

**Economic and Social Council**

Distr.: General
8 March 2016
English
Original: Russian

Economic Commission for Europe**Conference of European Statisticians****Group of Experts on National Accounts****Fifteenth session**

Geneva, 17-20 May 2016

Item 2 of the provisional agenda

Development of supply and use tables**The practice of Ukraine in compiling input-output tables**

Prepared by the State Statistics Service of Ukraine¹

Summary

The report provides a historical overview of compiling input-output tables in Ukraine and the main changes that have taken place in methodologies and classifications. Consideration is given to the main sources of statistics and administrative data, the particular features and stages of developing a system in Ukraine for input-output tables, including a matrix of taxes and subsidies on products, trade and transport margins and use of imports and domestic products. Details of the transition to input-output tables in accordance with the methodology of the System of National Accounts, 2008, are provided. The main uses of the tables for statistical purposes and economic policymaking are also examined. Ways forward for further development of a system of input-output tables in Ukraine are identified.

¹ Prepared by Ms. N. Nikitina and Mr. O. Moskvina.



I. Historical background of compiling input-output tables in Ukraine

1. Ukraine has a long experience in the construction of input-output tables. The first table, consisting in some 100 products, was compiled in 1966 using the material product system. Similar tables were worked out every five years or so up until 1987. In addition, aggregated tables had been drawn up every year since 1979.
2. Since 1994, input-output tables have been compiled in Ukraine according to the methodology of the National System of Accounts (SNA) and, since 2000, using the European economic activity and product classifications. In addition to the traditional tables expressed in purchasers' prices in Ukraine, tables expressed in basic prices have begun to be worked out, which are published by Ukraine together with the matrices for trade and transport margins, taxes and subsidies on products and imports and domestic products. Since 2012, the input-output tables have been compiled in accordance with the 2008 SNA methodology on the basis of the new version of classification of types of economic activities of the European Community (NACE Rev.2) and the statistical classification of products (CPA) of the European Community of 2008.
3. Bringing such developments into line with international standards has made it possible to use input-output tables for improving the quality of the national accounts of Ukraine.

II. Data sources

4. A wide range of statistical information produced by the State Statistics Service (Gosstat) and administrative data sources provided by the ministries and departments of Ukraine on the basis of agreements concluded with them is used to compile input-output tables.
5. Data from structural business statistics provided yearly for calculating output quantity (valuation on the basis of products sold and changes in inventories), the value of intermediate consumption and gross value added of the non-financial corporations institutional sector are of the utmost importance to compiling input-output tables. Information collected from such a survey allows for indicators of output and value added to be derived for individual products. Such an approach is traditionally used in Ukraine for the construction of input-output tables (annex I).
6. Among other data sources of the State Statistics Service worth mentioning are indicators derived from: industry data (agriculture, industry, construction, foreign and domestic trade, transport, communications and non-financial services); investment statistics and surveys on household living conditions; employment and wages; and price statistics.
7. Administrative data sources are widely used in constructing input-output tables, the most important of which are:
 - Financial reporting data on non-financial corporations;
 - Balance of payments data and monetary statistics compiled by the National Bank and other authorized bodies;
 - Government finance statistics provided by the Ministry of Finance;
 - Social security fund reports;

- Data from the State Fiscal Service on the productive activities of individual entrepreneurs.
8. Given the considerable importance of non-observed economic activity for its valuation, a wide range of data sources are applied, including:
- Information from structural business statistics on the number of and reasons for non-responses of businesses to surveys;
 - Estimates of output by individuals in agriculture derived from the areas under cultivation and yields and the construction of monetary and physical balances;
 - Estimates of turnover on informal markets;
 - Estimates of the volume of individual housing construction on the basis of permits issued;
 - Estimates of the non-observed economy in other activities;
 - Estimates of illegal economic activities based on the results of special surveys.
9. In addition to direct reports of non-profit institutions serving households, over the past two years, the work of volunteer charitable organizations that provide assistance to the Ukrainian army and displaced persons has become increasingly important and is also assessed on the basis of information from the media and special surveys.

III. Time frame for compiling and characteristics of input-output tables of Ukraine

10. To meet the needs of the main users of statistics, in particular the Ministry of Economic Development and Trade, which uses input-output tables in making projections and forming social and economic development programmes, the current approach to constructing them in Ukraine has the following features.
11. Input-output tables are compiled annually. The time frame for compiling tables at purchasers' prices is 12 months and at basic prices 16 months.
12. The indicators used in compiling supply and use tables are based on products and not industries. All tables compiled are "product by product" and not "product by industry" tables. Provision has been made for obtaining source data in this form when developing structural business statistics.

IV. Stages in establishing a framework for input-output tables in Ukraine

13. The process of establishing a framework for input-output tables takes place in several phased stages (annex II).
14. The establishment of a database (reconciled with annual national accounts) involves the following.
15. Information is collected from statistical and administrative data sources and formatted so that the data may be processed (which involves, in particular, administrative data sources that Ukraine receives in the form of databases requiring sorting and grouping of the necessary indicators).

16. Data are adjusted for full coverage of the phenomena and the adjusted data are reconciled with other data sources (adjustments of the results of surveys for enterprises that have not submitted reports and reconciliation of statistical data with administrative data).

17. Primary data are processed in accordance with the national accounts conceptual framework (including the calculation of output based on sales, valuation of trade margins based on turnover, valuation of hidden and illegal production, production for own final use, valuation of changes in inventories, including holding gains, calculation of financial intermediation services indirectly measured (FISIM), inclusion of reinsurance services in the output of insurance services, valuation of gross capital formation of research and development and military equipment and valuation of notional living in owner-occupied dwellings).

18. Input-output tables at purchasers' prices are compiled as follows.

19. Input-output tables at purchasers' prices in Ukraine are compiled in a way comparable to the supply and use tables recommended by international organizations (annex III).

20. On the basis of the adjusted data, a valuation is carried out of output at basic prices and imports to which taxes on production and imports are added, subsidies on products are excluded and trade and transport margins are added, which provides an estimate of the supply at purchasers' prices. Furthermore, value added tax is calculated as non-deductible on the basis of a preliminary estimate of use of products matrices.

21. Estimates of indicators of use matrices are carried out. Reclassification takes place with respect to indicators of final household consumption (COICOP), the functions of government (COFOG), exports and imports (Harmonized Commodity Description and Coding System/combined nomenclature (HS/CN)) and in the classification of products (CPA).

22. A preliminary breakdown of non-deductible value added tax (VAT) is carried out, which is valued for its final purchaser. For goods and services used for intermediate consumption, this tax is paid by institutional sectors that are non-market producers (general public administration, non-governmental organizations), market producers that are exempted from payment of VAT on their own products (for example, agriculture) and small businesses. Use of non-deductible VAT in gross fixed capital formation is similarly defined. For household final consumption expenditures, the valuation of non-deductible VAT is based on purchases of goods and services on organized markets and the actual rate of VAT paid by enterprises during the sale of goods. Final use of the public administration sector of VAT is calculated only for social transfers in kind that were made by market producers and acquired for transfers to households for free or at preferential rates.

23. After the balancing described below is done, source data on production and use of goods and services are modified. Therefore, the process of calculating value added tax matrices is repeated.

24. An assessment and analysis of primary discrepancies between supply and use in the economy is carried out. The balancing process takes place in three stages. The structural changes in intermediate and final consumption compared with the previous period are first analysed and the items are broken down by price and volume. Distortions of data found in quadrants are addressed through additional verification of source data. As a result of the process of manually balancing, discrepancies between supply and use of goods and services

are minimized. In the second phase, balancing is carried out automatically only for indicators in quadrant I using the RAS method.²

25. Input-output tables at basic prices are compiled on the basis of data from input-output tables at purchasers' prices. For this purpose, matrices for the allocation of value added tax, tax on products, subsidies on products and trade and transport margins are compiled, and, at the final stage, matrices on use of imports and domestic products (annex IV).

26. Matrices are constructed using the structures of use of products of input-output tables and additional information. The general principle behind constructing a matrix is reconciling their results for each product in the supply side with the use side.

27. A matrix of taxes and subsidies on products is formed for each type of these payments. Matrices for non-deductable VAT are constructed for final purchasers of this tax, as was described in paragraph 22. Excise tax is based on the structure of the use of excise goods and primarily relates to household consumption, except petrol consumed by all sectors of the economy. The bulk of the subsidies are allocated for consumption of the relevant products by households, as other subsidies have currently been discontinued (e.g. for housing construction and manufacture of agricultural machinery, which had previously been included in gross fixed capital formation).

28. Detailed structural business statistics on activity in wholesale and retail trade are used to compile trade margin matrices, which makes it possible to break it down by type of goods. It is of crucial importance for Ukraine to have a valuation of the trade margins of individual entrepreneurs and agricultural and informal markets, which account for almost half of retail turnover. Wholesale trade margins are divided into consumption (quadrant I) and accumulation (quadrant II), and retail trade mainly relates to household consumption.

29. When compiling transport margin matrices, it is necessary to take account of the specific types of activity in which domestic turnover (the main diagonal of the matrices of quadrant I) is largely related to intrasectoral transport (for example, iron in steel production and steel in steelmaking). In general, such transport is carried out using one's own transport and is already included in the cost of production.

30. When compiling matrices on use of imports (annex V), detailed information from customs statistics is used, which makes it possible to distinguish the way in which they are used — as gross fixed capital formation, for final consumption by households, for intermediate consumption by certain types of activity (for example, crude oil used in oil refinery and chemistry). Subsequent distribution is done on a proportional basis. After excluding the matrix of use of imports from the input-output tables, a matrix of use of domestic products is formed.

31. An input-output table at basic prices is formed on the basis of input-output tables at purchasers' prices, as follows:

- Trade and transport margins are excluded from the rows "Trade" and "Transport" of quadrant I;
- The matrices for tax on products, subsidies on products and trade and transport margins described earlier are excluded from quadrants I and II;
- The totals of these matrices are added to the row located below the total for quadrants I and II;
- Taxes and subsidies on products are excluded from the rows of quadrant III;

² The RAS is a well-known method for data reconciliation. Its aim is to achieve consistency between the entries of some non-negative matrix and pre-specified row and column totals.

- The use of imports and domestic products matrices are published as additions to the input-output table at basic prices.

V. The impact of the 2008 SNA changes in methodology on input-output tables

32. Ukraine met two major objectives in the process of reviewing the methodology for national accounts that was carried out on data for 2012:

- The transition to the new version of the statistical classification of economic activities (NACE Rev.2);
- The introduction of the basic methodological provisions of the international standard SNA 2008, which affects the volume and structure of gross domestic product (GDP).

33. The introduction of a new classification of types of economic activity necessitated a complete revision of the main source of information for the compilation of input-output tables, namely annual forms of structural business statistics, in which the coding of types of economic activities and consumption of goods and services has been changed. Corresponding changes were also made to the system of collecting industry data and administrative data. This has made it possible to make retrospective calculations of production and income generation accounts for the period up to 2000, but has not provided an opportunity to carry out a retrospective review of input-output tables.

34. At the same time, the task of improving administrative source data has been accomplished. Thanks to the joint work of the State Statistics Service and specialists at the National Bank, the country has managed to implement the Balance of Payments and International Investment Position Manual, Sixth Edition, in keeping with SNA 2008.

35. The second important objective was to introduce the main methodological provisions of the international standard SNA 2008. The meeting on Implementation Plans for the System of National Accounts 2008 in countries of Eastern Europe, Central Asia and South-East Europe, held in Kyiv in 2011, was a great help in developing the plans for the introduction of the new methodology, as were the last meetings of the Group of Experts on National Accounts in Geneva in 2012 and 2014. The participation of Ukraine in these meetings enabled it to set out the priorities and phases for the introduction of the SNA 2008 and to develop a methodology for similar conversions.

36. In line with the recommendations drawn up at meetings of the Economic Commission for Europe and other international organizations, priority was given to questions that have an effect on GDP volume and structure, such as the following general macroeconomic indicators:

- The new methodology for the calculation of financial intermediation services indirectly measured (FISIM);
- Insurance;
- Research and development;
- Weapons systems;
- Operations involving goods sent abroad for processing;
- Illegal economic activities;
- Imputed rent for owner-occupied housing.

37. These changes have had a significant impact on input-output tables in Ukraine and have led to a change in the volume of output, intermediate consumption, value added and categories of final use of GDP, as will be discussed later.

38. Previously, FISIM had been included in a separate column in the input-output tables under intermediate consumption and, with a minus sign, value added. FISIM was allocated in the input-output table according to the institutional affiliation of the consumer. For market producers, it was included in intermediate consumption, and for non-market producers, in intermediate consumption and production, and in final consumption. FISIM provided to employers was included in intermediate consumption of households as producers and for the acquisition and reconstruction of housing and FISIM for consumer credit was included in final consumption. The consequence of dividing this indicator among consumers is a decrease in gross value added for market producers by type of economic activity, with an overall increase resulting from the removal from it of FISIM for consumer credit; an increase in institutional sector final consumption expenditure in housing, general government and non-profit institutions serving households, and a growth in GDP.

39. The inclusion of reinsurance service costs has increased output and intermediate consumption of this type of activity, but has not affected its gross value added.

40. The inclusion of research results in the gross fixed capital formation has reduced intermediate consumption of these services by market producers, thereby increasing their value added. Final consumption expenditure of the general government sector has fallen and gross fixed capital formation has increased. At the same time, the inclusion of consumption of fixed capital assets of this kind for the general government sector has increased its production, value added and final consumption.

41. The allocation of expenditure on weapons to gross fixed capital formation has reduced output and intermediate consumption, without affecting the added value of the government sector. Consequently, final consumption expenditure in the general government sector has fallen, but gross fixed capital formation has grown. As was mentioned in paragraph 40, consumption of fixed capital assets of this kind had a reverse effect by increasing production, value added and final consumption.

42. The exclusion of foreign trade in goods for processing from the accounting has reduced exports and imports, along with intermediate consumption and output of manufacturing industries.

43. The inclusion of illegal economic activities in production has increased output, intermediate consumption, gross value added of corresponding types of activities (chemical industry, trade and other services) and household final consumption expenditures, from which goods for intermediate consumption of these activities, however, were removed.

44. The change in the methodology for calculating owner-occupied dwelling services has increased output and gross value added for real estate activities and household final consumption expenditures. Expenditure on the maintenance and repair of the dwellings has been included in intermediate consumption for this type of activity (and excluded from household final consumption expenditures) as has financial intermediation services during acquisition and reconstruction of the dwellings (a part of FISIM). Value-added of real estate activities was increased by consumption of fixed capital and the imputed profit at the current value of the dwellings.

VI. Use of input-output tables in Ukraine

45. Input-output tables are used in Ukraine for domestic statistical needs and by external users as well.

46. The main areas of using them for statistical needs include:
- Reconciliation of data to produce national accounts. Thanks to the procedures for closing the gap between supply and use in the economy, analysis of structural changes in intermediate and final consumption as compared with previous periods and breakdown of indicators by price and volume, the quality of indicators of national accounts is improving, gaps are closing and data obtained from various sources are more consistent;
 - The deflation of intermediate consumption in the breakdown by type of goods and services makes it possible to assess gross value added at constant prices using the double deflation method;
 - The construction of satellite accounts based on the use of the methodology and data from input-output tables includes health, social protection, education, science and economic accounts for agriculture. Preparations are under way for the construction of satellite accounts for tourism, environmental accounts for the protection of the atmospheric air and energy accounts;
 - Data calculated on the basis of the input-output tables are also used in industry statistics. For example, the ratio of imports to domestic products is applied when revaluing investment in machinery and equipment at constant prices. In the long term, Ukraine plans to make a transition to the use of household final consumption expenditures (except implicit indicators) to build weights for calculating the consumer price index.
47. Statistics of the input-output tables are used by users, as follows:
- Along with indicators of GDP and national accounts, the Ministry of Economic Development and Trade has been developing input-output table projections for more than 10 years, which are used for balancing of other projections of indicators and estimating cost proportions and price changes. Currently, input-output table projections are an integral part of social and economic development programmes;
 - The Ministry of Finance, in drafting the budget of Ukraine, is planning to receive receipts from valued added tax and other taxes;
 - Research institutes are constructing dynamic input-output tables for factor analysis of labour productivity and capital and the impact of price changes.

VII. Prospects for further development of input-output tables in Ukraine

48. Further development of the system of input-output tables will be focused on expanding the list of products contained in the tables; the introduction of international standards for the revaluation of input-output tables at constant prices; and improving the quality of indicators. Given the resource and tight time constraints of the State Statistics Service, it has not been able, to date, to resolve the issue of developing supply and use tables according to product by industry, although it does have the information necessary to do so.

49. Another important issue for Ukraine is to reduce the reporting burden on respondents, which requires doing away with collecting data on the costs of production every year. Furthermore, the use of a fixed structure of the past reporting year when there are sharp fluctuations in commodity prices is inappropriate and price statistics are not yet ready to provide us with prices indices for intermediate consumption. Therefore, an

important objective for Ukraine is to master adjustment methods for data on intermediate consumption.

50. One last but not least important challenge of statistics in Ukraine that cannot be resolved on its own is the software development for compiling input-output tables, which is currently done only with the use of MS Excel. It would be extremely useful for Ukraine and, in our view, other countries if such standard software for these purposes were to be developed.

Annex I

Sections of structural surveys of enterprises used in the construction of input-output tables

Section 3. Breakdown of indicators by type of economic activity

| <i>The classification of type of economic activity by class</i> | <i>Average number of employees</i> | <i>Products sold</i> | <i>Excise tax on them</i> | <i>Production for own consumption</i> | <i>Portion of it for the purpose of investment in own enterprise</i> | <i>Capital investment in tangible assets</i> | <i>Material inputs and payment of manufacturing services</i> | <i>Depreciation</i> | <i>Compensation of employees</i> | <i>Social contributions</i> | <i>Inventories of finished goods and work in progress</i> | <i>Inventory of goods and services</i> | <i>Value of goods and services purchased for resale</i> |
|---|------------------------------------|----------------------|---------------------------|---------------------------------------|--|--|--|---------------------|----------------------------------|-----------------------------|---|--|---|
| Total for each enterprise | | | | | | | | | | | | | |
| X Including by type of economic activity | | | | | | | | | | | | | |

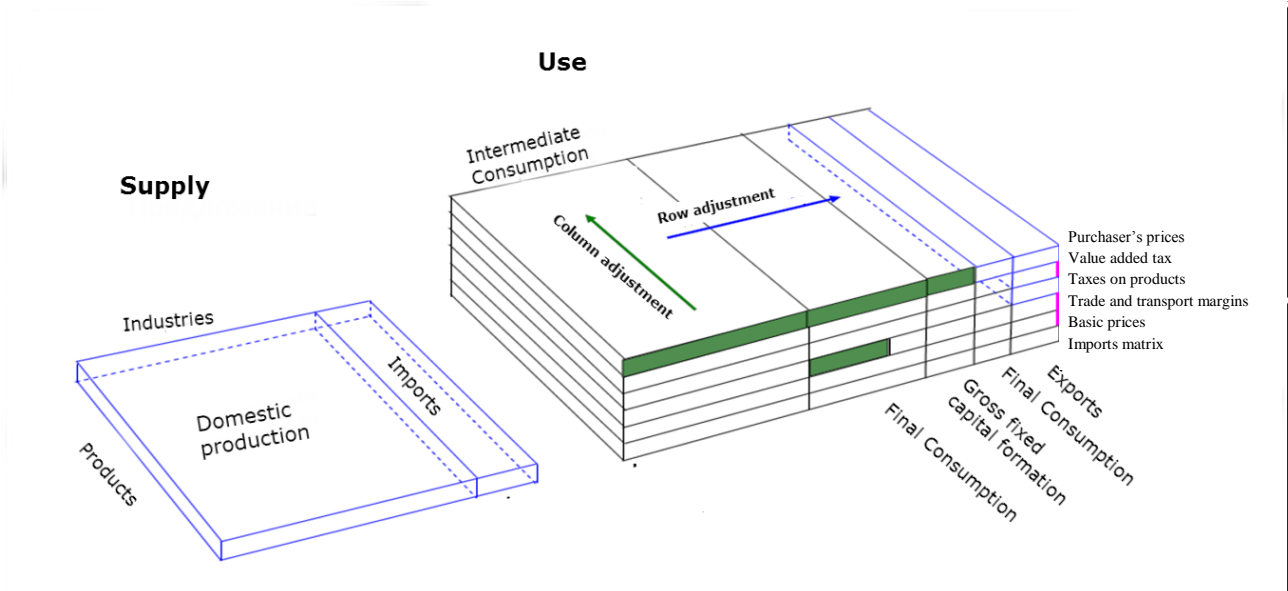
Section 4. Breakdown of material costs and payment for services used in the production of goods

| <i>2011 rolling integrated census</i> | <i>Material inputs and expenditures on services used in the manufacture of products (without VAT)</i> |
|---------------------------------------|---|
| X Total | |
| 1 | Agricultural production |
| 2 | Forest products |
| 3 | Fish and fishery products (except frozen and processed fish) |
| 5 | Coal and lignite |
| 6 | Crude petroleum and natural gas, not including manufactured gas and gas supply services |
| 7, 8 | Metal ores. Other mining products |
| 9 | Mining support services |
| 10-12 | Food, beverages and tobacco |
| 13-15 | Textiles, clothing, leather and leather products |

| <i>2011 rolling integrated census</i> | <i>Material inputs and expenditures on services used in the manufacture of products (without VAT)</i> |
|---|---|
| 16 | Wood, wood products |
| 17 | Pulp, paper, paperboard, articles of paper and cardboard |
| 18 | Services for printing and reproduction of recorded information |
| 19.1 | Coke and coke products |
| 19.2 | Refined petroleum products |
| 20 | Chemicals and chemical products |
| 21 | Pharmaceutical products and pharmaceutical supplies |
| 94 | Community organization services |
| 95 | Services for repair of computers, household appliances and individual consumer goods |
| 96 | Other personal services |

Annex II

Building a system of input-output tables



Annex III

Input-output tables of Ukraine at purchasers' prices for 2013 (aggregated)
(millions of Hrv)

| | <i>Intermediate consumption</i> | | | | | | | | | | |
|--|---------------------------------|--------------------|------------------------|---|---|---------------------------------|----------------------------------|---|---|----------------------------|------------------|
| | <i>A. Agriculture</i> | <i>B. Industry</i> | <i>F. Construction</i> | <i>G-I. Trade, transport, accommodation</i> | <i>J. Information and communication</i> | <i>K. Finance and insurance</i> | <i>L. Real estate activities</i> | <i>M-N. Professional, scientific and technical services</i> | <i>O-Q. Public administration, education, health care</i> | <i>R-U. Other services</i> | <i>Total</i> |
| A. Agriculture | 93 802 | 64 394 | 200 | 6 879 | 7 | 0 | 111 | 113 | 5 544 | 71 | 171 121 |
| B-E. Industry | 69 865 | 759 080 | 77 216 | 145 008 | 7 756 | 1 476 | 17 114 | 17 716 | 52 315 | 4 972 | 1 152 518 |
| F. Construction | 330 | 3 363 | 42 769 | 3 138 | 149 | 83 | 3 049 | 1 727 | 824 | 102 | 55 534 |
| G-I. Trade, transport, accommodation | 59 927 | 438 840 | 3 328 | 63 653 | 1 554 | 3 627 | 804 | 4 220 | 4 434 | 1 696 | 582 083 |
| J. Information and communication | 430 | 5 141 | 620 | 11 211 | 33 722 | 816 | 894 | 9 782 | 3 910 | 1 820 | 68 346 |
| K. Finance and insurance | 1 540 | 20 500 | 3 334 | 28 603 | 1 517 | 28 978 | 4 211 | 4 505 | 1 813 | 592 | 95 593 |
| L. Real estate activities | 9 162 | 5 661 | 797 | 25 538 | 2 573 | 1 556 | 8 895 | 2 497 | 908 | 1 173 | 58 760 |
| M-N. Professional, scientific and technical services | 2 190 | 23 973 | 7 137 | 33 530 | 2 359 | 2 091 | 5 846 | 26 498 | 2 230 | 1 065 | 106 919 |
| O-Q. Public administration, education, health care | 139 | 3 243 | 246 | 2 566 | 227 | 119 | 318 | 383 | 7 541 | 318 | 15 100 |
| R-U. Other services | 26 | 346 | 61 | 753 | 158 | 15 | 285 | 173 | 2 650 | 1 738 | 6 205 |
| Total | 237 411 | 1 324 541 | 135 708 | 320 879 | 50 022 | 38 761 | 41 527 | 67 614 | 82 169 | 13 547 | 2 312 179 |
| Compensation of employees | 30 745 | 201 538 | 22 757 | 181 600 | 24 549 | 34 242 | 22 648 | 42 957 | 185 711 | 16 440 | 763 187 |
| Net taxes on products | 4 745 | 128 053 | 8 120 | 16 689 | 6 722 | 4 323 | 12 044 | 6 350 | 3 127 | -343 | 189 830 |
| Operating surplus, gross | 100 878 | 109 691 | 14 323 | 156 397 | 23 616 | 32 423 | 76 246 | 21 721 | 21 078 | 13 267 | 569 640 |

| | <i>Intermediate consumption</i> | | | | | | | | | | | |
|---|---------------------------------|--------------------|------------------------|---|---|---------------------------------|----------------------------------|---|---|----------------------------|------------------|--|
| | <i>A. Agriculture</i> | <i>B. Industry</i> | <i>F. Construction</i> | <i>G-I. Trade, transport, accommodation</i> | <i>J. Information and communication</i> | <i>K. Finance and insurance</i> | <i>L. Real estate activities</i> | <i>M-N. Professional, scientific and technical services</i> | <i>O-Q. Public administration, education, health care</i> | <i>R-U. Other services</i> | <i>Total</i> | |
| Gross value added at market prices (GDP) | 136 368 | 439 282 | 45 200 | 354 686 | 54 887 | 70 988 | 110 938 | 71 028 | 209 916 | 29 364 | 1 522 657 | |
| Output at purchaser's prices, including trade and transport margins | 373 779 | 1 763 823 | 180 908 | 675 565 | 104 909 | 109 749 | 152 465 | 138 642 | 2 920 | 42 911 | 3 834 836 | |

Input-output tables of Ukraine at purchasers' prices for 2013 (aggregated)

(millions of Hrv)

Continued

| | <i>Final use</i> | | | | | | <i>Exports</i> | <i>Imports</i> | <i>Total</i> |
|---|--|---|---|--------------------------------------|---|----------------|-----------------|----------------|------------------|
| | <i>Household final consumption expenditure</i> | <i>Final consumption expenditure on non-profit institution serving households</i> | <i>General government final consumption expenditure</i> | <i>Gross fixed capital formation</i> | <i>Changes in inventories and valuables</i> | | | | |
| A. Agriculture | 146 117 | | 2 601 | 2 215 | 3 381 | 75 524 | -27 180 | | 373 779 |
| B-E. Industry | 701 650 | | 8 461 | 128 315 | -19 120 | 436 287 | -644 288 | | 1 763 823 |
| F. Construction | 1 754 | | 0 | 121 579 | 1 601 | 2 198 | -1 758 | | 180 908 |
| G-I. Trade, transport, accommodation | 51 716 | | 8 453 | | | 88 558 | -55 245 | | 675 565 |
| J. Information and communication | 30 178 | | 113 | 3 487 | | 21 086 | -18 301 | | 104 909 |
| K. Finance and insurance | 20 555 | | | | | 3 547 | -9 946 | | 109 749 |
| L. Real estate activities | 85 532 | 1 596 | 3 290 | 2 623 | | 2 527 | -1 863 | | 152 465 |
| M-N. Professional, scientific and technical services | 14 222 | | 6 228 | 5 299 | 562 | 16 344 | -10 932 | | 138 642 |
| O-Q. Public administration, education, health care | 26 012 | 2 330 | 250 495 | | | 975 | -2 827 | | 292 085 |
| R-U. Other services | 21 455 | 6 644 | 8 110 | 143 | 23 | 6 134 | -5 803 | | 42 911 |
| Total | 1 099 191 | 10 570 | 287 751 | 263 661 | -13 553 | 653 180 | -778 143 | | 3 834 836 |
| Compensation of employees | | | | | | | | | |
| Net taxes on products | | | | | | | | | |
| Operating surplus, gross | | | | | | | | | |
| Gross value added at market prices (GDP) | | | | | | | | | |
| Output at purchaser's prices, including trade and transport margins | | | | | | | | | |

Annex IV

Input-output tables of Ukraine at basic prices for 2013 (aggregated)
(millions of Hrv)

| | <i>Intermediate consumption</i> | | | | | | | | | | |
|--|---------------------------------|--------------------|------------------------|---|---|---------------------------------|----------------------------------|---|---|----------------------------|------------------|
| | <i>A. Agriculture</i> | <i>B. Industry</i> | <i>F. Construction</i> | <i>G-I. Trade, transport, accommodation</i> | <i>J. Information and communication</i> | <i>K. Finance and insurance</i> | <i>L. Real estate activities</i> | <i>M-N. Professional, scientific and technical services</i> | <i>O-Q. Public administration, education, health care</i> | <i>R-U. Other services</i> | <i>Total</i> |
| A. Agriculture | 92 783 | 57 988 | 190 | 6 257 | 7 | 0 | 100 | 105 | 4 636 | 62 | 162 128 |
| B-E. Industry | 59 691 | 673 825 | 66 857 | 127 802 | 6 991 | 1 343 | 15 661 | 15 475 | 42 978 | 4 115 | 1 014 738 |
| F. Construction | 312 | 3 351 | 42 174 | 3 082 | 148 | 83 | 2 920 | 1 711 | 718 | 93 | 54 592 |
| G-I. Trade, transport, accommodation | 13 625 | 115 921 | 12 891 | 77 633 | 2 188 | 3 639 | 1 444 | 6 101 | 9 587 | 2 148 | 245 177 |
| J. Information and communication | 409 | 5 128 | 612 | 11 037 | 33 486 | 816 | 863 | 9 697 | 3 423 | 1 709 | 67 180 |
| K. Finance and insurance | 1 515 | 20 484 | 3 321 | 28 431 | 1 512 | 28 967 | 4 159 | 4 491 | 1 745 | 579 | 95 204 |
| L. Real estate activities | 8 959 | 5 654 | 793 | 25 309 | 2 562 | 1 555 | 8 745 | 2 488 | 862 | 1 133 | 58 060 |
| M-N. Professional, scientific and technical services | 2 094 | 23 900 | 7 054 | 32 901 | 2 342 | 2 088 | 5 637 | 26 260 | 2 056 | 990 | 105 322 |
| O-Q. Public administration, education, health care | 139 | 3 243 | 246 | 2 565 | 227 | 119 | 318 | 383 | 7 530 | 318 | 15 088 |
| R-U. Other services | 26 | 346 | 61 | 752 | 158 | 15 | 284 | 173 | 2 597 | 1718 | 6 130 |
| Total | 179 553 | 909 840 | 134 199 | 315 769 | 49 621 | 38 625 | 40 131 | 66 884 | 76 132 | 12 865 | 1 823 619 |
| Taxes less subsidies on products | 3 639 | 9 935 | 1 509 | 5 110 | 401 | 136 | 1 396 | 730 | 6 037 | 682 | 29 575 |
| Total intermediate consumption/ final consumption at purchasers' prices | 183 192 | 919 775 | 135 708 | 320 879 | 50 022 | 38 761 | 41 527 | 67 614 | 82 169 | 13 547 | 1 853 194 |
| Compensation of employees | 30 745 | 201 538 | 22 757 | 181 600 | 24 549 | 34 242 | 22 648 | 42 957 | 185 711 | 16 440 | 763 187 |

| <i>Intermediate consumption</i> | | | | | | | | | | | |
|-----------------------------------|-----------------------|--------------------|------------------------|---|---|---------------------------------|----------------------------------|---|---|----------------------------|------------------|
| | <i>A. Agriculture</i> | <i>B. Industry</i> | <i>F. Construction</i> | <i>G-I. Trade, transport, accommodation</i> | <i>J. Information and communication</i> | <i>K. Finance and insurance</i> | <i>L. Real estate activities</i> | <i>M-N. Professional, scientific and technical services</i> | <i>O-Q. Public administration, education, health care</i> | <i>R-U. Other services</i> | <i>Total</i> |
| Other net taxes on production | 731 | -8 143 | 1 370 | 6 417 | 1 082 | 866 | 206 | 2 601 | 340 | -1 933 | 3 537 |
| Operating surplus, gross | 100 878 | 109 691 | 14 323 | 156 397 | 23 616 | 32 423 | 76 246 | 21 721 | 21 078 | 13 267 | 569 640 |
| Gross value added at basic prices | 132 354 | 303 086 | 38 450 | 344 414 | 49 247 | 67 531 | 99 100 | 67 279 | 207 129 | 27 774 | 1 336 364 |
| Output at basic prices | 315 546 | 1 222 861 | 174 158 | 665 293 | 99 269 | 106 292 | 140 627 | 134 893 | 289 298 | 41 321 | 3 189 558 |

Input-output tables of Ukraine at basic prices for 2013 (aggregated)

(millions of Hrv)

Continued

| | <i>Final use</i> | | | | | | | <i>Total</i> |
|---|--|---|---|--------------------------------------|---|----------------|-----------------|------------------|
| | <i>Household final consumption expenditure</i> | <i>Final consumption expenditure on non-profit institution serving households</i> | <i>General government final consumption expenditure</i> | <i>Gross fixed capital formation</i> | <i>Changes in inventories and valuables</i> | <i>Exports</i> | <i>Imports</i> | |
| A. Agriculture | 100 236 | | 2 342 | 2 135 | 3 030 | 72 855 | -27 180 | 315 546 |
| B-E. Industry | 332 560 | | 7 096 | 109 840 | -17 320 | 420 235 | -644 288 | 1 222 861 |
| F. Construction | 1 697 | | 0 | 116 048 | 1 382 | 2 197 | -1 758 | 174 158 |
| G-I. Trade, transport, accommodation | 350 683 | | 8 999 | 14 563 | -2 703 | 103 819 | -55 245 | 665 293 |
| J. Information and communication | 25 741 | | 99 | 3 469 | | 21 081 | -18 301 | 99 269 |
| K. Finance and insurance | 17 487 | | | | | 3 547 | -9 946 | 106 292 |
| L. Real estate activities | 74 608 | 1 596 | 3 195 | 2 505 | | 2 526 | -1 863 | 140 627 |
| M-N. Professional, scientific and technical services | 12 252 | | 6 172 | 5 194 | 548 | 16 337 | -10 932 | 134 893 |
| O-Q. Public administration, education, health care | 23 241 | 2 330 | 250 491 | | | 975 | -2 827 | 289 298 |
| R-U. Other services | 19 942 | 6 643 | 8 109 | 143 | 23 | 6 134 | -5 803 | 41 321 |
| Total | 958 447 | 10 569 | 286 503 | 253 897 | -15 040 | 649 706 | -778 143 | 3 189 558 |
| Taxes less subsidies on products | 140 744 | 1 | 1 248 | 9 764 | 1 487 | 3 474 | | 186 293 |
| Total intermediate consumption/final consumption at purchasers' prices | 1 099 191 | 10 570 | 287 751 | 263 661 | -13 553 | 653 180 | -778 143 | 3 375 851 |
| Compensation of employees | | | | | | | | |
| Other net taxes on production | | | | | | | | |
| Operating surplus, gross | | | | | | | | |
| Gross value added at basic prices | | | | | | | | |
| Output at basic prices | | | | | | | | |

Annex V

Use of imports matrix for 2013 (aggregated)

(millions of Hrv)

| | Intermediate consumption | | | | | | | | | | |
|--|--------------------------|--------------------|------------------------|---|---|---------------------------------|----------------------------------|---|---|----------------------------|----------------|
| | <i>A. Agriculture</i> | <i>B. Industry</i> | <i>F. Construction</i> | <i>G-I. Trade, transport, accommodation</i> | <i>J. Information and communication</i> | <i>K. Finance and insurance</i> | <i>L. Real estate activities</i> | <i>M-N. Professional, scientific and technical services</i> | <i>O-Q. Public administration, education, health care</i> | <i>R-U. Other services</i> | <i>Total</i> |
| A. Agriculture | 2 336 | 9 504 | 2 | 32 | | | 1 | | 25 | | 11 900 |
| B-E. Industry | 40 844 | 272 130 | 29 281 | 57 570 | 2 830 | 210 | 1 727 | 3 476 | 13 133 | 1 332 | 422 533 |
| F. Construction | 3 | 32 | 428 | 32 | 1 | 1 | 31 | 17 | 8 | | 553 |
| G-I. Trade, transport, accommodation | 1 776 | 11 030 | 1 058 | 18 514 | 330 | 274 | 255 | 1 537 | 1 517 | 634 | 36 925 |
| J. Information and communication | 77 | 1 047 | 108 | 2 284 | 6 828 | 162 | 162 | 1 899 | 586 | 337 | 13 490 |
| K. Finance and insurance | 134 | 1 809 | 293 | 2 510 | 133 | 2 556 | 367 | 397 | 153 | 51 | 8 403 |
| L. Real estate activities | 123 | 76 | 11 | 345 | 34 | 21 | 120 | 34 | 12 | 15 | 791 |
| M-N. Professional, scientific and technical services | 154 | 2 085 | 496 | 2 947 | 201 | 163 | 406 | 2 363 | 266 | 73 | 9 154 |
| O-Q. Public administration, education, health care | 2 | 31 | 3 | 28 | 1 | | 2 | 2 | 57 | 4 | 130 |
| R-U. Other services | 10 | 85 | 33 | 206 | 39 | 7 | 82 | 56 | 769 | 509 | 1 796 |
| Total | 45 459 | 297 829 | 31 713 | 84 468 | 10 397 | 3 394 | 3 153 | 9 781 | 16 526 | 2 955 | 505 675 |

Use of imports matrix for 2013 (aggregated)

(millions of Hrv)

Continued

| | <i>Final use</i> | | | | | <i>Total use of imports</i> |
|--|--|---|---|--------------------------------------|---|-----------------------------|
| | <i>Household final consumption expenditure</i> | <i>Final consumption expenditure on non-profit institution serving households</i> | <i>General government final consumption expenditure</i> | <i>Gross fixed capital formation</i> | <i>Changes in inventories and valuables</i> | |
| A. Agriculture | 14 195 | | 12 | 1 057 | 16 | 27 180 |
| B-E. Industry | 144 022 | | 1 125 | 78 524 | -1 916 | 644 288 |
| F. Construction | 17 | | | 1 174 | 14 | 1 758 |
| G-I. Trade, transport, accommodation | 18 320 | | | | | 55 245 |
| J. Information and communication | 3 815 | | | 996 | | 18 301 |
| K. Finance and insurance | 1 543 | | | | | 9 946 |
| L. Real estate activities | 1 016 | 22 | | 34 | | 1 863 |
| M-N. Professional, scientific and technical services | 692 | | | 980 | 106 | 10 932 |
| O-Q. Public administration, education, health care | 519 | 73 | 2 105 | | | 2 827 |
| R-U. Other services | 3 833 | 154 | | 13 | 7 | 5 803 |
| Total | 187 972 | 249 | 3 242 | 82 778 | -1 773 | 778 143 |