The Possible Economic Effects of EU Policy Funds Inflow to Croatia

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Abstract

The current situation indicates that Croatia is definitely on the path towards joining the EU. The most visible advantage of acquiring candidate status and, later, joining the EU is the financial support which the EU places at the disposal of candidate and member countries in the form of the various funds that constitute part of its policies.

This paper is intended to systematically describe and analyse the effects and benefits of different policy expenditures from various EU sources that are expected in Croatia. These differ depending on the various phases in the EU accession process: from the present situation, where the EU's CARDS programme is active in Croatia, to the Pre-Accession Strategy phase with its policy instruments Phare, ISPA and SAPARD and the corresponding expenditures, to post-accession appropriations for commitments and payments available to member states via the Common Agricultural Policy, the Structural Operations are divided between the Structural and Cohesion Funds and Internal Policies. It is assumed that these expenditures will, in any phase, affect general economic performance and overall employment patterns, and that their impact is likely to differ on a sectoral basis.

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In order to provide a sound methodological foundation for studying such impacts, this paper offers a systematic presentation of current EU financing in Croatia, as well as of pre-accession and possible (estimated) post-accession funds that are expected to be available to Croatia, with corresponding projected expenditure items. It also provides sound argumentation for its estimates through a quantified description of policies and, where applicable, the assumptions underlying the figures presented. EU support for Croatia is analysed based on an analogy with the previous ten candidate countries.

The impact analysis on basic economic variables has been performed using the I-O model under different scenarios concerning various projected funds inflow to Croatia, and depending on Croatia's varying status at different points in time: current status, EU candidate status, and EU membership. The annual amounts (real and estimated) of the aforementioned funds have been injected into national I-O matrices so as to obtain estimates of the impact generated by differently defined scenarios. The scenarios presented in this paper illustrate maximum impacts, as they were made under the assumption that EU expenditures will be fully absorbed, and also exclude anticipated national payments towards the EU.

The analysis has been performed in a static framework, and estimates only relative rates of change in output, income and employment due to newly available funds inflow and, consequently, increased final demand; it does not refer to absolute values. In fact, it measures the impacts of the described funds inflow in terms of delta change compared to the current situation. Therefore, only the effects of EU policy funds inflow for one year were estimated, and an analysis of cumulative effects was not performed.

The fact that the latest national I-O table for Croatia used in this paper's impact analysis dates from 1997, and that it was produced using the RAS method based on a direct requirements matrix for the year 1987, could represent a limitation in assessing precise values. However, for such an illustrative analysis it is sufficiently representative, and provides relevant results.

1 Introduction

The latest news informs us about a new candidate country for EU membership. The Republic of Croatia was granted the status of an official candidate for membership in the European Union on Friday, 18th June 2004. This has opened the possibility of using resources from EU Pre-Accession Funds and, subsequently, of "post-accession" EU financial support. It marks a historical event for the Republic of Croatia, and the date for beginning its membership negotiations has been fixed for early 2005.

The paper intends to analyse the effects and benefits of EU pre-accession and post-accession funds inflow on Croatia's economic performance. In order to present the results adequately, it has been structured as follows. The introductory section gives a general description of EU relations with Croatia, specifically of milestones in relations between the EU and Croatia since the very beginning of their co-operation. The general characteristics of the available national I-O table, and the corresponding assumptions of the methodology used for analysis in this paper, are presented in the second section.

The first step in an I-O analysis, based on the injection of pre-accession and projected post-accession funds into the national I-O matrix, is to identify the vectors of the modified final demand. EU pre- and post-accession financial support has been carefully examined and presented in the first part of the third section, together with an estimate of EU post-accession funds for Croatia. Following this, the different stages on the way towards the EU membership and the sectoral availability of different policy funds are presented in terms of the relevant scenarios. The projected funds are allocated to sectors of economic activity based on the objectives of each policy. In this way, an impact analysis for various funds may be carried out under the relevant scenarios.

The fourth section provides the results of the impact analysis and observations as to each policy's implications. These results present the impact of EU policies on Croatia's economic performance, and are compared to results obtained for Slovenia and Romania using the same methodological approach within the REAPBALK project.

The last section contains concluding remarks on the results and objectives of this paper.

1.1 EU relations with Croatia from 1991 to 2001

As already mentioned, the current situation, in which Croatia is on a new path towards EU membership, represents the starting point for the analysis performed in this paper. Croatia is a new candidate country, and this opens new possibilities for using resources from EU policy funds. The following section illustrates the steps taken by the Republic of Croatia on its path towards EU accession, in order to provide insight into past and present circumstances of its relations with the EU.

Milestones in relations between the EU and Croatia[1]

- 1997: Regional approach. The EU Council of Ministers establishes the political and economic conditionality for development of bilateral relations with Croatia.
- 1999: The EU proposes a new Stabilisation and Association process (SAP) for the five countries of South-east Europe, including Croatia.
- 2000: Parliamentary and presidential elections in January 2000 result in a change of government in Croatia, ushering in a new political climate. The EU responds as follows:
  - February: Establishment of an EU-Croatia Consultative Task Force, which provides Croatia with expertise and technical assistance in preparing for the Stabilisation and Association process.
  - March: Upgrading the Office of the EC Special Envoy to Croatia in Zagreb to a permanent Delegation of the European Commission.
  - 24 May: The European Commission adopts a positive feasibility report on opening negotiations for a Stabilisation and Association Agreement (SAA).
  - June: The Feira European Council announces that all the SAP countries are "potential candidates" for EU membership.
  - September: Extension of duty-free access to the EU market for Croatian products.
  - 20 November: Opening of SAA negotiations within the Zagreb Summit.
- 2001: First year of the new CARDS programme:
  - 29 October 2001: Signing of the SAA, which provides for wide-ranging co-operation, and is to guide Croatia in its gradual approach towards EU structures. The SAA includes establishment of a framework for political

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[1] Available at: http://europa.eu.int/comm/external_relations/see/croatia/index.htm

dialogue and promotion of economic and trade relations, with prospects for establishing a free trade area after a transitional period of 6 years.[2]

> At the end of 2001 the European Commission adopts a country strategy for Croatia, covering the period 2002-2006 and providing a framework for EC assistance. This assistance is to be delivered via the CARDS programme. The strategy paper is complementary to activities by EU member states and other donors.

- 2002: An Interim Agreement covering trade and trade-related measures is concluded in parallel with the SAA, and enters into force on 1 March 2002. The Interim Committee meetings are held in April 2002 and April 2003.

- 2003: As a further step in the development of EU-Croatia relations, Croatia submits an application for EU membership on 21 February 2003. On 14 April 2003 the GAERC Council requests that the Commission prepare an opinion on Croatia's application.

- 2004: On 18 June 2004 Croatia becomes a candidate for EU membership.

Financial statistics from 1991 to 2001

Between 1991 and 2000 Croatia received €367 million in EC assistance, with 65% going to humanitarian aid. The other major programme was refugee return. Most of the assistance provided to Croatia after 2000 has been implemented as part of the Community Assistance for Reconstruction, Development and Stabilisation (CARDS) Programme.

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[2] The agreement also provides a basis for cooperation in the fields of justice and home affairs, and identifies the acquis communautaire which Croatia will have to adopt in order to effectively participate in the European integration process.

Table 1. 1991-2001 EC assistance to Croatia – allocations in millions of Euros (commitments)	1994	1995	1996	1997	1998	1999	2000	2001	Total
OBNOVA*	0.10	0.30	11.70	10.30	9.00	11.50	20.34	60.00	123.24
ECHO humanitarian aid**	204.80	38.40	21.15	14.50	6.95	6.50			292.3
Media	0.09	0.31	0.72	1.67	0.59				3.38
Democracy and human rights			0.70	2.20	0.60	0.21	0.97	0.50	5.18
Specific activities***					1.00	1.42	1.81	1.00	5.23
TOTAL	204.99	39.01	34.27	28.67	18.14	19.63	23.12	61.50	429.33

Source: http://europa.eu.int/comm/external_relations/see/croatia/index.htm *(15.09.2004.)*
*Note: * The figure from 2001 refers to CARDS first year funding. ** The figure from 1994 includes the total allocated funds under ECHO from 1991 to 1994. *** Including Demining and Tempus 2000.*

2 General Characteristics of the Methodology Used in this Analysis

In order to evaluate the impacts generated by various EU financial mechanisms and obtain information about their economy-wide effects, we decided to apply simulation using an Input-Output (I-O) model. An I-O table, which provides a detailed snapshot of I-O linkages within the economy, can be used to predict the consequences of any planned and potential changes in demand for an economy's output.[3] In this respect, it was deemed to be a useful tool in assessing the potential impact of external shocks to the economy, such as EU budgetary transfers following accession. The immediate results of such an analysis provide information about additional output created by increased final demand. The effects of the simulated policies on final demand (components of the "shock vectors") are presented in Table 5.

Once all the vectors of final demand have been estimated, the I-O model is applied to assess overall impacts in terms of income, employment and output produced by different scenarios.

Some general characteristics of the available national I-O table and the assumptions of this methodology are noted before presenting the aforementioned relevant scenarios.

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[3] The main virtue of the I-O model is its ability to provide multipliers indicating linkages between sectors of the economy. Nevertheless, these results have to be taken with caution, due to restrictive assumptions underlying the I-O technique (static character, linear production function, no impact of scale economies, no substitution, infinitely elastic supply).

2.1 Characteristics and Aggregation of National I-O Table Used in Impact Analysis

The national I-O table used dates from 1997, and has been derived using the RAS method, based on the direct requirements matrix from the year 1987. This was the last year when a national I-O table was calculated based on collected data and the other relevant information needed to construct such a table.

Table 2. Summary of characteristics of the available national I-O table	
I-O table	**Croatia**
Number of sectors	Symmetric 60x60
Technology assumption	Industry-technology assumption Product-by-product
Valuation	Basic values, current prices
Year	1997
Intermediate flows	Domestic

As mentioned in the previous section, the estimated vectors of final demand are used for impact analysis, hence an allocation of EU funds based on sectors of economic activity is required. A precise sectoral allocation of EU funds across 60 sectors of economic activity would be difficult to perform. Therefore, since the analysis is illustrative, and for the sake of giving relevant and observable results, the national table was aggregated into 15 sectors.[4]

2.2 General Assumptions of the Analysis Presented in the Following Section

Before presenting the results of the analysis, its assumptions, which represent some of the limitations of the I-O approach, should be noted:

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[4] Aggregation into the fourteen sectors that are most frequently used in national statistics and a fifteenth sector including other sectors with a significant number of employees. These sectors are: Agriculture; Manufacture of Food Products; Textiles and Clothing; Wood Products; Chemical and Metal Products; Machinery and Motor Vehicles; Furniture; Other Manufacture; Electricity, Water and Gas; Construction; Trade and Hotels; Transport; Financial Services and Real Estate; Public Administration, Education and Health Services.

- the scenario analysis is static, and calculates the effects of different EU policy instruments on basic economic variables of the national economy, measured as delta change compared to the baseline scenario (current situation);
- therefore, only the effects of inflow of funds from each EU policy instrument in each separate year have been measured, and calculations of cumulative effects were not performed;
- the analysis does not refer to a specific year, but rather to an annual inflow of funds and its effects on the national economy and its current economic structure;
- this analysis predicts the possible impact of EU funds on the national economy as net inflows, neglecting national co-financing and later (post-accession) contributions (obligatory national payments) to the EU budget.

3 Analysed EU Policy Instruments and Relevant Scenarios for Impact Analysis

EU policy instruments can be divided first of all based on different programme periods, and then based on different policies referring to different objectives and priorities. This paper presents the amounts projected for Croatia for each programme period analysed: from the CARDS programme currently active in Croatia, the pre-accession instruments that were available to the former EU candidate (EU 10) countries, and the main categories of Community expenditures under different headings.

3.1 EU CARDS Programme and Pre-Accession Assistance

An impact analysis using the I-O model has been carried out based on different scenarios regarding the various policy instruments that will be available to Croatia in the pre-accession period[5] and the currently available CARDS funding.

The policies considered are listed in Table 3. A description of policy instruments and a corresponding financial breakdown are given below.

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[5] The average annual amounts for allocation of funds to Croatia under Pre-Accession Strategy instruments in the period 2005-2006 were used to make these calculations. The amounts targeted for Croatia are available at:

http://europa.eu.int/comm/enlargement/report_2004/pdf/strategy_paper_en.pdf

Table 3. **Projected EU policy funds inflow at the national level**		
	Average annual amounts	
	in millions EUR	**in thousands HRK**
Currently available		
CARDS	63.0	475.65
Pre-accession		
ISPA	30.0	226.5
Phare	80.0	604.0
SAPARD	12.5	94.4
TOTAL - pre-accession	122.5	924.9
TOTAL (pre-acc. + CARDS)	185.5	1,400.55

CARDS Programme

A new programme called CARDS (Community Assistance for Reconstruction, Development and Stabilisation) was adopted by Council Regulation (EC) No 2666/2000 of 5 December 2000. The programme's wider objective is to support participation by the countries of the Western Balkans (Albania, Bosnia and Herzegovina, Croatia, Serbia and Montenegro, and the Former Yugoslav Republic of Macedonia) in the Stabilisation and Association process (SAP).[6]

Community assistance focuses on democratic stabilisation, economic and social development, justice and home affairs, assistance in public administration reform and implementation of the SAA, the environment and natural resources.

Through the CARDS programme, the European Commission has allocated a budget of €189 million to Croatia for the period 2002-2004, to support the country's efforts towards European integration[7]. Croatia received €60 million from the 2001 budget, which represents a more than threefold increase over previous years.

Ongoing EU support for Croatia under the CARDS programme was included in the analysis, since it is still not clear whether this will be replaced by pre-accession policy

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[6] The Stabilisation and Association Process is the cornerstone of the European Union's policy in the region (the Western Balkans). It seeks to promote stability within the region while also facilitating its closer association with the European Union. A key element of the SAP for countries that have made sufficient progress in terms of political and economic reform and administrative capacity is a formal contractual relationship with the EU, which takes the form of a stabilisation and association agreement.

[7] The CARDS 2002-2004 Multiannual Indicative Programme for Croatia is given in the Annex, Table A1.

instruments, or will continue to be granted to Croatia until the end of 2006. The existing financial framework of CARDS in Croatia has been analysed, with average three-year amounts used in the impact analysis.

Pre-Accession Instruments[8]

In order to assist countries that have applied to become members of the European Union in carrying out the reforms required for membership and preparing themselves to benefit from EU funds upon accession, the EU provides financial assistance as part of its Pre-Accession Strategy through three different programmes: SAPARD, ISPA and Phare.

The SAPARD programme supports agricultural and rural development, and comes under the responsibility of the Directorate-General for Agriculture. The programme envisages implementation of four measures: (i) support for investments in agricultural holdings (33.5% of funds); (ii) support for investments in the food processing industry (38.3%); (iii) support for economic diversification of farms (tourism and crafts) (13.4%); and (iv) support for development of the rural infrastructure (13.7%). The remaining 1% of funds is designated for technical assistance. In the analysed scenario, 100% absorption of these funds is envisaged.

The second form of pre-accession support is the ISPA programme, which deals with large-scale investment support in the environment and transport. This programme is meant to be a predecessor to the type of investments carried out by the Cohesion Fund. As indicated by the ISPA reports for EU 10, about 54% of total expenditures are designated for investments in the environmental infrastructure. Most of the remaining support (45%) goes to investments in the field of transport, mainly upgrading the railway network.

The Phare programme applies to acceding countries and candidate countries from Central and Eastern Europe, and principally involves institution-building measures (with accompanying investments) as well as measures designed to promote economic and social cohesion.

As a candidate country, Croatia should benefit from all three pre-accession financial instruments. Taking into account the need to adequately prepare Croatia for accession,

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[8] Total average annual amounts of pre-accession funds distributed among the former ten candidate countries are given in the Annex, Table A2.

on 6 October 2004 the Commission recommended that €105 million (€80 million for Phare and €25 million for ISPA) be allocated to Croatia in 2005, and €140 million in 2006 (€80 million for Phare, €35 million for ISPA and €25 million for SAPARD).

If we compare the amount of funds allocated to countries that were previously eligible for such support (the former ten candidate countries) to those recommended for Croatia, the latter are seen to be as expected. Bearing this in mind, the amount of pre-accession support could be estimated on the basis of a comparison to these ten countries.

The allocation of funds to these countries was based on different geographical and economic indicators explained in several EU documents. These indicate that the allocation of ISPA and Phare funds is mainly based on a country's population and GDP per capita. For SAPARD fund allocation, the weights used are agricultural land area, farming population and GDP per capita. If we use these indicators for a correlation between Croatia and the former ten candidate countries, we find that Slovakia is the one most like Croatia. Consequently, the possible amount of Phare, ISPA and SAPARD funds for Croatia could be estimated by means of a correlation with Slovakia[9].

The weights that could be used for projecting Phare and ISPA funds inflow are the average annual amounts of these funds per capita in Slovakia, while for SAPARD they are the average annual amounts allocated via this instrument per one hectare of agricultural land in Slovakia. Annual budgets could also be estimated, assuming that the EU's annual budget for these funds is flexible and can vary in small ranges, and that Croatia, as a candidate country, has a status equal to that of the ten former candidate countries.

The results of projections of these funds under the aforementioned assumptions are as follows. For ISPA, funds inflow amounted to €38 million per year, which is 20% larger than the recommended average two-year amount of €30 million. As the annual budget for ISPA was 1.040 billion Euros, and the annual amounts for candidate countries depended on the number of projects signed per country and the European Commission's estimate of eligible value, the total annual amount of the ISPA budget for candidate countries varied over a three-year period (2000-2003). Therefore, it has been assumed that variations of the projected figures could be expected based on changes in the annual ISPA budget.

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[9] See Grčić, Mrnjavac and Petković (2004, pp. 10-11).

The resulting average annual allocation of projected Phare funds is €54 million. The recommended average annual amount for a two-year period is €80 million. These figures differ by 32%, the recommended amount being larger probably because of Croatia's need for accelerated progress towards membership and economic and social cohesion, as well as institution-building.

SAPARD funding is projected at €8.7 million per year, based on the total area of agricultural land. As the share of agricultural employment and agriculture in the GDP using these indicators for projecting SAPARD funds is two times higher for Croatia, it is normal to expect the amount to be even higher. This is confirmed by the recommended annual allocation amount of €12.5 million for a two-year period.

This example of comparison with Slovakia's pre-accession fund availability yields an annual total of €100 million for Croatia, while the recommended amount is €105 million for 2005 and €140 million for 2006, for an average annual amount of €122.5 million. According to the estimate of inflows of funds presented and analysed here, it is logical to project post-accession funds on the basis explained in this section.

3.2 Financial Framework for EU - EU Funding

Following accession, new EU countries are entitled to various community funds. Most EU funding is not paid directly by the European Commission, but rather via the national and regional authorities of the member states. This is the case for payments under the Common Agricultural Policy as well as most payments under structural policy financial instruments (European Regional Development Fund - ERDF, European Social Fund - ESF, European Agricultural Guidance and Guarantee Fund - EAGGF and Financial Instrument for Fisheries Guidance - FIFG), which, in money terms, make up the great bulk of EU funding.

The main categories of Community expenditures are divided into headings; each of these headings carries an amount of appropriations and payment commitments for each year (see Table 4, which gives estimates of these expenditures for Croatia).

Table 4. **Estimated annual EU expenditures in Croatia**		
SOURCE	**in millions EUR**	**in thousands HRK**
EAGGF- Market measures	39.41	297,519.1
EAGGF- Compensatory Direct Aids	65.25	492,603.5
EAGGF - Rural development	83.43	629,896.5
Total heading 1	188.09	1,420,019.1
Structural Funds	170.42	1,286,701.2
Cohesion Fund	45.52	343,691.1
Total heading 2	215.94	1,630,392.3
TOTAL	404.03	3,050,411.4

Source: Authors' calculations based on data available from
http:europa.eu.int/comm/budget/pdf/financialfrwk/copenhagen_package/webtablesEN.pdf
EXR EUR 1 = HRK 7.55

For the analysis given in this paper, the 2004-2006 EU programming period was taken as the benchmark for projections of Community expenditures to Croatia.[10] Post-accession funds are projected using the same weights presented in the previous section for illustrative estimates of pre-accession funds. The average two-year (2005 and 2006) amount of EU budgetary resources for Slovakia was taken into consideration, with average annual amounts for Croatia being projected using the population ratio between Croatia and Slovakia.

The corresponding EU budget appropriations for payments under internal policies (heading 3) and the projected annual amount of EAGGF market measure expenditures were not included in this impact analysis.

As regards *Structural Funds*, EU assistance concentrates on a limited number of priorities and measures. The first priority is designated for 'promotion of the productive sector and competitiveness', and is to be delivered via five measures financed by the *ERDF*: (i) innovative environment; (ii) promoting the development of tourist destinations; (iii) improving the enterprise support environment; (iv) economic infrastructure; and (v) public services related to development of the economic infrastructure.

The second priority deals with 'knowledge, human resource development and employment', and will be delivered via four measures financed by the *ESF*: (i)

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[10] The Financial Framework for Enlargement 2005-2006 - Indicative allocation of payment appropriations: Copenhagen Package, used as the basis for projections, is given in the Annex, Table A4.

developing and promoting active labour market policies; (ii) facilitating social inclusion; (iii) lifelong learning; and (iv) fostering entrepreneurship and adaptability.

The third priority is given to 'restructuring agriculture, forestry and fisheries'. It will be delivered via five measures financed from the Guidance section of the EAGGF and two measures financed from the Financial Instrument for Fisheries Guidance (FIFG). The *EAGGF Guidance*-assisted measures foreseen are: (i) improving processing and marketing of agricultural products; (ii) investments in agricultural holdings; (iii) diversification of agricultural activities and activities close to agriculture; (iv) investments in forests to improve the economic and ecological value of forests and (v) marketing of quality agricultural and food products. The *FIFG*-assisted measures foreseen are: (i) modernisation of existing fishing vessels and small-scale coastal fisheries and (ii) development of aquaculture, processing and marketing.

It is envisaged (from EU 10 Country Reports) that 55% of total public expenditures will be related to ERDF measures, with allocations to ESF, EAGGF Guidance, and FIFG measures amounting to 30%, 14%, and 1% of total public expenditures, respectively. These shares have been taken into consideration when estimating their effect on various sectors in terms of changing the final demand vector. The total amount of structural funds for Croatia is estimated to be €170.42 million.

Activities eligible for support from the *Cohesion Fund* are defined within an overall development strategy for transport and environment. The amount for which Croatia could be eligible, as estimated in this paper, is €45.52 million. This strategy provides coherent and integrated information about planned investments in the transport and environment sectors, and defines participation by the Cohesion Fund in these investments. Total expenditures from the Cohesion Fund attribute 50% to transport and 50% to environmental projects. The bulk of expenditures from the Cohesion Fund in the field of transport pertains to railways (62%), whereas investments in motorways and ports amount to 32% and 5%, respectively. Environmental investments from the Cohesion Fund pertain to waste management (49%) and water management (51%).

The *EAGGF* can be divided into three main components: *direct payments, market interventions and guarantee-type rural development measures*. The total estimated amount for Croatia under this heading is calculated at €188.09 million.

Direct payments are treated in the scenarios in a simplified way. It was decided that the analysis would simulate the two extreme options of fully decoupled payments (all direct payments go to household incomes in agriculture) and fully coupled payments (all payments go to investments in agriculture). These two extreme cases provide a framework which reveals the differing effects of coupled and decoupled payments.

Compared with previous reforms of the CAP, the introduction of decoupled payments[11] implies a radical change of instruments and a fundamental change in the institutional framework governing EU agriculture.[12]

Market interventions are also part of the *EAGGF - Guarantees*. These measures are about to be implemented within the framework of the Common Markets Organisation (CMO).

Certain rural development measures, i.e. the 'CAP Accompanying Measures', are allocated under the *EAGGF - Guarantees / Rural Development* heading. Considerable funds available for the implementation of these measures are allocated via the following: (i) compensatory allowances for farming in Less Favoured Areas – LFA; (ii) agro-environmental measures; (iii) early retirement schemes; and (iv) adaptation of farms to EU standards.

The Definition of Relevant Scenarios

The impact analysis starts with scenarios, which allow us to investigate the additional, or marginal, effect of each of the different scenarios and accession components. The scenarios represent one point in time and one special situation regarding fund availability, and the results derived by the I-O model show the separate impact of each such scenario on the current economic structure captured in the I-O table.

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[11] The CAP reform adopted by EU farm ministers on 26 June 2003 completely changed the way the EU supports its farm sector. Coupled direct payments were mainly oriented towards supporting agricultural production, and were strongly linked with the programme benefit and the decision on production volume i.e. market conditions. They have been replaced by the new CAP (decoupled direct payments), which is geared towards consumers and taxpayers, while giving EU farmers the freedom to produce what the market wants. Theoretically, decoupled payments do not change market returns and, therefore, do not favour investments in farming relative to off-farm investments. However, if farmers are facing financial stress or credit constraints, payments may stimulate investments which would not otherwise materialise, by providing farmers with the necessary liquidity or collateral.

[12] The data on CAP reform may be found at:

http://europa.eu.int/comm/agriculture/capreform/index_en.htm

The scenarios performed in this analysis of the effects on economic development are as follows:

Scenario 1 - CARDS

- represents the current situation and includes only the inflow of CARDS funds;

Scenario 2 - pre-accession assistance

- takes the amount of pre-accession funds inflow into the impact analysis;

Scenario 2a - Scen. 1 + Scen. 2

- an alternative to Scenarios 1 and 2, including the cumulative use of pre-accession funds and currently allocated CARDS funds[13];

Scenario 3 - "partial absorption" of funds

- this scenario assumes EU accession but a lower level of absorption of funds (in comparison to Scenario 4). Pre-accession support is omitted from this scenario since a country (region) cannot be eligible for support from both pre-accession and full-membership-related policy instruments.

The assumed absorption levels are:

EAGGF - Guarantees: 0.85 direct payments - assumed to be *fully coupled*, 0.7 rural development (Guarantees); *Structural Funds:* 0.5 EAGGF Guidance, 0.5 ERDF, 0.5 ESF; *Cohesion Fund:* 0.5.

Scenario 3a

- a variant of scenario 3 which assumes that direct payments are *fully decoupled*, and therefore the total amount is transferred towards the final demand of households;

Scenario 4 - "full absorption" on accession

- this is the most optimistic scenario, stemming from the assumption that all available funds will be absorbed by the country. This scenario does not take pre-accession funds into consideration, and the impact analysis refers to the effect of "post-accession" funds inflow on the current baseline situation. The direct payments are considered to be *fully coupled;*

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[13] By financing support to Croatia from pre-accession aid, the corresponding appropriations originally foreseen under the CARDS programme for 2005 and 2006 can be removed, but there are still ongoing projects under CARDS from previous years (2002, 2003 and 2004) that will be used during the programming period 2005-2006.

Scenario 4a

- this is a version of scenario 4, with the assumption that direct payments are *fully decoupled*.

3.3.1 Sectoral Allocation of Funds Under Each Defined Scenario   - Increase of Final Demand

By now it has been made clear that when the output multiplier vector is calculated, the overall change in production due to a one-unit variation in the final demand can be quantified. In spite of restrictive assumptions, the I-O analysis represents an effective tool to quantify the impact on output and, by extension, on income and employment resulting from a change in final demand relative to a given sector. Therefore, for further analysis we require vectors of final demand. For each scenario the total change in final demand was calculated; the next step was the distribution of different EU expenditure typologies among sectors represented within the national I-O table.

Each policy instrument was allocated to the specific sectors towards which they are primarily oriented according to the main fund objectives (see Section 3.2). Concerning policy support to investments (i.e. structural funds), it was necessary to identify the sector's policy priorities and measures addressed to them. Then, using specific ratios from the EU's sectoral allocations for each instrument, the distribution of funds among sectors was completed.

When direct payments were considered, it was necessary to distinguish decoupled from coupled direct payments. In the first case, it was assumed that farmers would spend income buying goods and services or investing in other sectors. The simplest solution for allocating direct payments employed in this paper was to suppose that farmers would spend all their money buying goods and services. In the second case, it was supposed that all income would be spent on investment in the agricultural sector.

The estimated sectoral increase of final demand due to projected EU funds inflow is presented in Table 5 according to the relevant scenarios, while the distribution of funds among sectors per each policy instrument analysed is given in the Annex, Tables A5 - A6.

Table 5. **Projections of the change in final demand - specific scenarios for Croatia ( ) FD)**

Sectors	Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
1 Agriculture	0.00	3,208.75	3,208.75	150,773	135,799	199,827.4	182,210.5
2 Manufacture of Food Products	0.00	0.00	0.00	93,433	90,749	127,188.6	124,030.1
3 Textiles and Clothing	0.00	0.00	0.00	0	13,471	0.00	15,848.7
4 Wood Products	0.00	0.00	0.00	0	0	0.00	0.00
5 Chemical and Metal Products	0.00	0.00	0.00	70,541	60,587	85,579.8	73,868.4
6 Machinery and Motor Vehicles	0.00	30,195.28	30,195.28	117,656	94,847	153,748.7	126,914.6
7 Furniture	0.00	0.00	0.00	0	12,890	0.00	15,164.9
8 Other Manufacture	59,125.0	1,495.84	60,620.84	117,656	59,204	153,748.7	84,982.4
9 Electricity, Water and Gas	24,250.0	0.00	24,250.00	25,781	42,908	38,964.1	59,113.8
10 Construction	105,000.0	162,183.44	267,183.44	678,355	636,483	1,196,247.6	1,146,987.3
11 Trade and Hotels	18,750.0	0.00	18,750.00	4,066	27,368	8,132.0	35,545.8
12 Transport	0.00	101,925.00	101,925.00	132,639	117,211	235,439.9	217,288.4
13 Financial Services and Real Estate	0.00	21,866.69	21,866.69	156,278	199,481	302,477.4	353,304.9
14 Public Administration, Education and Health Services	265,375.0	604,000.00	869,375.00	127,659	132,054	251,538.1	256,709.5
15 Other	0.00	0.00	0.00	0.00	51,785	0.00	60,923.0
TOTAL	472,500	924,875	1,397,375	1,674,837	1,674,837	2,752,892	2,752,892

Notes: In thousands HRK.
EXR EUR 1 = HRK 7.55

4 Results of the Impact Analysis

4.1 Effects on National Output Level

The most straightforward output of a scenario analysis with the I-O model is change in gross output by sectors. The main results representing change in gross output as a percentage of total effects for the main sectoral aggregates (agriculture, industry, services) are presented in Figure 1.[14]

This illustrates well the results in terms of the sectoral structure of total output change per each defined scenario.

The results suggest that in the pre-accession period an output increase will occur in the services sector. This is due to projected inflow of funds under the CARDS and Phare programmes and the objectives which these cover.

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[14] More detailed results, i.e. change in gross output in absolute terms and the percentage of total effects for the main sectoral aggregates, are presented in the Annex, Table A7.

Figure 1. **Change in gross output as a percentage of total effects**
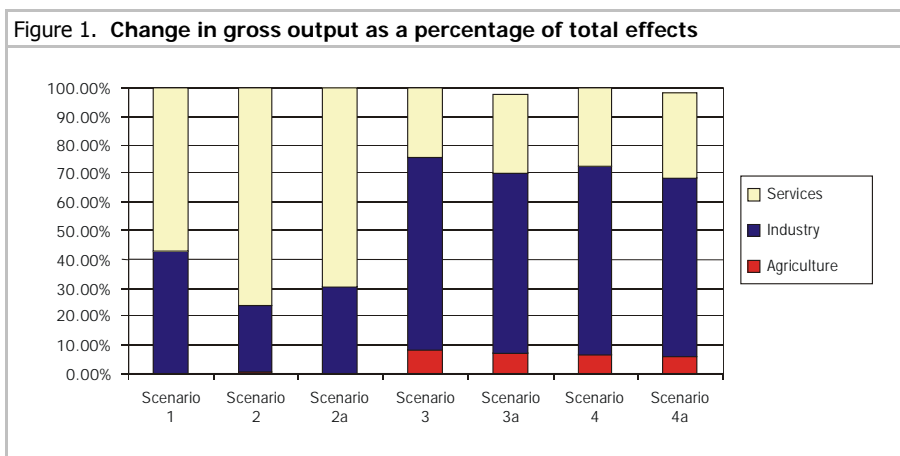
Source: Authors' calculations based on EU funds inflow defined in scenarios (see Annex, table A7).

After this period, possible accession brings a change in the structure of effects. A significant drop compared to pre-accession period occurs in terms of effects on services. The share of services in terms of the change in gross output decreases to half its initial value. The post-accession period shows an increase in the share of industrial output, with construction showing a similar share in industry's total output change. The highest change is in the share of agricultural output, which increases from zero to eight percentage points.

Besides an absolute increase of output compared to the year of the available I-O table, the model provides insight into relative changes in aggregate output. Results for the main sectoral aggregates are presented in Table 6, whereas more detailed results are presented in the Annex, Table A8.

Table 6. **Simulation results: percentage changes in total output by policy scenarios**

Sector	Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
Agriculture	0.00%	0.02%	0.02%	1.10%	1.00%	1.46%	1.34%
Industry	0.23%	0.24%	0.47%	1.35%	1.25%	2.18%	2.07%
of which construction	0.86%	1.33%	2.19%	5.56%	5.22%	9.81%	9.40%
Services	0.47%	1.23%	1.70%	0.76%	0.86%	1.43%	1.55%
Other	0.00%	0.00%	0.00%	0.00%	0.19%	0.00%	0.23%
TOTAL	0.26%	0.50%	0.76%	0.97%	0.97%	1.61%	1.61%

Source: Authors' calculations.

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As expected given the relatively limited change in final demand caused by the CARDS and ISPA, SAPARD and PHARE programmes, no considerable economic impacts were detected as a consequence of the pre-accession programmes co-financed by the EU (Scenarios 1, 2 and 2a). This resulted even under the unrealistic assumption of a 100% absorption of available funds. As a matter of fact, only the construction sector exhibited a significant (0.86% and 1.33%) increase of gross output (mainly due to large-scale infrastructure investment projects that would be supported by ISPA). The highest increase was shown by the service sector, due to the higher amount of funds allocated to such sectors, especially public administration, education and health services. The conclusion drawn from the results of these three vectors of output change is that the sectors with an important influence on overall economic performance are Public Administration, Education and Health Services; Construction; Transport; Electricity, Water and Gas; and Other Manufacture.

Taking into account a pessimistic assessment of the expected absorption capacity of various funds (Scenario 3), the projected increase in aggregate output is 0.97%. Performance by agriculture and industry is projected to surpass the aggregate output increase (1.10% and 1.35% respectively).

The results of post-accession inflow of funds with a full absorption level (Scenarios 4 and 4a) show an almost double increase in total output compared to partial absorption of funds. The highest increase is again anticipated to come from the construction sector, whose output is projected to grow by 9.81% as a consequence of EU public expenditures. Most of this is due to infrastructure investments supported by the Cohesion Fund.

If the direct payments concerned are fully decoupled (Scenario 3a and Scenario 4a), the results indicate that levels of total output increases are the same, but that they differ in terms of sector. Only the service sector exhibits a slightly higher output increase in Scenario 3a, while the others show a somewhat decreased output change. The situation in Scenario 4a is somewhat different. An increase is seen in service sectors compared to Scenario 4 with coupled direct payments.

4.2 Employment and Income Effects

Besides the impacts of the analysed budgetary transfers on output growth, this research was also extended towards an assessment of employment and income dynamics.

The reasoning behind this approach is based on the assumption that a change in output automatically also implies a change in labour input and, thus, in income. Since labour productivity may differ among various sectors, it may be expected that changes in labour input will behave correspondingly. However, this assessment contains some highly restrictive assumptions, such as no technical progress (implying constant labour productivity) and infinite elasticity of the labour supply; the reported results should therefore be regarded with great caution.

The projected effects on income and employment are presented in Table 7 in both absolute and percentage terms of change from the initial situation. Detailed sectoral percentage changes of income and employment are presented in the Annex, Tables A9-A10.

Table 7. Effects of new FD on income and employment change							
TOTAL Effects	Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
Employment by persons	4,065.86	8,009.56	12,075.43	10,024.38	9,958.99	17,028.00	16,951.06
in %	0.41%	0.81%	1.22%	1.01%	1.01%	1.72%	1.71%
Income in thousands HRK	290,485.52	464,376.44	908,612.44	542,647.36	556,457.16	936,549.80	952,796.62
in %	0.46%	0.99%	1.45%	0.87%	0.89%	1.49%	1.52%

Source: Authors' calculations.

Average yearly inflows of pre-accession funds into the national economy generate increases in employment of 0.81% and in income of 0.99%, while the inflow of funds under Scenario 2a generates an increase in employment of 1.22% and in income of 1.48%. This shows that increased employment is actually accompanied by a slightly higher increase in income during this period.

Under the post-accession scenarios, these changes show a different pattern. The increase in employment is followed by an increase in income which is, however, somewhat lower, i.e. the reverse of the situation in the pre-accession period.

4.2.1 Comparisons of Impact Effects Between Croatia, Slovenia and Romania

The results presented in the previous section can be compared to results in other countries involved in the aforementioned REAPBALK project. These comparisons have been made between only two different periods (scenarios), namely, one referring to pre-accession inflow of funds, and the other to full absorption of EU funds inflow, and pertain to the change of output in these countries.

Table 8. Simulation results of impacts on output levels in Croatia, Romania and Slovenia						
Sector	Pre-accession assistance			Post-accession - coupled direct payments		
	Croatia	Romania	Slovenia	Croatia	Romania	Slovenia
Agriculture	0.02%	0.79%	0.11%	1.46%	11.61%	2.21%
Industry	0.24%	0.99%	0.43%	2.18%	5.22%	1.59%
of which construction	1.33%	43.05%	1.99%	9.81%	27.77%	5.97%
Services	1.23%	1.50%	0.10%	1.43%	9.28%	1.69%
Other	0.00%			0.00%		0.00%
TOTAL	0.50%	1.10%	0.28%	1.61%	7.01%	1.65%

Source: Impact Analysis of Different Scenarios, Deliverable no.12a of REAPBALK research project.

The results in Table 8 reveal that the influence on output change in Slovenia for the pre-accession period is almost two times lower than in Croatia. The higher output increase generated in Romania was expected due to the high level of annual inflow of funds from SAPARD and ISPA.

The post-accession period shows the same indices. Slovenia and Croatia show nearly the same increase in aggregate output change, while Romania shows a five times higher increase in total output compared to its initial one. This is understandable if we compare the relative annual amounts that Romania receives from EU funds to those available for Croatia and Slovenia.

The amounts allocated to these countries before and after accession follow the same distribution pattern. Figure 2 shows that the amounts of funds available to Croatia and Slovenia represent nearly the same proportion of their GDP, despite the fact that Croatia has a 50% lower GDP p.c. At the same time, this financial support constitutes a large share of the Romanian GDP, and therefore the expected impacts are much stronger. The explanation for such a difference lies in the fact that GDP is not the only indicator used for fund allocations.

Figure 2. **Percentage shares of EU funds per national GDP**
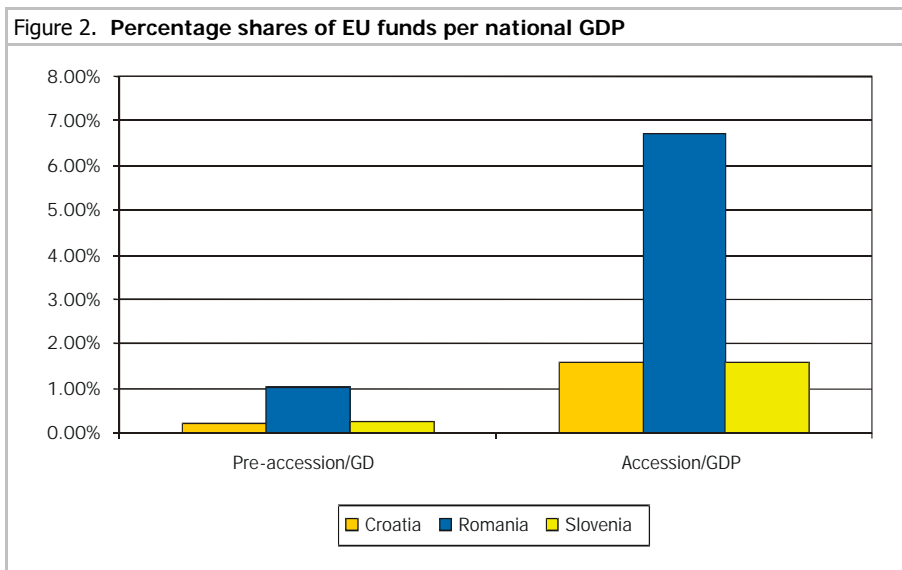
Source: Authors' calculations.

4.3 Distribution Effects on Economic Variables by Policy Instrument

In order to estimate the magnitude of effects and their distribution among economic sectors, we have estimated the impact of individual financial mechanisms separately. This is especially useful in order to check the multiplicative effects of individual commonly financed policies.

4.3.1 Distribution Effects of Pre-Accession Inflow of Funds

This section indicates what change of economic sector output can be expected as the result of a change in FD in total economy (new plan of FD) due to an individual financial mechanism under the Pre-Accession Strategy.

Figure 3. Distribution effects on economic sector output by four separate groups of EU public expenditure (in %)
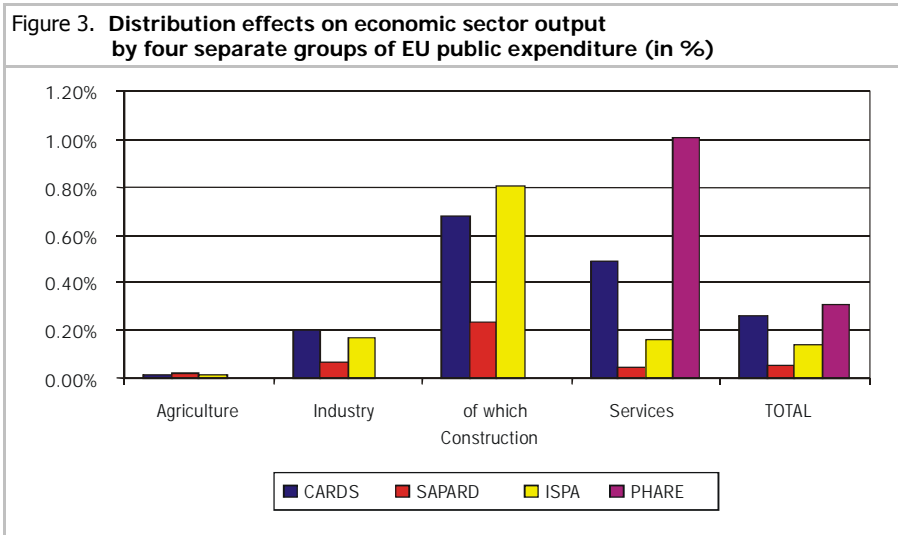
Source: Authors' calculations.

The effects of pre-accession funds on sectoral output level vary according to different policy instruments. The CARDS programme has the highest impact on the change of output. In terms of sector, this is the period in which services exhibit the highest output increase, due especially to CARDS and PHARE funds.

SAPARD funds, which are mainly oriented towards agriculture, impact the increased agricultural output level, but are too small to have a substantial influence on the total level of output increase. Their intensity is even higher in the industry and service sectors than in agriculture, reflecting SAPARD's objective of developing the rural infrastructure. The intensity of ISPA effects is highest in the industry sector, where construction shows the most benefits of the output increase.

4.3.2 Distribution Effects of EU Funds Inflow

Following accession, Structural Fund expenditures show the strongest impact on increased total national output. Nevertheless, the magnitude of impacts on the overall output increase appears to be fairly similar for both CAP expenditures and Structural Funds (see Figure 4).

Figure 4. **Distribution effects on economic sector output
by three separate groups of EU public expenditure (in %)**
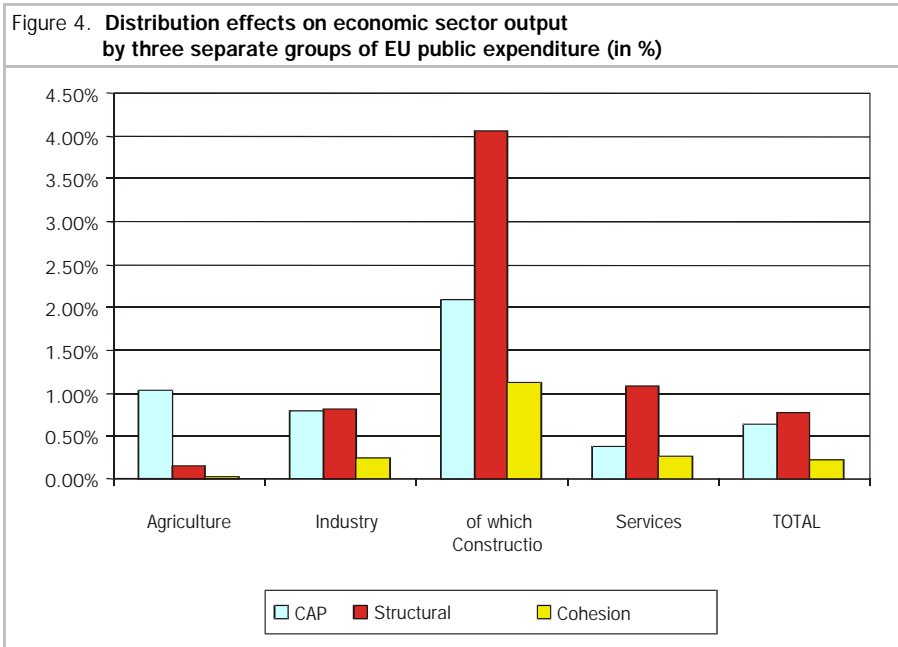
Source: Authors' calculations.

However, there is a significant difference with regard to the sectors targeted by these two sources of EU expenditure. Structural expenditures bring the biggest impacts on output growth in the construction sector, while agriculture exhibits only a minor output increase, the agricultural output increase being induced mainly by CAP expenditures.

Considering the overall magnitude of output increase impacts due to Cohesion Fund inflows, the service sector appears to have the most favourable effects of expenditures under this instrument. However, industry also exhibits favourable effects due to Cohesion Funds, with construction showing the highest increase.

4.4 Policy Implications - Remarks on the Potential Effect of European Funds Inflow on the National Economy

Following completion of this study, some policy implications of individual mechanisms are noticeable.

CARDS and Phare have similar objectives (institution-building and *acquis*-related investment) and thus a similar influence on the output increase is expectable.

ISPA provides financial support for investment in the areas of the environment and transport, in order to speed up acceding countries' compliance with European legislation in force in these two sectors, and brings the most favourable effects to the construction sector.

SAPARD aims to support efforts made by candidate countries to prepare for participation in the Common Agricultural Policy and the Single Market. This involves two major and explicit operational objectives:

- to help solve priority and specific problems in agriculture and rural development,
- to contribute towards implementation of the acquis communautaire (the entire body of Community legislation) concerning CAP and other agricultural priorities.

Therefore, its impact should not be noticeable only in the agricultural sector. The results show that it extends to effects on the industry and service sectors as well, especially because of the aforementioned SAPARD operational objectives.

The study of post-accession funds underlines the fact that operations oriented towards structural changes have the highest potential impact on the overall output increase. The analysis of CAP effects shows that investments in agriculture have to be made in correlation with investments in infrastructure and new technologies in productive sectors. Cohesion funding has a minor influence on industry output compared to structural funds, and exhibits the lowest distribution effects.

5 Conclusions

This paper has attempted to quantify the effects of EU funds on the national economy using an Input–Output methodology. Provided that the national I-O table has been estimated accurately enough, the theoretically implausible assumptions of this model are, in many respects, overshadowed by its empirical realism and simplicity. With this in mind, we can claim that this approach to modelling policy expenditures channelled into the economy through the final demand vector does indeed yield approximately true values for increases in sectoral output and employment. It cannot be argued that such an

inflow of funds into the economy, allowing for an appropriate level of absorption, results in positive multiplicative effects. Nor can it be argued that the effects of EU funds measured by an I-O methodology would indeed have roughly the same static impacts on certain sectors as those shown by our analysis.

In this respect, the I-O methodology and its results bring useful and valuable insights into the beneficial pattern of policy expenditures across various sectors of the national economy. Funds targeted at achieving greater economic convergence have been earmarked mainly for infrastructure. Considerable funds have been allocated to agriculture and, to a much lesser extent, to business support and investment in human capital. In other words, particularly high public investments are being channelled into labour-intensive sectors (construction, agriculture) which are characterised by relatively low labour productivity. A simulation of this expenditure through the methodological framework of an I-O model reveals that impacts are then allocated throughout sectors more equally.

The results suggest that the funds analysed here can make a significant contribution towards the national economy's overall output increase *following accession*, whereas this cannot be said of pre-accession funds. In this respect, the significance of pre-accession funds can be assessed primarily in terms of preparing implementation structures for the successful absorption of funds. Nevertheless, the favourable post-accession effects should also be regarded with some caution. Following accession, the structure of the national budget will change (limited public expenditures, 'transfer' of existing public investments and policies to the Community level). This can lead to somewhat less favourable impacts than those revealed by the model's results. Taking into account the strict convergence criteria that new member countries must comply with in order to enter the Euro Zone, the problem of successful absorption of EU funding can be additionally adversely affected by the need to provide adequate national funding.

Another comparative analysis (Section 4.2.1) of EU fund impacts on three different countries leads to the conclusion that EU post-accession funding has more favourable effects on output and employment dynamics in less developed countries. The reason for this lies in the great amount of funds targeted at countries characterised by a substantial need for fulfilment of *acquis* requirements and for financial support to help them towards greater European integration. In the case of Croatia, the analysis shows that funds for which Croatia could be eligible based on its level of development and the structure of its economy would not significantly change its level of development and its pace on the

path towards EU integration. The absorption capacity of the Croatian economy could additionally reduce these effects, and consequently they should be taken with caution.

Additional analysis regarding the magnitude and distribution of the effects of various sources of EU public expenditures (Section 4.3) also brings some curious results with a certain relevance to policy. This holds especially true in the case of agricultural expenditures, where the results (expectedly) show a relatively low impact on the overall output increase, but reveal, on the other hand, that only about 1-1.5% of this increase is attributable to agriculture. However, the high multiplicative effects of agricultural expenditures serve as a significant corrective to popular opinion about the low redistributive effects of agricultural expenditures.

It may be said that more substantial effects on economic development can be expected from changes in the economic structure which the I-O method is unable to estimate. Although the I-O approach can generate some imprecise results, the illustrative emphasis on the results in this paper can provide us with a descriptive basis for the future planning of development strategies.

We should recall EC President Romano Prodi's statement that "the pace of further movement of the Western Balkans countries towards the EU lies in their own hands, and will depend on each country's performance in implementing reforms, thus respecting the criteria set by the Copenhagen European Council of 1993 and the Stabilisation and Association Process conditionality". To make the achievement of full membership possible, it is imperative to develop an EU integration programme which would treat accession not only as a goal, but also as a means of carrying out all necessary reforms in the interest of Croatia's citizens.[15]

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[15] This approach is adopted in the annual National Programmes for the Integration of the Republic of Croatia into the European Union (NPPEU), which serve as a the central management tool for directing the Government's activities in the area of European integration, and represent a framework for combining annual planning, establishing short-term goals and monitoring the integration process in various sectors, in line with a strategic approach based on Croatia's obligations and its own capacities and national interests.

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Annex

Table A1. Croatia multi-annual indicative programme for 2002 – 2004		Annual allocations (€ million)			Total allocations
Priority	**Programme**	**2002**	**2003**	**2004**	**2002-2004**
1. Democratic Stabilisation	1.1. Return of refugees and internally displaced persons	14.0	15.0	13.0	42.0
	1.2. Civil society	2.0	2.0	2.0	6.0
2. Economic and Social Development	2.1. Trade	3.0	2.5	2.0	7.5
	2.2. Investment climate	9.0	6.15	8.5	23.65
	2.3. Social cohesion (including Tempus)	6.0	8.85	6.0	20.85
3. Justice and Home Affairs	3.1. Modernisation of justice	4.0	4.0	4.0	12.0
	3.2. Policing and organised crime	2.0	3.0	3.0	8.0
	3.3. Integrated border management (Regional funding)	4.0	5.0	14.0	23.0
4. Administrative Capacity Building	4.1. Public administration reform	6.0	6.0	6.5	18.5
	4.2. National, regional and local development	2.0	3.0	3.0	8.0
	4.3. Public finance	4.0	2.8	3.0	9.8
5. Environment and Natural Resources		3.0	3.7	3.0	9.7
TOTAL		59.0	62.0	68.0	189.0

Source: http://europa.eu.int/comm/europeaid/projects/cards/pdf/croatia_strategy_paper.pdf;
http://europa.eu.int/comm/europeaid/projects/cards/financial_en.htm

Table A2. Total average annual amounts of the pre-accession funds (by country in million Euros)			
COUNTRY	**PHARE**	**ISPA**	**SAPARD**
Slovenia	28.73	15.600	6.3
Bulgaria	136.57	104.000	52.1
Romania	260.07	311.7	171.0
Hungary	99.83	88.400	38.1
Slovakia	65.87	46.800	18.3
Czech Republic	82.40	70.200	22.1
Estonia	31.23	28.600	12.1
Latvia	35.57	41.600	21.9
Lithuania	74.00	52.000	29.8
Poland	409.93	348.400	168.7
TOTAL	1224.2	1107.3	540.4

Source: Countries' General Annual Reports on Pre-Accession assistance; authors' calculations of average annual amounts.

Table A3[g3]. EU 10 and Croatia - population, GDP and area								
COUNTRY	Population in million		GDP in billions (current US$)		GDP p.c. in PPS US$		Area	
	2001	2002	2001	2002	2002	2003	Surface (in sq. km)	Agricultural (in hectares)
Slovenia	2	2	18.8	21.1	17.762	18.624	20.250	486.000
Bulgaria	7.9	7.9	13.6	15.6	6.366	6.639	110.910	5,498.000
Romania	22.4	22.4	39.7	44.4	6.976	6.842	238.391	14,874.000
Hungary	10.1	10.2	51.8	65.8	12.728	13.369	93.030	5,853.000
Slovakia	5.4	5.4	20.5	23.7	12.314	12.172	49.036	2,444.000
Czech Republic	10.2	10.2	57.2	69.6	15.300	15.200	79.000	4,282.000
Estonia	1.4	1.4	5.5	6.4	10.900	10.740	45.227	986.000
Latvia	2.4	2.4	7.7	8.4	8.300	8.450	64.600	2,540.000
Lithuania	3.5	3.5	11.9	13.8	8.400	8.108	65.301	3,489.000
Poland	38.6	38.6	183	187.7	9.500	9.530	312.685	18,397.000
Croatia	4.4	4.4	19.5	22.4	8.118	8.860	56.542	1,162.612

Source: State Statistical Bureau, EUROSTAT, Country profile table available at:
http://www.worldbank.org/data/countrydata/countrydata.html

Table A4. Financial framework for enlargement 2005-2006 - Indicative allocation of payment appropriations COPENHAGEN PACKAGE				
	Slovakia 2004-2006	Total EU 10 2005	Total EU 10 2006	Total (2 years)
1. Agriculture				
1a. - Common Agricultural policy				
Market measures	97.3	857.9	857.9	1,715.8
Compensatory Direct Aids	161.1	1,464.4	1,464.4	2,928.8
Total 1a.	258.5	2,322.4	2,322.4	4,644.8
1b. Rural development	206.0	1,772.7	1,772.7	3,545.4
Total heading 1	464.5	4,095.0	4,095.0	8,190.0
2. Structural allocations after capping	0.0			
Structural Fund	420.8	2,924.9	2,924.9	5,849.8
Cohesion Fund	112.4	1,081.0	1,081.0	2,162.0
Total heading 2	533.2	4,005.8	4,005.8	8,011.6
3. Internal policies	0.0			
Existing policies	77.9	708.2	708.2	1,416.4
Nuclear safety	30.0	105.7	105.7	211.4
Institution building	11.7	89.7	89.7	179.4
Schengen	31.8	270.6	270.6	541.2
Total heading 3	181.5	1,174.1	1,174.1	2,348.2
Total Appropriations for Payments	1,179.6	9,.274.9	9,274.9	18,549.8

Source: European Commission 2003a: Financial framework for enlargement 2004-2006 - Indicative allocation of
Commitment and payment appropriations - COPENHAGEN PACKAGE; available at
http://europa.eu.int/comm/budget/pdf/financialfrwk/copenhagen_package/webtablesEN.pdf

Table A5. Sectoral allocation of the pre-accession and CARDS funds in Croatia				
Sectors	**CARDS**	**SAPARD**	**ISPA**	**PHARE**
Agriculture	0.00	3,208.75	0.00	0.00
Manufacture of Food Products	0.00	0.00	0.00	0.00
Textiles and Clothing	0.00	0.00	0.00	0.00
Wood Products	0.00	0.00	0.00	0.00
Chemical and Metal Products	0.00	0.00	0.00	0.00
Machinery and Motor Vehicles	0.00	30,195.28	0.00	0.00
Furniture	0.00	0.00	0.00	0.00
Other Manufacture	59,125.00	1,495.84	0.00	0.00
Electricity, Water and Gas	24,250.00	0.00	0.00	0.00
Construction	105,000.00	37,608.44	124,575.00	0.00
Trade and Hotels	18,750.00	0.00	0.00	0.00
Transport	0.00	0.00	101,925.00	0.00
Financial Services and Real Estate	0.00	21,866.69	0.00	0.00
Public Administration, Education and Health Services	265,375.00	0.00	0.00	604,000.00
Other	0.00	0.00	0.00	0.00
TOTAL	472,500.00	94,375.00	226,500.00	604,000.00

Source: Authors' calculations.

Table A6. Sectoral allocation of the EU funds on accession in Croatia						
Sectors	**EAGGF guarantee DP coupled**	**EAGGF guarantee DP decoupled**	**EAGGF Guidance**	**ERDF**	**ESF**	**Cohesion Fund**
Agriculture	180,407.3	162,790.3	19,420.18	0.00	0.00	0.00
Manufacture of Food Products	112,250.0	109,091.5	14,938.60	0.00	0.00	0.00
Textiles and Clothing	0.0	15,848.7	0.00	0.00	0.00	0.00
Wood Products	0.0	0.0	0.00	0.00	0.00	0.00
Chemical and Metal Products	83,339.0	71,627.6	2,240.79	0.00	0.00	0.00
Machinery and Motor Vehicles	130,015.5	103,181.4	7,469.30	16,263.90	0.00	0.00
Furniture	0.0	15,164.9	0.00	0.00	0.00	0.00
Other Manufacture	130,015.5	61,249.2	7,469.30	16,263.9	0.00	0.00
Electricity, Water and Gas	31,494.8	51,644.5	7,469.30	0.00	0.00	0.00
Construction	364,208.6	314,948.3	74,693.00	585,500.5	0.00	171,845.6
Trade and Hotels	0.0	27,413.9	0.00	8,131.95	0.00	0.00
Transport	56,125.0	37,973.5	7,469.30	0,00	0.00	171,845.6
Financial Services and Real Estate	25,195.9	76,023.3	5,975.44	187,034.9	84,271.21	0.00
Public Administration, Education and Health Services	9,448.4	14,619.9	2,240.79	0,00	239,848.8	0.00
Other	0.0	60,923.0	0.00	0.00	0.00	0.00
TOTAL	1,122,500.0	1,122,500.0	149,386.0	813,195.2	324,120.0	343,691.1

Source: Authors' calculations.

Table A7. **Simulation results: total effects of the EU expenditures on the gross output in Croatia**

Sector	Unit	Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
Agriculture	thous. HRK	0.00	5,642.18	5,642.18	265,115.60	238,785.07	351,371.10	320,394.01
	%	0.00%	0.33%	0.22%	8.11%	7.30%	6.47%	5.89%
Industry	thous. HRK	375,501.84	401,013.37	776,515.21	2,212,369.40	2,050,060.09	3,586,187.47	3,395,235.34
	%	43.13%	23.69%	30.29%	67.70%	62.65%	66.00%	62.43%
of which								
Construction	thous. HRK	232,324.74	358,849.76	591,174.50	1,500,938.64	1,408,293.51	2,646,837.40	2,537,843.13
	%	61.87%	89.49%	76.13%	67.84%	68.70%	73.81%	74.75%
Services	thous. HRK	495,082.32	1,286,062.40	1,781,144.72	790,284.37	896,187.71	1,495,740.68	1,620,332.85
	%	56.87%	75.98%	69.49%	24.18%	27.39%	27.53%	29.79%
Other	thous. HRK	0.00	0.00	0.00	0.00	87,131.65	0.00	102,507.82
	%	0.00%	0.00%	0.00%	0.00%	2.66%	0.00%	1.88%
TOTAL	thous. HRK	870,584.15	1,692,717.95	2,563,302.10	3,267,769.37	3,272,164.52	5,433,299.25	5,438,470.01
	%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Authors' calculations.

Table A8. **The impact of the new FD on output level in national economy by sectors**

Sectors		Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
1	Agriculture	0.00%	0.02%	0.02%	1.10%	1.00%	1.46%	1.34%
2	Manufacture of Food Products	0.00%	0.00%	0.00%	0.93%	0.90%	1.27%	1.23%
3	Textiles and Clothing	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.24%
4	Wood Products	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5	Chemical and Metal Products	0.00%	0.00%	0.00%	0.29%	0.25%	0.36%	0.31%
6	Machinery and Motor Vehicles	0.00%	0.10%	0.10%	0.41%	0.33%	0.53%	0.44%
7	Furniture	0.00%	0.00%	0.00%	0.00%	0.44%	0.00%	0.52%
8	Other Manufacture	0.84%	0.02%	0.86%	1.68%	0.84%	2.19%	1.21%
9	Electricity, Water and Gas	0.74%	0.00%	0.74%	0.79%	1.32%	1.20%	1.81%
10	Construction	0.86%	1.33%	2.19%	5.56%	5.22%	9.81%	9.40%
11	Trade and Hotels	0.11%	0.00%	0.11%	0.02%	0.15%	0.05%	0.20%
12	Transport	0.00%	1.41%	1.41%	1.84%	1.62%	3.26%	3.01%
13	Financial Services and Real Estate	0.00%	0.20%	0.20%	1.44%	1.83%	2.78%	3.25%
14	Public Administration, Education & Health Services	1.32%	3.01%	4.33%	0.64%	0.66%	1.25%	1.28%
15	Other	0.00%	0.00%	0.00%	0.00%	0.19%	0.00%	0.23%
TOTAL		0.26%	0.50%	0.76%	0.97%	0.97%	1.61%	1.61%

Source: Authors' calculations.

Table A9. The impacts of the new final demand on the national income

Sectors		Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
1	Agriculture	0.00%	0.04%	0.04%	2.04%	1.84%	2.70%	2.46%
2	Manufacture of Food Products	0.00%	0.00%	0.00%	0.89%	0.86%	1.21%	1.18%
3	Textiles and Clothing	0.00%	0.00%	0.00%	0.00%	0.22%	0.00%	0.26%
4	Wood Products	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5	Chemical and Metal Products	0.00%	0.00%	0.00%	0.32%	0.27%	0.39%	0.33%
6	Machinery and Motor Vehicles	0.00%	0.12%	0.12%	0.48%	0.39%	0.63%	0.52%
7	Furniture	0.00%	0.00%	0.00%	0.00%	0.50%	0.00%	0.59%
8	Other Manufacture	1.12%	0.03%	1.15%	2.22%	1.12%	2.91%	1.61%
9	Electricity, Water and Gas	0.73%	0.00%	0.73%	0.78%	1.30%	1.18%	1.79%
10	Construction	0.92%	1.43%	2.35%	5.97%	5.60%	10.53%	10.09%
11	Trade and Hotels	0.09%	0.00%	0.09%	0.02%	0.13%	0.04%	0.17%
12	Transport	0.00%	1.37%	1.37%	1.79%	1.58%	3.17%	2.93%
13	Financial Services and Real Estate	0.00%	0.20%	0.20%	1.44%	1.83%	2.78%	3.25%
14	Public Administration, Education & Health Services	1.32%	3.01%	4.33%	0.64%	0.66%	1.25%	1.28%
15	Other	0.00%	0.00%	0.00%	0.00%	0.18%	0.00%	0.21%
TOTAL		0.46%	0.99%	1.46%	0.87%	0.89%	1.49%	1.52%

Source: Authors' calculations.

Table A10. The impacts of the new final demand on the national employment

Sectors		Scenario 1	Scenario 2	Scenario 2a	Scenario 3	Scenario 3a	Scenario 4	Scenario 4a
1	Agriculture	0.00%	0.03%	0.03%	1.42%	1.27%	1.88%	1.71%
2	Manufacture of Food Products	0.00%	0.00%	0.00%	0.97%	0.94%	1.32%	1.29%
3	Textiles and Clothing	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.24%
4	Wood Products	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5	Chemical and Metal Products	0.00%	0.00%	0.00%	0.40%	0.34%	0.48%	0.41%
6	Machinery and Motor Vehicles	0.00%	0.21%	0.21%	0.84%	0.67%	1.09%	0.90%
7	Furniture	0.00%	0.00%	0.00%	0.00%	0.48%	0.00%	0.56%
8	Other Manufacture	0.86%	0.02%	0.88%	1.71%	0.86%	2.23%	1.23%
9	Electricity, Water and Gas	0.69%	0.00%	0.69%	0.73%	1.22%	1.10%	1.68%
10	Construction	0.91%	1.41%	2.32%	5.90%	5.53%	10.40%	9.97%
11	Trade and Hotels	0.08%	0.00%	0.08%	0.02%	0.12%	0.03%	0.15%
12	Transport	0.00%	1.13%	1.13%	1.48%	1.30%	2.62%	2.42%
13	Financial Services and Real Estate	0.00%	0.20%	0.20%	1.44%	1.83%	2.78%	3.25%
14	Public Administration, Education & Health Services	1.32%	3.01%	4.33%	0.64%	0.66%	1.25%	1.28%
15	Other	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	0.33%
TOTAL		0.41%	0.81%	1.22%	1.01%	1.01%	1.72%	1.71%

Source: Authors' calculations.

SOURCE	Table A11. **Annual funds in Croatia, Slovenia and Romania in million euros**		
SOURCE	**Pre-accession assistance**		
	Croatia	**Romania**	**Slovenia**
SAPARD	12.5	171.0	11.45
ISPA	30	311.7	42.03
TOTAL	42.5	482.7	53.48
	After accession - coupled direct payments		
Structural Funds	170.42	1,327.00	100.62
Cohesion Fund	45.52	664.00	52.45
EAAGF direct payments	65.25	294.00	96.68
EAAGF rural development	83.43	808.0	94.05
TOTAL	364.62	3,093	343.8

*Source: Impact Analysis of Different Scenarios, Deliverable no.12a of REAPBALK research project; authors'
calculations based on Relevant National and Regional Scenarios, the Deliverable no 11 of REAPBALK research.*