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**DOCUMENTATION OF THE ECONOMIC ANALYSIS PROJECT
FOR THE DEVELOPMENT OF WARSAW**

1. Plan of a Collaboration Project between USAID and the City of Warsaw

The original goal of the USAID was to assist Warsaw in designing feasibility studies for real estate. That involved not only preparation of a specific study, but most of all developing relevant skills among the staff of the Warsaw City Hall, dealing with problems concerning real estate. An appropriate site was pointed out, i.e., the southern zone adjacent to the Ok_cie Airport, to be developed in future. However the USAID expert examined the situation and came to the conclusion that it was impossible to carry out the study, as there was no basic information available on the state of the City's economy and its trends. He therefore suggested that a project be undertaken to create a data base containing information on the social and economic situation of the City, being necessary to design projects which could be facilitated by establishing a special unit at the City Hall to carry out analyses and prepare forecasts for the future development.

Thus, organizational work began. A project for technical cooperation between the USAID and the City of Warsaw was designed. It defined the goals of the collaboration, the scope of USAID assistance, and conditions to be met by either party.

An Economic Analysis Team was appointed and charged with the task to create the data base, to assess the economic situation of Warsaw, and to design forecasts concerning its development. Also a Steering Committee was appointed, consisting of Directors of City Hall Departments dealing with the development of the City, i.e., the Department of the City Development, Department of Business (Economic) Promotion, Department of Land Use Management, and the Investment Department. It was also planned to establish a Group of Users of information about the City, including several dozen organizations and institutions, related to the City by their activity.

2. Organization of the work of the Economic Analysis Team

The Economic Analysis Team consisted of six members. A USAID expert professor David Dowall, specialist in urban economics and real estate markets, was in charge of coordination of the team's work. Other members were: a specialist in urban economics and development projects, Dr. Barbara Sakowska-Knapp, a specialist in town planning, professor Marta Sadowy experts in infrastructure and public utility economics and two young economists, WSE graduates, one of them Jaroslaw Jukiel dealing with the establishment of the data base and data processing, while the other one Grzegorz Jukiel was examining the real estate market.

Following the preliminary division of tasks, the research concept and project plan were designed and presented to the Steering Committee. Following design of the concept and the project plan, who determined the information necessary for its implementation. Working on the prepared set of information, we learned which data was available in source materials published by the Central Statistical Office in Warsaw and in professional

literature, as well as by Offices of Warsaw Districts, Office of the City of Warsaw (the City Hall), municipal enterprises and other institutions, such as, e.g., real estate agencies. As a result, we decided what information should be ordered.

An appropriate order was placed at the Foreign Trade Information Center in Warsaw, and at the Voivodship Statistical Office in Warsaw.

The following information for 1988-1992 was obtained from the Foreign Trade Information Center:

- the value of exports and imports to Poland in total, also for the Voivodship of Warsaw and the City of Warsaw,
- the value of Polish exports, by countries of destination,
- the value of imports to Poland, by countries of origin,
- the value of exports and imports to Poland, to Warsaw and the Voivodship of Warsaw, by categories of goods,
- the value of exports and imports to Poland, to Warsaw and the Warsaw Voivodship, by sectors of industry.

The following figures for 1988-1992 were requested from the Voivodship Statistical Office:

- the number of those employed in Warsaw and in the Warsaw Voivodship,
- the gross and net profitability of the economy of Warsaw (Warsaw businesses) and that of the Warsaw Voivodship, by sectors,
- the number of registered businesses in all the gminas of the Warsaw Voivodship, by branches and sectors of economy,
- declared employment (at the registration) of businesses, by branches and sectors of economy,
- revenues and cost of income acquisition in gminas of the Warsaw Voivodship, by sectors of economy,

- gross value of assets, calculated based on enterprises in all the gminas of the Warsaw Voivodship,
- investment expenditures by categories: construction-installation works, machine and equipment purchases, and other expenditures for all the gminas of the Warsaw Voivodship, by sectors of economy.

While the material we had ordered was being prepared, which took more than two months, we collected and processed data from yearbooks and other publications by the GUS and WUS in Warsaw, figures from various departments of the City Hall, Warsaw gminas and public utilities. We devoted much time selecting and developing appropriate analytical and prognostic methods for the development of Warsaw.

3. Analytical methods

Warsaw as a local socio-economic system, is an element of higher level systems: regional and national. Its development depends not only on internal factors, but also on external conditions. Therefore, an assessment of the economic state of the entire country is a starting point for assessing the state of the Warsaw economy. A detailed analysis of changes occurring in the structure of the Warsaw economy and of trends present in its individual sectors was possible only against this background.

To evaluate the state of the economy of the City, one uses different measures, both reflecting monetary value (local gross product, revenues of businesses, personal income, etc.), and relating to quantity (employment, population, etc.). Having done a thorough analysis of possible uses of various measures under system's transformation in Poland, the team came to a conclusion that the best measure is the number of persons employed. The

selection of this measure was determined by the availability of information and its comparability, which could not be easily provided using monetary measures, not only because of high inflation, but also because of changes in classification and other methods resulting from the adjustment of the statistics to the needs of a market economy and European standards.

The initial task in assessing the state of the Warsaw economy was an analysis of the dynamics and structure of employment changes in the economy of the City. The team carried out the analysis against the background of the national economy, and of that of the Warsaw Voivodship. It should be explained the Polish statistics (GUS) uses two categories of employment, namely: employment and working. The former category includes only those working based on work contracts, while the latter category includes also self-employed, agents, etc. In the analysis we used the broader category of employment.

Financial results achieved as a result of a particular business activity are the main factor determining its development in the market economy. In order to analyze the situation in this respect, we have used the gross and net profitability indicators, calculated accordingly as the relation of the profit before taxes and after taxes versus costs of income acquisition. The analysis of the relation between these indicators in Warsaw and their equivalents nationwide and in the Voivodship has made it possible to evaluate the financial state of individual sectors of the economy in the City.

Despite the system's transformation and concomitant economic recession, not all sectors of the economy were affected by it. In order to present a more clear picture of the occurring transformation processes, we have analyzed how relations between investment outlays and the value of fixed assets in individual sectors of Warsaw's economy were shaped, as compared to the entire country and the voivodship. The way the level of this indicator is being shaped, enables one to assess the dynamics of the development processes occurring in individual sectors of the economy. On the other hand, the indicator of the

relationship between the income and the value of fixed assets, gives some idea about the economic efficiency of investment processes in individual sectors of the economy.

Foreign trade plays an important role in the economy of Warsaw. We have therefore analyzed changes in the structure of the foreign trade of Poland (geographical structure, structure by categories of goods and by sectors), in order to use this background to assess changes in the structure of foreign trade in Warsaw and its influence on the City's economy (the collapse of the eastern market caused a dramatic situation in the electrical engineering industry in Warsaw).

In order to assess the state of the Warsaw economy, we have also used the following coefficients (per capita):

- total investment outlays,
- the value of goods and services sold,
- revenues of local budgets,
- investment outlays from local budgets,
- the value of the share of Warsaw gminas in the personal income tax (relations between the level of this coefficient for Warsaw and that for the entire country, information about the differentiation of personal incomes).

Since Warsaw is very closely related to the rest of the Voivodship by numerous functional links, we have decided to analyze the course of economic processes spatially. We have therefore divided the Warsaw Voivodship into four zones:

1. The Center including the central part of Warsaw (gmina of ródmie_cie)
2. Zone I including gminas surrounding the Center
3. Zone II including gminas adjacent to the administrative boundaries of Warsaw, and gminas located very closely to them (20 gminas in total).
4. Zone III including the more remote, remaining gminas of the Voivodship (27 gminas in total).

At first we decided to examine the dynamics of business activity in the above zones of the Voivodship. To do that, we have used information concerning the number of businesses registered under the REGON system, and the employment declared by them. Then, based on indicators of price changes, published by the CSO (Central Statistical Office), we reduced revenues and costs of income acquisition to comparable prices, in order to define the state of individual sectors of economy more precisely, as the number of those employed used earlier had not fully reflected the scale of the economic breakdown, because of the behavior of state enterprises, ready "to wait and see", i.e., introducing unpaid leaves, earlier retirement, etc. We have treated capital expenditures similarly, in order to be able to examine their dynamics more precisely. The expression of capital expenditures in comparable prices was also aimed to watch the changes of the structure of their type (e.g., predominant purchase of machinery and equipment in the structure of capital expenditures indicates that the development of a given sector is being achieved mainly through an adaptation of the existing premises to new functions, e.g., to assign a factory building for a wholesale warehouse, a party committee building for a bank, etc.).

As far as fixed assets are concerned, in order to analyze them more thoroughly, not only their values were recalculated into comparable prices, but also their productivity was calculated, as well as the relation between the value calculated per plant (plants located in a given region) and the value calculated per enterprise (by the seat of the enterprise's board, e.g., the board in Warsaw, while plants in other voivodships, and not in the same place as the location of the board).

Demographic analysis focused on the trends of changes of the number and structure of the population according to age, natural increase and net migration, changes of household sizes, the structure of qualifications (skills) of those employed, spatial distribution of the population and incomes and expenditures of households, which determine local demand for various goods and services.

The real estate market has turned out to be, for the lack of data, the most difficult element for the project to analyze. Available information on the land has allowed definition of the structure of use and ownership.

There was relatively good information on the housing stock. To assess the situation in this respect, we have utilized commonly used indicators (among others by the GUS).

Information on the hotel base made their general analysis possible. On the other hand, it was most difficult to obtain information on office, commercial (retail and wholesale trade) and industrial space. It was therefore necessary to carry out appropriate research. The primary research methods used were: questionnaire, telephone and face to face interviews and fragmentary publications of the results of research of various real estate agencies.

We have prepared separate questionnaires for different kinds of activity.

The questionnaire concerning the offices included following questions:

1. Location
2. Total and usable area in m^2
3. Rent per m^2 /month in US\$
4. Equipment: heating, water, natural gas, electricity, telephones + number of lines, intercom + number of lines, telexes + number of lines, parking lot + number of parking spaces, elevators, fire protection systems
5. Length of a lease
6. Do they want to change their location, where and when?
7. Preferences: renting or buying
8. What rent do they consider as appropriate (acceptable)
9. Number of employees

The main questions included in the questionnaire for trade were the following:

1. Location

2. Total occupied space, including: commercial, storehouses, offices, social
3. Total number of employees, including: directly in the sales dept., in the storehouse, in the office.

The questions included in the questionnaire for industrial enterprises concerned:

1. Branch of industry
2. Area of the occupied land
3. Production area and number of those employed directly in the production
4. Area of office space and number of those employed in the management and administration
5. Area of auxiliary and social premises and number of those employed there
6. Total number of employees in the enterprise.

The team attempted to select representative samples, i.e., that the sample structure corresponded with that of the existing structure of establishments (e.g., relating to the branch, size, etc.).

Through telephone and face to face interviews the team attempted to obtain similar information as from the questionnaires, to have a control base for questionnaire research results.

The above research has made it possible to calculate indicators for average area per one employee in different sectors and branches of the economy in Warsaw.

The evaluation of the state of infrastructure systems in Warsaw was carried out based on data collected in individual enterprises and in the Technical and Development Departments of the Warsaw City Hall. In evaluating of the situation in each field focused on the analysis of the volume of production (services), the utilization of productive capacity, the level of satisfaction of social needs, efficient operation of the equipment and financial standing of enterprises providing infrastructure-related services, and

developmental problems. The analysis used appropriate sets of indicators (of structure, dynamics, costs, profitability, etc.).

4. Scenarios and development forecasts

Analysis and evaluation of the former trends and conditions, both internal and external, in individual sectors and branches of the economy were the foundation for the design development scenarios. Evaluation of a development potential present in local labor stock, capital and natural environment, with a possibility to mobilize and activate them, was also very important. The differentiation of situations and developmental conditions in individual sectors of the economy in Warsaw and the Voivodship made us adopt this approach.

Prior to developing scenarios for the development of Warsaw, the team conducted a thorough analysis of all available forecasts for the economic development of Poland. The forecasts were designed by different institutions, both related to the central government, like the Institute of Finance and the Central Office of Planning, and those independent from the government, like the Institute of Statistics and Econometrics of the University of Łódź, Polish Economic Society and "The Economist Intelligence Unit." Then, the team analyzed goals for the economic development of Poland. The analyses were designed to create a datum plane on which to design scenarios and forecasts for the development of the economy in Warsaw.

We have designed three scenarios, and based on them, three forecasts for the development of Warsaw and the Warsaw Voivodship.

Under the first scenario, we assumed that trends present in 1988-1992 would be continued till 1997. We did realize that this was rather an unrealistic scenario, but we

wanted to demonstrate a possibility of the occurrence of great developmental disproportions, expressed by an excessive decrease of employment in some sectors of the economy, especially in industry, science and technology, as well as in culture and fine arts, and also expressed by an excessive increase of employment in other sectors, such as finance and insurance, telecommunications and administration.

In relation to the above, we designed Scenario II, taking into account differentiated conditions and possibilities for the development of individual sectors of economy in Warsaw. We thought this scenario was the most probable one, as it took into account the reserves of the production capacity occurring in material production and development barriers for such sectors of the Warsaw economy as trade - the barrier of effective demand and the advancing concentration process, finance and insurance - the barrier resulting from the process of banks' consolidation and limitations of the money and capital market, and telecommunications - the barrier of limited development resources, etc.

Considering the fact that Warsaw is showing greater ability to adapt the changing economic conditions, which is expressed by more advantageous growth rates than the average ones nationwide, and that it has a great developmental potential and some reserves to be used, we decided that the development of Warsaw in the period till 1997 can be faster than that of the national economy. We have therefore adopted Scenario III, assuming for a growth at a pace double, on the average, than that under Scenario II.

Based on the above scenarios, we have designed three variants for the development forecast for Warsaw and the Voivodship.

Variant I of the forecast was the easiest one to design, as it required only to calculate indicators for an average annual pace of changes (increase/decrease) in 1988-1992 in individual sectors of the economy and the extension of the existing trends till 1997.

Variant II of the forecast, based on Scenario II, required additional analyses and assessments. Because of the scope of this report, I shall not present these analyses and

forecast methods in detail, and limit myself to discuss some examples. For example, trade in Warsaw has encountered the barrier of effective demand, as a result of which its profitability decreased from 122% in 1990 to 2% in 1992, and the net profitability from 64% to 0.7%, respectively. On the other hand, the process of concentration was initiated (supermarkets began to emerge), which will cause employment decrease. In relation to this, the pace of the development of trade will be dependent on the dynamics of the increase of demand. Forecasts for the national economic development indicate that the individual consumption will increase by 3% annually. This growth rate could not be used however for the prediction of employment in trade. Since for the period examined (1988-1992), the share of the increased employment in the increased value of sales was 25%, and the remaining 75% of the increase in the value of sales was caused by increased labor productivity. Taking into account the above limitations (the barrier of demand and the concentration process), we have adopted the indicator of 0.2 for the increase of individual consumption (3%), i.e., 0.6% annually for the employment increase forecast.

We have also estimated the rate of the increase in employment in the communal sector services to be 20% of the average indicator of the relation of capital expenditures to the value of fixed assets.

In Scenario III of the forecast we have used indicators 2-times higher than in scenario II, with very few exceptions.

Generally speaking, we have tried to define factors determining the increase of employment in individual sectors of the economy, and as far as possible, define numeric relations between them and the increase (decrease) of employment.

5. Estimation of developmental needs

Economic and demographic forecasts are the foundation to define developmental needs, i.e., the demand for land, apartments, office space, commercial space, space for storehouses, industry and others, as well as the demand for infrastructure. The estimate of these needs is done based on the increase of population in given categories (e.g., number of children at the school age, etc.), number of households, and the increase of employment in individual sectors and branches of the economy, and on appropriate indicators of the average area per resident and per employee. The products of these increases and correspondent unitary indicators of the area define the developmental needs in relation to the area (space). On the other hand, in order to define needs concerning the development of the infrastructure, indicators relating to service consumption per resident and per employee are used and corrected by coefficients of peak demand, in order to define the needs concerning the increase of production capacity and indicators of the length of the network, in order to define the necessary increase of transmission and distribution networks (grids).

In our estimates, we have limited ourselves to define future demand for apartments, office, commercial, industrial and warehouse space. The team conducted these estimates based on scenarios discussed above presenting employment forecast and unitary indicators of the area per employee. On the other hand, to estimate the number of new apartments, we have used the assessment of the development capacity of housing construction, especially the financial capacity.

6. Costs of the development

The costs of the development include: the labor and capital required for the construction of necessary buildings, provision of appropriate machinery and equipment, and the cost of

land including the cost of infrastructure development. Various institutions are burdened with these costs. From the perspective of the city government, the cost of the development of infrastructure and other public services to be financed by the Municipality, is significant.

In this analysis, the team limited themselves to estimates of the costs of infrastructure development. The estimate includes two elements: 1) cost of the necessary modernization of the infrastructure, and 2) cost of the extension of the network and the increase of the production and service capacity.

The team defined the cost of modernization of the infrastructure based on estimates of need conducted by the Technical and Development Departments of the City Hall and by the public utilities.

We have estimated the cost of the extension (of the network), using the method presented above (item 5) to calculate development needs and unit costs borne to increase production capacity in individual branches of the infrastructure, and unitary costs of the network construction.

It has resulted that the estimated costs of infrastructure development go far beyond the financing capacity of the municipal budgets of the Warsaw gminas. However, if we subtract the cost of development of those infrastructure systems, which can finance their development from their own income (telecommunications, electrical power engineering and gas engineering), then the prospects of financing the development of the remaining infrastructure systems are much improved, although the City alone will not be able to cover these costs from its own revenue.

7. Assessment of the intentions of the project

A result of the implementation of the project, was the creation of the initial data base, consisting of 11 diskettes containing more than 100 data sets including statistical data on different sectors of the City's economy and demography. Analyses and development forecasts were used to design a report, published in two languages: Polish and English. The 250 copies of the Polish version were quickly distributed, within a few weeks. Since that time, both the authors and the publisher have received many phone calls from local government officials and consulting firms, interested in buying the report. This demonstrates the value of the report and its practical usefulness. One should bear in mind that this is the first such a broad and comprehensive elaboration of both problems related to the local development, and presentations of specific methods for analyses and forecasts, and their results, conducted in Poland.

Other goals of the collaborative project, such as institutionalization of a team in charge with economic analyses in the City Hall, and training appropriate City Hall personnel to conduct such analyses, were not achieved to a satisfactory degree. In the opinion of the author, the main reason for this is that the project was completed shortly before the local government elections. At that time, the primary City decision makers were preoccupied with the election campaign. After the election, the municipal authorities had to struggle for quite a time with problems resulting from the new administrative division and the new form of government in Warsaw. Thus, issues concerning the institutionalization of the analysis team were postponed. Another mistake was the delayed inclusion of City staff in the operation of the Economic Analysis Team.

To evaluate the collaboration of our team with the Steering Committee one should stress that it was inspiring and beneficial for the Team's work. On the other hand, even though the Group of Users was formally established, it remained inactive. One can only hope that a similar proposal will raise more interest in future.