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Empirical Tests of Poland's Integration with the EU – a Survey

1. Introduction

In the beginning of 1997 the Polish government published the National Strategy for Integration. As one could expect the document aroused controversies. It was criticised, among other aspects, for the lack of quantitative estimates of costs and benefits for the Polish economy resulting from the accession to the EU, the so-called "gains from integration ". It seems that this particular criticism could be addressed to Polish economists in general. They were not much involved in measuring the economic effects of the EU membership; just the opposite to the attention the Western experts have given to calculating the consequences of the Eastern enlargement viewed from the EU angle. Their Polish colleagues preferred rather to indicate threats, opportunities, challenges and barriers that would possibly result from the accession. They analysed them thoroughly referring to the theory and to numerous experiences of other countries but usually avoided quantifying these phenomena for the Polish economy[1]. Indeed very few authors brought up such efforts.

[1] See: M.Perczynski - Polska na drodze do integracji z Unią Europejską, in: M.Belka, W.Trzeciakowski (eds.) - Dynamika transformacji polskiej gospodarki, Poltext, Warszawa 1997, v.2; E.Kawecka-Wyrzykowska - Stosunki Polski ze Wspólnotami Europejskimi od 1989 roku, SGH, Warszawa 1997; E.Markowska, A.Muller - Ekonomiczne przesłanki przystąpienia Polski do Unii Europejskiej, Fundacja Innowacja, Warszawa 1996; L. Ciamaga - Stowarzyszenie Polski ze Wspólnotą Europejską - szanse i zagrożenia, in: K.Michalowska-Gorywoda (ed.) - Wspólnota Europejska, SGH, Warszawa 1994.

This little interest is in sharp contrast with the amount of attention paid to the measurement of integration effects in the EC, EFTA or NAFTA countries. In Poland not all economists accept the point of quantifying the economic results of integration. Some question even the possibility of making such a calculation, rightly indicating that many important economic aspects are simply non-measurable[2]. On the other extreme end, one can find suggestions that the results of numerical tests should constitute a basis, or at least a solid argument, for a decision on joining the Communities[3]. In this article I intend to survey the state of research on costs and benefits from integrating the Polish economy with the EU. By "effects" (and "results", "consequences" etc.) I understand "costs and benefits" only, unlike some other authors I do not consider "losses" as possible integration effects.

2. Trade Effects

Empirical research on economic integration began with measuring trade effects according to the Vinerian tradition. Liberalisation of trade flows was the basic form of economic co-operation within any integration grouping. Changes in value and in directions of trade were easy to measure. They served as a convenient proxy for changes in welfare. The trade activity also constituted the core of the Interim Agreement between Poland and the EC. Its provisions had entered into force in March 1992 before the Europe Agreement on Poland's association was ratified and became binding from 1994. The Agreement provided for gradual abolishment of trade barriers between the parties. It was also based on an asymmetry principle, meaning that the EC would lower its tariff rates faster than Poland. Later the EC even unilaterally decided to speed up the calendar of liberalisation at the Copenhagen Summit in 1993. But the Agreement's scope also reflected the principle of asymmetry. Free trade was limited mainly to industrial products, where the EC was more competitive and agricultural trade remained

[2] E. Kawecka-Wyrzykowska, op. cit., p. 327. Similar opinions can be find in world economic literature. A.M.El Agraa considers them as very unreliable, see: Measuring the impact of economic integration, in: A.M.El Agraa (ed.) – The economics of the European Community, Harvester Wheatsheaf 1994.

[3] "The fact that the question of integration has been decided yet is a proof of (...) our lack of responsibility. (...) Where are the analyses of costs prepared by economic institutes, where are the studies on social effects of integration prepared by experts in cultural and political issues, by sociologists?" A. Zawiślak – Mam prawo wątpić *(I have the right to doubt)*, Gazeta Bankowa 1997 nr 35.

heavily regulated precluding Poland from fully exploiting her comparative advantages.

Some economists in Poland tried to quantify commercial effects of the Agreement. Following K. Marczewski's study they tried to measure changes in industrial (K. Marczewski, K. Śledziewska) or agriculture (E. Kawecka et al.) trade flows induced by concessions contained in association agreement[4].

Applying an elasticity approach Marczewski built a simple partial equilibrium demand oriented model commonly used in this type of research. It described the changes in trade as a function of such factors as: value (or volume and prices) of turnover, demand elasticities for imports in Poland and the EU, reactions of the exporters and the importers to diminishing customs tariffs and trade barriers, pre-association tariff levels, liberalisation schedule, elasticity of substitution of mutual trade and trade with third countries.

The scope of analyses covered two standard trade effects for Poland and the EU (Marczewski, Śledziewska) or for Poland only (Kawecka et al.). Marczewski, not having comparable statistics, did not estimate trade deviation for the EU but in addition assessed budgetary effects for Poland due to smaller customs income. Śledziewska calculated the margin of preference. The margin reflected benefits from customs tariffs reduction between Poland and the EC while maintaining the level of duties against the third countries.

The starting point was to find the new level of domestic prices of imported goods after decline in tariff rates and in other border barriers which were "translated" into tariff rates. The new level depended on a redistribution of price benefit between the exporter, the importer and the final user (consumer or producer, depending on a product). If the exporter and/or the importer were ready to resign from even a part of price benefit on a certain imported product, its price dropped for the consumer. The price decrease was proportional to the scale of customs tariff reduction for this product, and so was the increment of its trade volume. On the contrary, in case the exporter and/or the importer took over full

[4] See: K. Marczewski - Wpływ obniżek ceł w obrotach z krajami WE w latach 1992-1999 na saldo handlu zagranicznego Polski i wpływy budżetowe, in: - Stowarzyszenie i integracja z WE a rynek dóbr; Biała Księga, Urząd Rady Ministrów, Biuro Pełnomocnika Rządu ds. Integracji Europejskiej oraz Pomocy Zagranicznej, Seria: Gospodarka nr 2, 1993; E. Kawecka-Wyrzykowska, M. Ciepielewska, W. Mroczek – Wpływ umowy o stowarzyszeniu ze Wspólnotą Europejską na handel rolny Polski, Studia i Materiały 1992 nr 37, IKiC HZ, Warszawa; K.Śledziewska – Efekt kreacji i przesunięcia handlu, w: Ocena realizacji Umowy Przejściowej dotyczącej handlu i spraw związanych z handlem między polską a EWG i EWWiS, pod red. E.Synowiec, URM, Warszawa 1994; or: Ocena wpływu wdrażania części handlowej Układu Europejskiego na gospodarkę Polski, Zespół Ekonomiczny Biura Pełnomocnika Rządu ds. Integracji Europejskiej oraz Pomocy Zagranicznej, 1995.

price benefit from lower tariff rates, the price on a domestic market did not change and therefore there was no increment in trade volume.

Price elasticities could differ for product groups and for geographical markets. Generally, the higher was the elasticity for a certain product, the more profitable for exporter and importer it was to resign from price benefit. They could gain more from increment of trade volume (scale effect) instead. Respectively, in the case of low price elasticity of demand on imports on a particular market, it would pay more to take over full price difference stemming from diminishing customs tariffs. It is then obvious that the results of various trade scenarios depended on subjective assumptions about how demand should react and about structure of price benefits. On the other hand they were influenced by the initial tariff structures before association. These rates, generally higher in Poland for industrial goods, should produce faster increments in Polish industrial imports than in the EU imports after the process of liberalisation started. The opposite could be expected for agriculture products more heavily protected in the EU.

The numerical results that were obtained in these studies showed the effects to be much bigger in industrial than in agricultural trade, both in absolute and in relative terms. In fact in the case of agriculture they were insignificant. Even in the most optimistic scenario export creation for Poland amounted to 48 million ECU accumulated during 5 years. In industry both export effects for Poland were lower according to Marczewski (104 million ECU in 1992 and about 40 million each consecutive year till 1997) than according to Śledziewska (132 million ECU in 1992 and 169 million in 1993) for similar scenarios. Effects of liberalisation in Polish imports were totally different, however. According to Marczewski they practically did not exist until 1995 when Poland was supposed to lower her tariffs. Since then they reached over 100 million ECU per year. According to Śledziewska they appeared immediately in 1992 and were 2-3 times bigger than export effects, which was very unlikely. Comparing the scenario figures with actual increments of Polish exports to the EU (870 million ECU in 1992 an then: 503, 1519 and 1992 million) one is tempted to conclude that removal of formal barriers to the single market was not very important stimulant of export activities in Poland.

Like many studies of this kind, the research on trade effects for Poland was exclusively focused on assessing the direct consequences of mutual reduction of customs tariffs. It was the sole factor to influence the trade pattern. All other sources of variation in demand were ignored. It neglected possible macroeconomic relationships as well as the impact of other instruments of trade policy, like exchange rate for example. It did not consider possibilities of product substitution,

interdependence of trade with production[5], changes in commodity composition of trade or the role of imported inputs in export performance. However, the resignation from the wider approach was deliberate. Having limited the scope of analysis, the authors concentrated on detailed review of possible changes in the trend and structure of Polish foreign trade with the EU. They obtained useful information on the consequences of customs tariffs' reduction for groups and sections of Combined Nomenclature. Their analysis could be easily extended to the lowest aggregation level of customs tariff schedule.

3. Sectoral Approach - Agriculture

Agriculture is probably the most extensively covered sector in economic literature on consequences of Eastern enlargement. The bulk of this research has been done in the EU but from the members' perspectives. It is significant that financial and budgetary issues arise before any others in these studies. Therefore in natural way quantitative approach has dominated the analysis. In Poland agriculture also seems to be at the top of researchers' agenda. To my knowledge all sectoral studies were devoted to it. The difference with the EU is that only two of them were published.

The first report was prepared in the Section of Economic Analyses of Agricultural Policy in the Ministry of Agriculture and Food Industry[6]. Its purpose was to analyse different agriculture policies in Poland from the perspective of accession and CAP requirements as well as in the context of the situation on the world markets. The agriculture sector was disaggregated into 25 plant (wheat, barley, maize, sugar, etc.) and animal products (milk, butter, beef, pork, etc.) for 14 specified countries or country groups. The authors applied a partial equilibrium model ESIM built by S. Tangerman and T. E. Josling and adjusted to Polish conditions by the Section's staff. It balances demand with supply for individual agricultural products by generating world equilibrium prices. They are separated from domestic prices in each country with various instruments of trade and agricultural policies, such as regulated prices, production quotas, tariffs, and exchange rate. Indirectly through exports and imports these policies influence world market prices, the impact depending on the economic potential of a particular player. The model has a well-developed structure of cross price

[5] Trade creation is not just an extra turnover between Poland and the EU but also a substitution of cheaper imports from the partner for more expensive domestic production.

[6] W. Piskorz, J. Plewa - Scenariusze integracji rolnictwa polskiego z Unią Europejską, FAPA, SAEPR, Warszawa, październik 1995.

elasticities. It enables to analyse the substitutive effects, especially with regard to changes in production and demand for feeds. Therefore the model can provide different information on supply, demand and prices for individual products. At the same time it shows the financial side of agricultural activities: farmers' incomes, amount of subsidies, value of compensatory and other budgetary payments. By including new policy measures into the model, for example from the CAP arsenal, the authors could check their potential outcome on Poland's agriculture. They had to assume, of course, how the CAP would evolve during the analysed period.

They defined two basic integration scenarios according to following timetable:

- adaptation to the CAP starts in 1997 ending in 2000,
- adaptation to the CAP starts in 2000 ending in 2005.

The scenarios were confronted with the simulated path of non-integration in order to grasp the scale of economic impact on agriculture sector. As the base year for predictions the authors took the averages for production and consumption in 1991-1993, i.e. after the main thrust of structural transformation was over in the Polish economy.

The results of simulations showed that many agricultural prices would change drastically in Poland as a result of adopting CAP measures. Some of them would more than double, like sugar, beef, cheese. Some would stagnate or only slightly drop, like wheat, rye, canola seeds, eggs, pork. On balance it means rather inevitable upward food price movement for consumers and a rise in their spending of roughly 3 billion ECU per year.

The dynamism of price increases is slightly different in both scenarios, depending on the product. Together with other CAP measures higher prices will prevent significant production growth, especially in the plant sector, and should prevent export surpluses feared by some Western experts. As a result no fundamental change in Poland's agricultural trade with the EU should occur. Only in the case of some animal products Polish farmers will supply more on domestic and community markets. Perhaps beef production, as the most strongly supported by the CAP, could be the fastest growing.

For the EC budget the inclusion of Poland's agriculture to the CAP mechanisms would mean a burden of 3,2 – 3,7 billion ECU per year (without money from structural funds). Compensatory payments should constitute the main part. In turn, the earlier the price adjustment in the pre-accession period starts, the higher costs for the Polish budget are and the more expensive it is for Polish consumers. Therefore W. Piskorz and J. Plewa recommend that Poland should start adapting CAP prices after accession, not before. They also point that

scenario of fast membership with transitory period of several years would ease the adaptation processes both for Poland and the EU.

W.M. Orłowski used another method to analyse the potential development of Polish agricultural policy in the perspective of integration with the EU[7]. The applied POLAGR model belongs to the group of Computable General Equilibrium (CGE) models. It has an expanded agricultural module, disaggregated into 24 sectors (12 agricultural products, 12 food-processing industries) plus other industries, plus services. The author assumed that the agriculture labour and capital were not mobile in a short run (i.e. in one year). Both factors, however, were mobile in a medium term. The model explains mobility of the agricultural labour relating it to income parity between farming and other sectors, the number of young (i.e. less than 35) farmers and the number of job offers in the rest of the economy. Agricultural output was also assumed inelastic in a short term, meaning that it reacts with a certain time lag to price movements.

Another important set of assumptions refers to price behaviour. First, domestic prices are either equal to world prices or higher, due to variable levies and/or export subsidies. Second, domestic prices for 8 agricultural products are not flexible. It means that they do not clear the markets. It is against the nature of CGE models. In these cases the markets are cleared by additional trade flows because the model does not allow for changes in stocks to eliminate supply and demand fluctuations.

Orłowski started his analysis with the so-called steady case scenario in which economic growth in Poland from 1991 to 2010 was not affected by any active economic policy. This exercise showed that fast economic development in other sectors combined with the appreciation of the real exchange rate might worsen farmers' relative income position. Only elimination of inefficiency in agricultural production by lowering input requirements could prevent their degradation.

However, CAP and especially its price supporting system does not promote efficiency. It means that the accession will not necessarily stimulate growth in Poland. Therefore the dilemma is how and when agriculture in Poland should be adjusted to the environment of the single market. To answer the question Orłowski simulated several agriculture policy mixes of EU prices targeting and compared the results with the steady case. The experiments led to the conclusion that fast adoption of the CAP would be too costly for the state

[7] See: W. M. Orłowski, "Price support at any price? Costs and benefits of alternative agricultural policies for Poland", Policy Research Working Paper 1584, World Bank, March 1996.

budget and for the consumers. It would also freeze structural changes in the sector. The cheapest solution would be to postpone introduction of CAP prices until the end of accession process. Instead the resources should be allocated to the reduction of excessive employment in farming. The model simulates effects of two such policies: encouraging older farmers to retire and promoting jobs in rural areas. Both do not cost more than price supporting and give far better results in the long term: they improve income parity vis-á-vis the rest of the economy, stabilise sector's position, contribute to higher growth of the national economy - although temporarily they may place more burden for urban households in a form of higher food spending.

The final part of POLAGR analysis refers to simulation of two integration scenarios with the same policy mix (encouraging elderly farmers to retire; promoting rural jobs creation; delaying price supporting schemes):

the full financing scenario: the transfers to the agricultural sector (coming from increased indirect taxes) reach the maximum transfer level that Poland agreed within GATT;

the budget constrained scenario: the transfers are equal to costs for taxpayers in the feasible price supporting policy, and therefore considerably reduced.

The simulations showed that the governmental policy aimed at reducing excess employment in Polish agriculture should begin as soon as possible and should continue during transition period after accession. The policy, through enhancing productivity growth, will strengthen the competitive position of the Polish farmers in the single market. The cost of such policy would not exceed $3 billion per year. It depends mainly on scale of production surpluses, so the pre-accession strategy should avoid stimulating supply and reducing domestic demand for agriculture products.

Two reports on challenges for the Polish agriculture stemming from integration with the EU have slightly different characters. Piskorz and Plewa present a look from inside of the sector. They try to estimate how the extension of the CAP mechanisms to the Polish agriculture will change the prices, the output, and the international trade in particular agricultural products. This is a broad analysis of agricultural markets with macro policy implications. On the other hand, Orłowski attempts to look from the outside. In his approach preferences for agriculture should be subordinated to the interests of the national economy.

The message of the two is however common and clear: supporting prices to CAP level is a wrong solution for the problems of Polish agriculture. Therefore it should be introduced at the latest possible moment. This conclusion is not intuitively obvious and clearly goes against the expectations of the agriculture lobby in Poland. For Piskorz and Plewa price supporting is wrong because it is costly, for Orłowski - because it is inefficient. But the economists' conclusion is

a challenge for politicians. The question is whether they are able to subordinate partial and short run preferences to the long-term interests of the whole economy. Orłowski who focuses on employment policy issues in fact indicates topics for further research. How to elaborate and to implement consistent efficiency oriented policy in agriculture? What kind of jobs should be promoted in rural areas in Poland? How to make early retirements attractive for elderly farmers? How to win social acceptance for necessary changes in this sector?

4. Macroeconomic Approach

During negotiations of Poland's association with the Communities the report *"Perspective 2000"* on its macroeconomic consequences was prepared[8]. The aim was to assess the scale of potential gains and losses related to the alternative of association and of autonomous economic development. The gains from association were defined as an improvement of Poland's macroeconomic indicators between 1991 and 2000 due to: reduction of barriers in mutual trade and creating more turnover, financial assistance from the Community, stronger competition in domestic market. They were related to the basic path of development assuming that relationships with the EC as well as the economic growth would continue at the pre-association levels. The basic path served also as a reference point to estimate losses from non-association. In such a case they would materialise as a result of new obstacles appearing in co-operation with the Communities. They could take the form of gradual restricting of financial assistance for Poland and of worsened position of Polish exporters in the single market vis-á-vis other competitors. The sum of potential gains lost by missing the chance of accelerating Poland's economic growth and of actual losses, both from rejecting closer institutional ties with the EC, constituted a total cost of resignation from association. In addition to this basic calculation of resignation cost the authors simulated growth effects of accelerated foreign investment inflow in final years of association.

A specially built non-linear dynamic macroeconometric model called NOBE-1 served for simulations. It consisted of eighty equations. Products were aggregated into 4 groups in imports and in production and into 8 groups in exports. The model directly generated the effects of changes in economic relationships between Poland and the EC in the form of deviations from the estimated steady-state path of growth.

[8] See: A. B. Czyżewski, W. M. Orłowski - Perspektywa 2000, Biuro Pełnomocnika Rządu ds. Integracji Europejskiej oraz Pomocy zagranicznej, Urząd Rady Ministrów, Warszawa 1993.

Reviewing the report after a few years, one can say that the authors correctly recognised the fundamental economic trends induced by association. They rightly indicated that in spite of the asymmetry of customs tariffs reduction positive for Poland, the improvement in Poland's trade balance would be only temporary. They pointed to significant rise in trade volume, higher rate of economic growth, reduced scale of unemployment and decrease of inflationary pressure as the consequences of development of the association process. However, to check ex post correctness of numerical results one would need additional information about how the assumed steady-state path has actually evolved. It is also impossible to verify the results stemming from the scenario of non-association because, fortunately, this scenario did not take place. So we will probably never know whether the estimated loss of GDP, amounting to $ 40 billion or total foreign debt before association, would be a real cost of different option of economic development chosen for Poland.

As the accession to the EU became a question of time only, measurement of macroeconomic effects for Poland aroused more interest among the economists[9]. Czyżewski and Orłowski analysed four hypothetical paths of disinflation and structural reforms policies between 1995-2000 (*blocked reforms; moderate reforms; convergence; growth and convergence*)[10], and as a consequence, four subsequent scenarios of Poland's economic development after accession to the EU (between 2001-2005). Welfe and Welfe proceeded with the long-term predictions of two essentially different accession scenarios (*pessimistic* – Poland's membership after the year 2010, and *optimistic* – membership in 2001).

Authors of both reports applied macro models but of considerably different structures and specifications. In the first study the model consisted of six

[9] See: A. B. Czyżewski, W. M. Orłowski: " Ścieżki dezinflacji w gospodarce polskiej w latach 1996-2005", paper presented at CASE seminar, May 10th, 1996; W. Welfe, A. Welfe: "Ekonomiczne efekty integracji. Dodatni bilans", in: Rzeczpospolita 1997 nr 171; W. Welfe, A.Welfe, W. Florczak: Długookresowe prognozy gospodarki polskiej do 2010 roku, Gospodarka Narodowa 1997 nr 11-12; W. Welfe, A. Welfe, W. Florczak: Scenariusze rozwoju gospodarki polskiej do 2010 roku, Gospodarka Narodowa 1998 nr 1. Compare also: W. Welfe, A. Welfe, W.Florczak: Alternatywy wzrostu gospodarki polskiej, Gospodarka Narodowa 1998 nr 1.

[10] *Scenario of blocked reforms* - structural reforms blocked, very slow disinflation, transfers from EU finance budget deficit, resignation from endeavours to fulfil the Maastricht criteria; *scenario of moderate reforms* - limited reform of public sector, moderate disinflation, control of budget deficit, endeavours to fulfil the Maastricht criteria, *scenario of convergence* - limited reform of public sector, market-oriented policy in privatisation and restructuring, limited inflation, government tries to optimise transfers from EU; *scenario of convergence & growth* - radical reform of social and pension systems, partial privatisation of non-market services, the rest like in former scenario.

mutually linked modules: labour market, credit and money, balance of payments, budget, sustainable budget deficit, national accounts and growth. As an input to each scenario the authors assumed certain disinflation rate and adequate macro policy parameters (for example the rise in money supply, increase of public debt, maximum foreign financing). As an output they received the rate of growth of production capacities as well as the maximum rates of growth of GDP and of related categories, like unemployment. The role of the model was to calculate consistent values of other macroeconomic variables such as the money supply, budgetary receipts and spending, public debt, exchange rate, balance of payments.

In the second study, an econometric one-year model W8 of the Polish economy was used to forecast non-accession and accession scenarios. The model is a dynamic single-sector multi-equation demand driven tool. It predicts GDP, consumption, investment and foreign trade but the balance of payments is excluded from the analysis. Sectoral aspects can also be included on a quarterly basis. The W8 consists of four blocs of equations describing final demand and supply; process of production; processes of equilibrating commodity markets and labour market; financial flows, wages and prices. The main equations are of stochastic type (production function, consumption demand function, investment demand function, prices and wages). Their parameters were estimated on the basis of data for 1960-1993 and made comparable between command and market economy periods in Poland[11]. Simulating integration effects the authors assumed that the foreign capital would be the main cause of investment growth in Poland. This should result, however, in heavier domestic currency and a permanent pressure on balance of trade. But on the other hand they believed that the zloty could appreciate slowly and the trade deficit could stop deteriorating after 2005 as a result of faster growing exports than imports. It suggests that the authors make high demands to policy makers and assume positive trends in world economy.

The results of Welfes' research varied significantly for chosen scenarios. Poland's fast membership assumed in the *optimistic* scenario would stimulate the growth of GDP (6,1% annually), individual consumption (4,9%), exports (9,1%), imports (8,9%) between 2001-2005. Unemployment rate should reach 8,0%. In turn, postponed accession (*pessimistic* scenario) would be reflected mostly in slower paces of annual economic growth (4,7%), individual consumption (3,0%), exports (7,4%), imports (6,7%), but also in considerably lower unemployment rate (6,3%). The differences among four scenarios of Czyżewski and Orłowski were less significant. In their opinion the rate of annual economic growth would oscillate within the limits of 4,2-5,9%, individual consumption: 5,5-6,8%,

[11] W. Welfe, A. Welfe, W. Florczak – Makroekonomiczny roczny model gospodarki narodowej Polski, IRSS, Warszawa 1996 no 31.

exports: 6,1-8,0%, imports: 7,6-8,9% and unemployment rates: 9,6-9,1%, depending on scenario.

Comparing the numerical results of adequate parts of both reports (*convergence and growth* scenario by Czyżewski and Orłowski with *optimistic* scenario by Welfe and Welfe) a few general conclusions can be drawn. The rate of GDP growth is expected to reach almost the same level (5,9% and 6,1% respectively) and rates for imports are identical (8,9%) for 2001-2005. This is the end of the similarities, however. The remaining basic macro-indicators differ by one-two percentage points: individual consumption 6,8% and 4,9% respectively, unemployment rate - 9,1% and 8,0%, exports - 8,0% and 9,1%, investment outlays 6,3% and 9,9%, etc. The relations among these indicators are especially interesting. The *convergence and growth* scenario seems less attractive than the *optimistic* scenario - it predicts less GDP with more unemployment. In the first one individual consumption increases faster than the GDP (6,8% versus 5,9%) and imports faster than exports. As individual consumption constitutes about 80% of total consumption it means that domestic demand should first of all generate economic growth in Poland. In addition, the higher dynamics of imports than of exports implies worsening trade balance, i.e. permanent deficit of domestic savings against investment etc. On the other hand, the elevated annual rise of investment (by about 10%) and slower increase of imports (8,9%) than exports (9,1%) suggest a considerably different approach to growth in Welfes' *optimistic* scenario. In the perspective of rapid membership they find investment and export demand as the "driving forces" of economic development. Moreover, as one of the effect of EU membership they estimate the reversal of trade dynamics (exports increase at higher rate than imports).

5. Interrelated Approach

In order to obtain a more detailed picture of membership consequences for Poland's economy A. B. Czyżewski, W. M. Orłowski and L. Zienkowski attempted to combine the macroeconomic approach with sectoral and regional ones and to measure various economic consequences in a consistent way[12]. They aimed at identifying and subsequently estimating the effects of different integration scenarios with the EU. The scenarios supplemented several policy choices facing decision-makers during transformation process that should end

[12] A. B. Czyżewski, W. M. Orłowski, L. Zienkowski - "Średniookresowe efekty członkostwa Polski w Unii Europejskiej", Integracja Europejska/Monografie, t.6, Instytut Europejski, Łódź, 1998.

with the membership assumed for 2002. Effects of integration depended on these decisions taken during pre-accession period. The broadening of the scope of analysis to regional issues was also something worth stressing.

On the macro level the analysis concentrated on the Poland's medium term economic growth (GDP, consumption, investment, trade) and equilibrium: balance of payments, possible transfers from the EU and inflows of private capital, as well as on real exchange rate, savings, real wages and productivity trends. Some policy recommendations on how to implement the Maastricht criteria were formulated. Another part of the analysis referred to the competitive position and development perspectives of different sectors: trade effects of customs union[13], impact of the single market in industrial goods and consequences of CAP for Polish agriculture. Special attention was paid to the labour market and unemployment balance of integration (mainly due to accelerated restructuring and modernisation of the economy). It allowed to identify the causes of tensions on regional labour markets and to get a picture of the tensions' spatial distribution.

Complexity of research and the need to get consistent results at the lowest possible cost were decisive for methods chosen. The authors applied an aggregated dynamic CGE model and six satellite partial equilibrium models (of Polish foreign trade; of changes in competitiveness and restructuring Poland's industry; of capital flows and FDI; of agricultural policy; of regional effects; and finally the so called consistency check model, based on the concept of sustainable budget deficit and providing convergence of monetary, fiscal, structural and exchange rate policies). They also used the social accounting matrix (SAM) with flow of funds, estimated for 1994.

The combination of CGE model with partial equilibrium models was necessary to ensure the consistency of various elements of research according to special iterative procedure: on the basis of preliminary assumptions (see below), the initial solution of the CGE model was obtained. The findings were applied as the input data to the simulation of each partial equilibrium model. Then, the results generated by these models were used to calculate a new solution of the CGE, which was inserted into partial models again. These steps were repeated until the results converged, i.e. became consistent from the general and partial equilibrium points of view. In consideration of deep structural changes after 1989 the authors tried to avoid estimating parameters on the basis of time series for Poland's economy and used other methods instead (regression, international

[13] These were presented in more detail in: Rezultaty przystąpienia Polski do unii celnej UE (based on report by W.M. Orłowski) in: Analiza i ocena wpływu integracji Polski z Unią Europejską w sferze społeczno-ekonomicznej, RCSS, Warszawa 1998.

comparisons, calibration). They also resigned from building a steady state case as a reference point for simulations.

As the most desirable integration scheme the authors recognised fast negotiations leading to Poland's membership in 2002 with long transition periods ending around 2010. This would require political determination of all sides involved besides strengthening of liberal oriented market reforms and policies in Poland. Therefore they considered three hypothetical scenarios of Poland's integration with the EU:

short-sighted: dynamics of reforms is stopped (no privatising and restructuring); the government avoids unpopular decisions and: increases expenditures and budget deficit, discourages private foreign investors, opts for the longest possible transitional periods for the Polish economy and for maximum EU transfers in the negotiations;

balanced: dynamics of reforms is slowed down, but not stopped; the government tries to ease social pressures stimulated by the restructuring process, behaves friendly towards foreign capital but does not liberalise capital market and slows down privatisation, strives for fast EU membership with relatively long transitional periods and high transfers;

growth-oriented: acceleration of economic transformation; internally the government undertakes structural reforms even at the price of temporary growth in unemployment, limits the budget deficit, privatises the economy; in negotiations with the EU the government accepts relatively small transfers, liberalises the access to the Polish market but secures grace periods for the implementation of the cost increasing ecological and social norms.

The results of simulations have pointed out that the resignation from structural reforms (*short-sighted* scenario) would be the biggest threat for Polish economy. In such a situation an inevitable liberalisation of trade and capital flows would meet many inefficient enterprises unable to compete, neither on the domestic market with imports nor in the single or international markets. Mining; electricity, gas and water supply; production of machinery and equipment would be among the most threatened sectors. As a consequence of the *short-sighted* scenario the position of many industries currently known as leaders of growth would considerably deteriorate. Their production and exports should drop in absolute terms. On the contrary, fast growth of production and exports could occur in branches that would be able to mitigate the external pressure on cost increases thanks to quickly rising productivity (e. g. production of precision instruments, electrical machines and computers).

The consequences of *growth-oriented* and *balanced* options are similar to each other although the first one puts more emphasis on efficiency and the second on social equality. The trade-off between these two aspects of economic policy is

clear but not very sharp. In assumed circumstances all industries would develop, although at varying speeds, so their relative importance in the economy would evolve. The pace of structural change would be only a little faster in *growth-oriented* scenario. It is important to note, however, that in neither of the two scenarios production should drop in absolute terms, in no industry whatsoever. In another words, in each industry the production would expand as a result of integration and proper domestic policies. This may be hard to believe in the light of government efforts to limit the level of activities in, for example, the coal and steel industries. But the simulations point that there will be no big losers of integration in Poland. Inter-industrial restructuring would proceed in conditions of growing production in all branches. Such a situation would facilitate the process of intra-industrial restructuring and adjusting to competition of the single market. The losers must be among individual enterprises, though.

The simulations showed that the most serious challenge for policy makers could result from regional concentration of closing industrial companies and bankrupting farmers looking for jobs in urban areas. Implementing of either scenario would inevitably increase supply pressure on the labour market, especially in voivodships in the Southeast and the East part of Poland. It is worth noticing that the more pro-growth the scenario is, the much more differences in regional effects can be noted (increased gap between Poland A – on the left-hand side of Visual and Poland B – on its right side). From this point of view deep structural reforms should be accompanied by an active regional policy focused on increasing the elasticity of the labour market to make labour force more mobile.

6. Conclusions

The number of research on the quantitative effects of economic integration with the EU is quite small in Poland. Indeed, some of the studies reviewed here do not measure them *sensu stricto* by comparing with non-integration alternatives, but rather show potential results of domestic policies in the integration environment. Their scopes vary and they use distinct analytical tools. They are complementary to one another; yet even taken all together they do not provide a comprehensive after-integration picture. They simply do not cover many important issues like services, labour market, regional aspects, production effects, small and medium enterprises, environmental protection, industry cases, societal impact, etc. Neglecting services seems particularly odd. This is the biggest and strongly protected sector, so that its adjustments may have far reaching impact on the Polish economy.

It is not possible to generalise much on these studies. They focus on different questions and answer them in diverse ways. We cannot say, for example if there is any regularity between the methods applied and the results obtained. We cannot divide the research into more and less suitable or reliable for policy makers, either. It is worth stressing however that in general all the studies reviewed here see the balance of integration effects as positive for Poland. It could be even undervalued because the authors rather did not take into account possible effects of scale for Polish industries in their calculations. These effects are considered among the main economic arguments in favour of integration. In those cases where the scope of researches was similar the numbers provided by some authors on costs and benefits of Poland's joining the EU varied. But it is quite normal in the light of analogous exercises prepared elsewhere for other countries[14].

The lack of interest in estimating integration effects should by no means be interpreted as a symptom of a professional weakness of Polish economists. Their approach towards the measuring of economic effects of integration does not differ from the methods applied world-wide. The studies surveyed here use all standard tools applied by the Western experts: CGE models, partial equilibrium models and macroeconometric models. There would be no problem to supplement them with less sophisticated methods like questionnaire based analysis. Therefore there are other reasons explaining relative indifference in Poland to such "seasonally" attractive economic issue. Little demand from all levels of policy makers may be one of them. The studies sometimes suggest going against popular thinking about economics which is not a comfortable situation for many politicians.

The reviewed research has two characteristic features. First, it consists only of ex ante studies. One could expect that the impact of the European Agreement on Polish economy would be appraised - hopefully with positive conclusions - before starting accession negotiations. Second, it relates mostly to big economic aggregates rather than operating with product groups or with economic agents. Macro analysis dominates over the examination of problems at micro and regional levels. This may be due chiefly to difficulties faced while accessing the statistical data as well as to their deficiency. Still some industries in Poland are very highly concentrated; therefore the statistics for such industry would in fact reveal the situation of its main producer. The Law on Statistics of 1995 excludes this possibility. But as a result the major part of production related

[14] For example, some authors expected that due to establishing CUSFTA Canada would get from –1% to +9% of extra GDP. See: J. Pelkmans (in cooperation with M. Vanheukelen) – The internal markets of North America. Fragmentation and integration in the US and Canada, Research on the "Cost of Non-Europe", basic findings, vol. 16.

statistics are available only at two digits level of the EKD (European Classification of Activities - the Polish version of NACE). More disaggregated figures are confidential although they would be essential for assessing regional developments. Also foreign trade and production data for Poland are not fully compatible yet at lower aggregation levels. The first are gathered for products, the second – for economic agents.

Empirical testing of integration effects could be used to support the negotiators' positions by making their arguments more reliable. But even if the Community imposes rigid accession conditions on candidates and the margin for negotiations is very narrow, there are several additional good reasons for conducting research on economic effects of integration for Poland. It could help shaping the domestic policy needed to adjust the economy to the single market in a less painful way. This is especially important for various sectors and regions of Poland's economy. Rough figures are still better to discuss than pure guesses about macro proportions and the formalised approach may generate additional insights that are imperceptible for intuition. The comparison of experiences of Greece and Ireland prove that membership in the Communities is not enough to ensure fast economic growth. Generally speaking, it seems that the cost benefit analysis could be a useful tool in the process of decision making about integration.