulated criticism, some authors tried to more directly test the hypothesis of Akerlof *et al.* or confront it with the results of their own studies based on different methodological presumptions. We could mention here a publication by Groschen and Schweitzer (1998). A difference in the approach consists first of all in basing their analysis upon microeconomic data from companies, and thus being able to catch and interpret wage rigidity which could not be observed in the surveys of households. Secondly, the positive grease effects have been contrasted with negative sand effects. Thirdly, the applied long-term time series of company data have covered

²¹ One should however bear in mind that the behaviour of the US economy in the nineties was inconsistent not only with the Akerlof *et al.* model but also with standard models of natural unemployment rate. Even if we assume that the higher productivity has moved the long-term Phillips curve to the left, it still does not shake the hypothesis that for low inflation levels this curve is not vertical (IMF, 1999B:97).

also periods of low inflation of the 1950s, 1960s and 1990s.²² In spite of a different approach the authors confirm the “qualitative conclusion” of Akerlof *et al.* concerning the grease effect at low inflation rate. Simultaneously their study shows that the sand effect, which initially amounts to zero, increases as the inflation grows and after some time starts to dominate. In their conclusions they state that the „low inflation regimes” not necessarily have to increase unemployment or upset the smooth operation of the labour market. Nevertheless, they believe that the labour market offers many hints for the choice of the inflation target at low inflation.

Fitoussi *et al.* (2000) construct and empirically test their own innovative model, where the natural inflation rate not only changes but is also subject to cyclical fluctuations due to shocks. This upsets companies expectations concerning the productivity change and the wealth effect, and consequently their asset valuation. For the purpose of this paper important is the fact that in their econometric analysis, the authors test a hypothesis that due to the application by the countries aspiring to join the Economic and Monetary Union of the restrictive monetary policy, the employment was clearly lower than the “structuralist equilibrium path” would have suggested. What is particularly interesting, the authors have used the mechanism analysed by Akerlof *et al.*, as one of the possible explanations. It turned out that the average inflation drop is accompanied by growth in average unemployment. This is consistent with this mechanism, but since it explains only ca. 15% of the data variation, it should not be regarded as the main cause.

Wyplosz (2000) tried to directly test the hypothesis of Akerlof *et al.* on the sample of European countries. He analyses the significance of the “grease effect” and the “sand effect” in four large EU member states (France, Spain, United Kingdom and Italy) as well as – due to a very low inflation - in Switzerland. The obtained results are quite astonishing. It turns out that in the three large EMU countries the „sand effect” can be observed already at low inflation. A good news for the optimum currency area might only be the fact that that this effect has appeared in all three countries, which indicates its certain homogeneity. On the other hand, the results suggest that the peak value of this negative effect corresponds to the inflation target in the range of 0-2%,

²² In his comments Ball (1998:309) states that the advantage of their approach is that they do not base their analysis on a presumption about the hypothetical inflation rates, but they show that the inflation has dropped to such a low level where the decrease in “grease effect” can be observed.

adopted by the European Central Bank. This means that inflation corresponding to the central point of the inflation-control target band (i.e. amounting to 1%) produces the "sand effect", which increases the natural unemployment rate by ca. 2-4 percentage points. The most astonishing result is that the complete elimination of this effect would require ECB to rise the inflation target to ca. 10%.

It's worth mentioning that the conclusions drawn by Wyplosz are to a large extent contradictory to a general evaluation of Akerlof *et al.* hypothesis in relation to the European countries formulated by Viñals (2000). In his opinion the available indirect evidence indicates that the existence of a permanent trade-off between inflation and unemployment at low inflation rates is far more doubtful in the European context than in the case of the United States. This means, that the argument supporting a positive inflation target as a way of decreasing the unemployment caused by the downward nominal wages rigidity, is even weaker in relation to the European countries than in the case of the USA. According to Viñals the solution to the unemployment problem does not depend on the monetary policy, but instead requires the well-considered actions of the governments of the EU member states aimed at elimination of structural rigidities on the labour market.

New phenomena in the US economy, which became evident in the late 1990s, encouraged the authors to construct a new model (Akerlof *et al.*, 2000). One of the possible reasons was the fact that their earlier model turned to be less suitable for the modified circumstances. Although the two models are in many aspects very similar²³, still there are some significant differences between them. The authors started the construction of the new model by acknowledging that in real life the companies' attitude to inflation is somewhat different from the one presented in the models. That's why in their new model they apply an approach based on near-rationality. This first of all means that at a low inflation rate most people would completely neglect this phenomenon when setting wages and prices. Secondly, even if inflation is taken into consideration, it is underweighed when expectations are formulated.²⁴ Thirdly, the attitude of workers to inflation differs from its interpretation by professional economists. At the end however, the authors admit that an unambiguous empirical

²³ Blinder (2000: 51) compares them to "first cousins", i.e. assumes the possibility of combining them into a single model.

determination of the relative importance of nominal rigidity and of “near-rationality” effects is not possible.

The obtained results indicate that employment may be significantly improved if inflation is increase from 0% to above 1,5%. The authors formulate a conclusion that the macroeconomic policy should target the inflation rate in the 1,5%-4% band. Both the higher and the lower inflation rate will probably lead to a fall in output and employment. According to Blinder (2000:51), the versions of the Phillips curve chosen for each model have clearly different empirical implications, and they provide diverse policy recommendations. In the earlier model, a very low inflation meant rapid growth in the unemployment rate. In a new version, such low inflation corresponds with the lowest level of unemployment. Blinder however expresses serious reservations, whether the optimum inflation level estimated by the authors, would be the right target for the Fed. In his opinion the model neglected the costs which appear even at low inflation. Secondly, he has not been convinced that at low inflation the money illusion is permanent, and it can only be reduced or eliminated when the inflation is high.

V. Monetary policy and the „new economy”

The theoretical and empirical controversies as well as the dilemmas of monetary policy in the “new economy” have been widely discussed in another paper (Wojtyna, 2001). However, a complete negligence of that issue would be difficult to justify in the review article on relationships between monetary policy and structural changes. A compromise may consist in discussing only new results (and only of the selected studies), which could not be included in the earlier paper.

Staiger *et. al.* (2001) try to check which explanation of low inflation, high growth in real wages and low unemployment in the US economy of the late 1990s, might be the most relevant. According to the authors, the hitherto explanatory attempts could be divided into the two following categories 1) those where “the Phillips curve is alive and is doing well, but ...”, and 2) those that announce that “Phillips curve is already dead”. Majority of concepts falls into the first group. They presume that the Phillips curve maintains its negative slope, but it shifts to the left, while real wages are

²⁴ The authors differentiate the meaning of underweighing and underestimating inflation (see more: *ibid.*

rising due to the acceleration in the productivity growth rate. Individual versions of these concepts differ in explaining the reasons for the curve shifts: some put stress on company pricing policies, others concentrate on the labour market, and there is a group who point to co-occurrence of positive supply shocks (falling energy prices and improved terms of trade).

The ideas of the second category are much more radical, as they suggest a fundamental change in the trade-off between unemployment and inflation, which is reflected in a horizontal shape of the Phillips curve estimated for the 1990s. In addition to certain “newspaper” announcements, Staiger *et al.* include here both papers by Akerlof *et al.* On the basis of their own analysis, the authors come to a conclusion that the behaviour of prices and wages in the 1990s ceases to be a puzzle, if the trade-off between unemployment and productivity are taken into consideration. The comparison of their trend components shows an “astonishing and intriguing negative correlation”. The recently observed unemployment fall and the acceleration of the productivity growth reminds the situation of the early 1960s; this trade-off was reversed in the 1970s, with the downward shift in productivity trend and increase in unemployment.

Similar conclusions have been drawn by Ball and Mankiw (2001) when they were trying to identify the causes of the NAIRU fluctuations in the 1990s. They treat it as an equivalent of the natural unemployment rate and – what is more interesting – they do not contrast it with hysteresis.²⁵ In spite of significant changes in NAIRU and problems with its precise estimation, they do not believe that this measure has lost its usefulness for monetary policy. They agree with other authors (among others Stock and Watson) whose results indicate that the inflation forecasts based on NAIRU, in general tend to be more accurate than those based on other macroeconomic variables (such as interest rates, money or prices of raw material).

Among various hypotheses, as the most promising Ball and Mankiw find that according to which the NAIRU fluctuations correspond with the changes in productivity growth. They stress that the high growth in productivity itself is not a specific feature of the „new economy” (which 30 years ago was even higher), but its evident acceleration in comparison to the 1970s and the 1980s. In the periods of significant productivity acceleration we can observe a mechanism of slow-adjustment of wage aspirations. In

p.7, 19).

the periods of a slow-down in the productivity growth (e.g. in the 1970s) the real wage growth should fall as well. However, workers resist this decrease, and they try to maintain the wage increases to which they are accustomed. To the extent that workers have some influence over wages, this means that wage setters will try to achieve real-wage increases above the level that can be sustained by productivity growth. This mismatch between real-wage aspirations and productivity growth worsens the inflation-unemployment trade-off. In other words, the NAIRU rises.

According to this hypothesis, a similar but reverse trade-off could appear in the 1990s, when wage aspirations lagged behind the accelerated productivity growth. According to the authors, although the study does not provide conclusive results, future NAIRU analyses should include the linkages with productivity.

Several publications evaluate the performance of the Federal Reserve System in the "new economy". According to Mankiw (2001) the character of the macroeconomic processes of the 1990s was really exceptional. Although the levels of inflation, unemployment and real growth were similar to some earlier periods, but they have never been so stable before. While the acceleration in the productivity growth (facilitated by the IT development) helped to reduce inflation and unemployment, a more important role was played by positive external supply shocks. In comparison with the earlier decades, the central banks have been more aggressively adjusting interest rates to the core inflation. These years prove that the discretionary policy may be effective, although we cannot exclude that the Fed adopted a "covert inflation targeting", based on a version of the Taylor's rule. This would however mean that the special instinct of Alan Greenspan played no important role here.

The above mentioned hypothesis has been closely examined by Ball and Tchaidze (2002). It states that the Taylor's rule, which correctly represented the earlier years, failed in the 1990s. There are however presumptions which allow us to believe that the rule applied by Greenspan was much more sophisticated, as it included the NAIRU fluctuations. The simulation shows that the rule based on inflation and the unemployment deviations from NAIRU, corresponds well with the Fed behaviour in the entire period 1987-2000.

²⁵ They presume that NAIRU fluctuates due to many factors, hysteresis being one of them.

Also Gali *et al.* (2002) when evaluating the Fed's performance, analyse its consistency with a certain policy rule. By examining (with a VAR model) the influence of the Fed's decisions on the adjustment of the economy to the technological shocks, they try to confirm a hypothesis that in the period 1954-98 the "quality" of monetary policy improved. An optimal policy - in the context of the constructed model i.e. a policy that fully stabilises prices - serves as a reference for the evaluation of the alternative policy rules (a simple Taylor rule and a constant money growth rule). The results suggest that across the two periods ("pre-Volcker" and "Volcker-Greenspan era") there are significant variations in the reaction of interest rates, prices and output to technological shocks. Secondly, the Fed's responses to these shocks are in a long run consistent with the optimal policy. Thirdly, in the pre-Volcker period the Fed's policy tends to overstabilise output, thus generating excessive inflation volatility.

Characterising the interactions of macroeconomic policy and „new economy“, Baily (2001) underlines among others its positive influence on the development of the IT sector. This was possible thanks to a smart avoidance of over-rigidity as well as the selection of an adequate policy mix, which encouraged interest rate reduction and consequently attracted investment. In the author's opinion, fiscal discipline although has not created the "new economy", but helped establish the virtuous circle. Monetary policy, on the other hand, „did the right things in the right time“, even though its operation was supported by a favourable environment of expanding economic potential (p. 256-257).

Much less optimistic and more controversial image of the monetary policy in the period of "new economy" emerges from Cecchetti's (2002) analysis. The author does not say that the Fed has made any mistake in the new circumstances, but he points out that the risk of error has increased significantly. In his opinion, monetary policy has become more difficult due to two reasons. First, the changes in the financial sector have weakened the impact of monetary policy. Interest rate changes are translated into growth and inflation through the banking system. So if the role of banks in credit creation decreases, the effectiveness of monetary policy falls accordingly. Second, it is now more difficult to evaluate whether the productivity fluctuations are temporary or permanent. Fortunately, structural changes have improved stability of the economy, so

monetary policy is now less important than it used to be in the past, and thus the error probability is lower.

Similar is the spirit of the remarks contained in the recent report of the Bank for International Settlements (BIS, 2002:69-76). According to the authors of the report, a significant achievement of the past decade was the fact that the global economy entered the phase of low and relatively stable inflation. Beside the benefits for the economy, the new environment creates also a “subtler” (in the report’s language) challenges for monetary authorities. The key challenge in the report consists in the fact that with expectations better anchored at low levels of inflation, underlying mismalignments between supply and demand may now take longer to become evident in headline inflation. As a consequence, the decision on when and by how much the policy should be tightened or eased, becomes more complicated.

Another issue is the multi-dimensional impact of IT on the current - or even more importantly - future effectiveness of monetary policy (see more: Woodford, 2001).

VI. Final remarks

Let’s at the end go back to our own country and formulate several supplementary remarks referring to the current dilemmas concerning the trade-off between monetary policy and structural changes:

- Generally speaking, a restrictive monetary policy may persuade the government to speed-up structural changes. If however the government has to introduce change under time pressure and under unfavourable market conditions, then the government may apply a poorly drafted and wrong policy, which instead of hardening would soften budget constraints. As a consequence, the costs of such policy (increase in inflation pressure) may be higher than those resulting from loosening the monetary policy.
- If NBP say A, they should also say B. If they engage in the structural changes at all (which itself is controversial), then they should declare which reforms they deem sufficient in order to lower the interest rates. Otherwise the approach would resemble the previously played games in which the Monetary Policy Council would happily focus its activity on criticising the budget. This would of course require a

much better co-operation between the central bank and the government, as well as the resignation from the philosophy that co-ordination means merely “each party performing its own duties”.

- In its rhetoric the NBP frequently underlines the necessity to speed up the structural changes, but it neglects its role in shaping the effectiveness and security of the banking system. It’s worth mentioning again that until the crises, Argentina and Turkey were perceived to have sound banking systems.

It seems that many of the above discussed tendencies in the international economic research, deserves greater attention of our researchers. The hypothesis referring to the wage aspirations of workers seems to be promising in the Polish circumstances. Also a study examining whether the real wage rise could be slower than the productivity growth, could be informative. If this could have been done in the period of a high growth rate, then possibly the current NAIRU (as well as the actual unemployment rate) would have been lower, the competitiveness of our goods as well as the Poland’s attractiveness to foreign investors - higher.²⁶

Perhaps by now it is too late for the discussion about the level of monetary policy restrictiveness which could have enhanced structural changes in Poland. We may refer to similar dilemmas in Canada several years ago (see Hogan, 1997), and we can state that Poland has already reached the low inflation rate, and the short-term costs have already been paid. Thus, we should continue with the low inflation policy and wait for its benefits. However, while waiting the society - and definitely the economists - will be bothered with a question: Will these benefits actually materialise? And if yes - when?

²⁶ We should not forget about relatively high wages (expressed in USD) in Poland in relation to the *per capita* GDP if compared to the Czech Republic and Hungary.

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