Estimation of sectorial <u>Job Multipliers</u> in Albanian Economy

Presentation prepared by Ergita Kokaveshi, PhD based on the study prepared by Enton Duro, PhD et. al.

Problem faced by economy in developing countries

✓ Employment → the key challenge of many governments all around the world

✓ Low employment among youth → the main constrain that undermines the development of low and middle income countries.
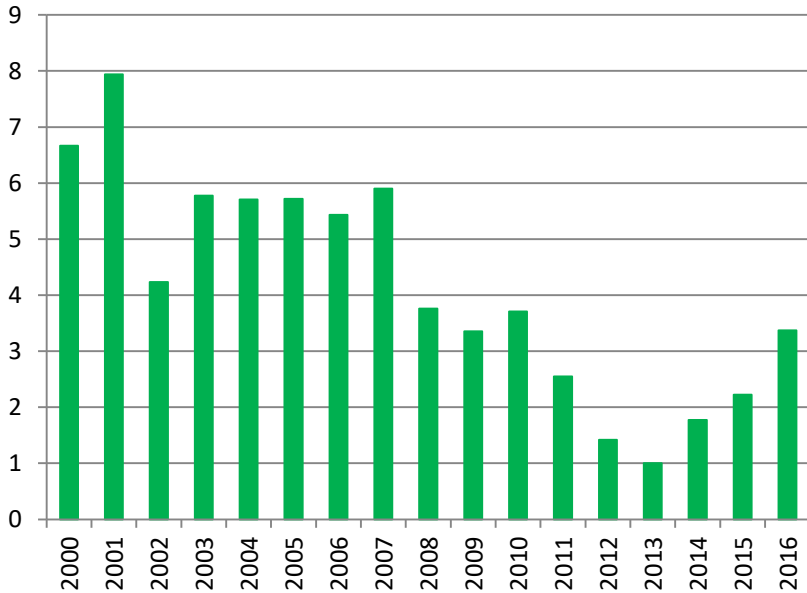
✓ Employment and its quality

It is not all about incomes, but it is about giving value to the citizens, it impacts their self-accomplishment and satisfaction about their quality of life and also increases social cohesion

Job creation solutions of development projects

✓ The demand side: increase of demand for private sector products and services

✓ The supply side: increase of capacities of professionals in a certain sector

✓ Improving the regulatory and business environment

✓ An integration of all those instruments

Some evidences – Can we do better?

GDP Growth (Annual %)

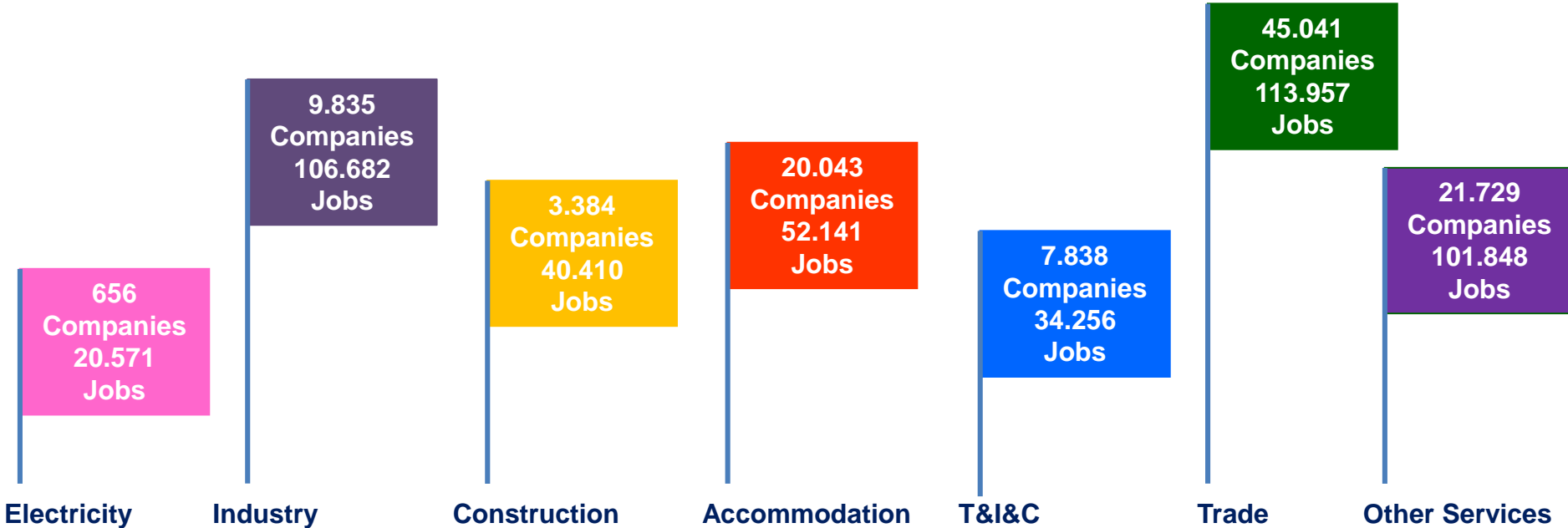**Source:** *World Bank*

Unemployment & Employment

Legend: ■ Unemployment ■ Employment to population ratio, 15+, total (%)

Source: *World Bank*

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Some evidences – Can we do better?

Electricity — 656 Companies 20.571 Jobs

Industry — 9.835 Companies 106.682 Jobs

Construction — 3.384 Companies 40.410 Jobs

Accommodation — 20.043 Companies 52.141 Jobs

T&I&C — 7.838 Companies 34.256 Jobs

Trade — 45.041 Companies 113.957 Jobs

Other Services — 21.729 Companies 101.848 Jobs

We Can do better

Inter – correlated sectors
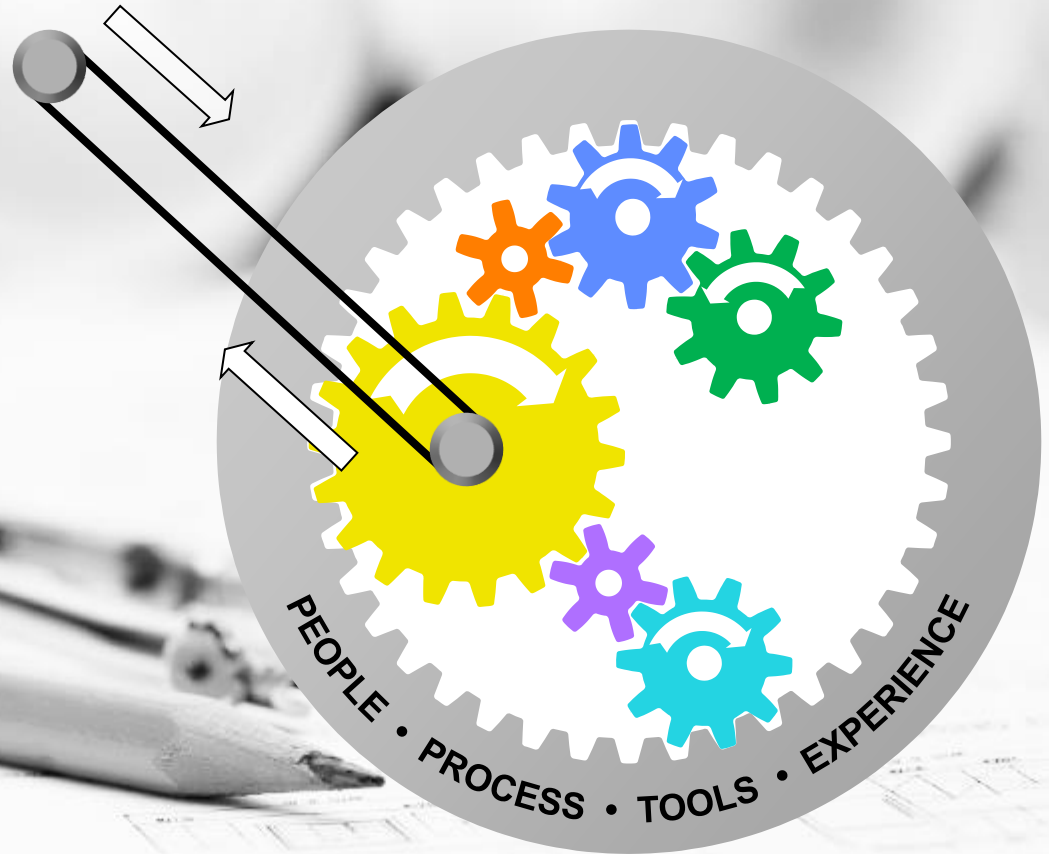
Economic sectors are highly interdependent

The demand for final product of a sector will affect the economy as a whole

People don't just make a purchase/service, they make an impact

Increase of labor in a given sector

Increase demand for intermediate consumption

Increase Output in general

PEOPLE • PROCESS • TOOLS • EXPERIENCE

Definitions

Inter – correlations between different sector of the economy can be estimated numerically through the sets of multipliers, which expresses the ratio of change an endogenous variable in response to a change in some exogenous variable.

For example: How much sales will increase in Albania as a result of increase of demand for a particular tourism product?

As we will further see, there is direct, indirect and induced effect

Definitions

The base for the estimation of the sets of multipliers are the input – output tables , which are published by the National Accounts.

It is an integrated table that shows quantitatively interdependences between different economic sectors and economic flows as a whole.

Those tables are published after four or five years, depending by the country, and the last available for Albania, when the study was commissioned last year, were those for the year 2013.

But still, as those are estimations and the structure of economy in the country has not varied too much within the last five years, we can presume that the multipliers, which at the end are ratios, did not vary to much through the time.

Definitions – Multiplier Type I

Intersectorial effects - direct and indirect effects.

For example: If we demand for a tourism product to a tourism business, which costs 10'000 ALL, the direct effect will be increase in sales of 10'000 ALL.

This money do not disappear. The tourism business, in order to deliver the product, will need to buy raw materials, goods and services to its suppliers, like (for example) transport services, or internet and electricity to run the office etc., which may cost 4'000 ALL.

In this case the increase in demand for a tourism product has increased the sales directly for the tourism business and indirectly for its supplier. This direct and indirect effect is expressed by Multiplier type I.

Definitions – Multiplier Type II

Intersectorial effects plus induced effects – household spending

Multiplier type II is Multiplier Type I plus additional induced effect

The induced effect is caused by the re – sending of the additional incomes incurred by businesses and individuals as a result of increase in demand for products in a particular sector generates in the overall economy.
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Returning to the tourism product example. The additional incomes generated as a result of the sale of the 10'000 ALL, for example 1'500 ALL, will be re – spent in the economy and create the induced effect.

Definitions

Inputs: or factors of production, are those needed for the production process of finished good and services;

Output: quantity of goods or services produced in a given time period, by a firm, industry, or country, consumed or used for further production.

Note: sometimes inputs are referred as producers' goods and services, which are used by producers, to be distinguished from consumers' good and services, which are outputs. As noted, outputs of a certain industry can be inputs of another.

Output *Multiplier*

Refers to the ratio of change in total output that is required from all sectors to the direct change in the basic output of a particular sector as a result of change in demand.

Definitions

GVA: is the Gross Value Added, here referred according to National Accounts, that is output (value of the finished products) minus intermediate consumption (ie inputs);

Note: GVA serves as a balancing item of the national accounts' production account, and simplistically it can be defined: the grand total of all revenues, from final sales and subsidies, minus value of inputs used.

GVA *Multiplier*

Is the ratio of change in the total GVA, due to a unit increase in final demand of a particular sector.

Definitions

Incomes: is the sum of all the wages, salaries, profits, interest payments, rents, and other forms of earnings received in a given period of time.

Income *Multiplier*

The change in employee compensation occurring across the economy as a result of a change in demand for final products.

Definitions

Employment: an economic situation in which all labor resources are being used in the most efficient way possible.
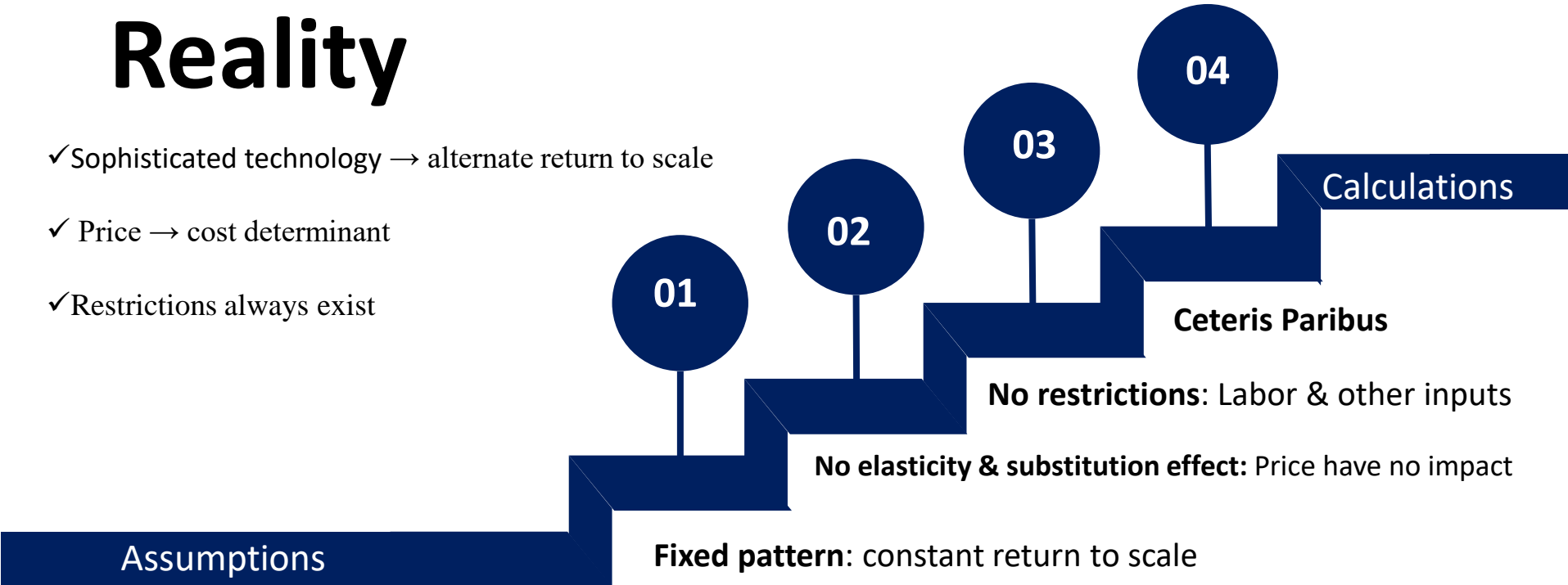
Employment *Multiplier*

In this study estimates the ratio of change in total job creation in the economy due to job creation in a particular sector when there is a change in the demand for final products

Important Assumptions

Limitations of Input – Output table

Reality

✓ Sophisticated technology → alternate return to scale

✓ Price → cost determinant

✓ Restrictions always exist

04

03

02

01

Calculations

Ceteris Paribus

No restrictions: Labor & other inputs

No elasticity & substitution effect: Price have no impact

Assumptions

Fixed pattern: constant return to scale

Some sectorial sets of multipliers:

Which does best and which does worst?

Output Multipliers

Sectors	Type I	Rank	Type II	Rank	Indirect effect	Induced effect
Agriculture, forestry and fishing	1,33	**24**	1,46	**27**	0,33	1,13
Construction	2,01	**1**	2,09	**1**	1,01	0,08
Accommodation and food service activities	1,38	**22**	1,51	**23**	0,38	0,13
Telecomunication	1,75	**2**	1,81	**5**	0,75	0,06
Computer programming, consultancy service; information services activity	1,63	**9**	1,68	**13**	0,63	0,05
Real Estate activities	1,24	**31**	1,26	**32**	0,24	0,02
Scientific research and development; other professional scientific and technical activities	1,59	**12**	1,69	**11**	0,59	0,1
Manufacture of food products, beverages and tobacco products	1,62	**10**	1,71	**10**	0,62	0,09

Source: *Author calculation*

GVA Multipliers

Sectors	Type I	Rank	Type II	Rank	Indirect effect	Induced effect
Agriculture, forestry and fishing	1,29	**26**	1,38	**26**	0,29	0,09
Construction	2,05	**3**	2,17	**4**	1,05	0,12
Accommodation and food service activities	1,59	**13**	1,8	**11**	0,59	0,21
Telecomunication	1,96	**6**	2,06	**7**	0,96	0,1
Computer programming, consultancy service; information services activity	1,57	**14**	1,63	**20**	0,57	0,06
Real Estate activities	1,11	**33**	1,12	**34**	0,11	0,01
Scientific research and development; other professional scientific and technical activities	1,64	**11**	1,77	**12**	0,64	0,13
Manufacture of food products, beverages and tobacco products	2,59	**27**	2,82	**1**	1,59	0,23

Source: *Author calculation*

Income Multipliers

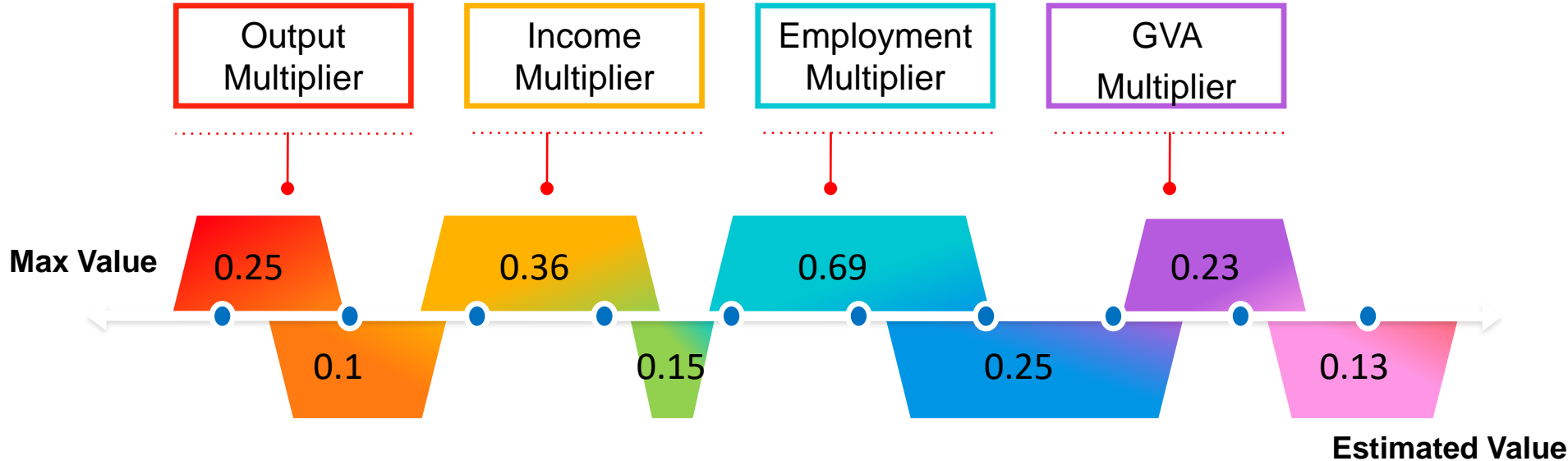| Sectors	Type I	Rank	Type II	Rank	Indirect effect	Induced effect
Agriculture, forestry and fishing	1,8	9	1,91	9	0,8	0,11
Construcion	2,23	6	2,42	8	1,23	0,19
Accommodation and food service activities	1,29	26	1,4	26	0,29	0,11
Telecomunication	3,2	2	3,47	2	2,2	0,27
Computer programming, consultancy service; information services activity	2,62	4	2,84	22	1,62	0,22
Real Estate activities	4,28	1	4,64	1	3,28	0,36
Scientific research and development; other professional scientific and technical activities	1,49	15	1,62	15	0,49	0,13
Manufacture of food products, beverages and tobacco products	2,73	10	2,97	3	1,73	0,24

Source: *Author calculation*

Employment Multipliers

Sectors	Type I	Rank	Type II	Rank	Indirect effect	Induced effect
Agriculture, forestry and fishing	1,23	**26**	1,29	**32**	0,23	0,06
Construcion	1,97	**6**	2,22	**8**	0,97	0,25
Accommodation and food service activities	1,34	**11**	1,46	**24**	0,34	0,12
Telecomunication	3,33	**2**	3,84	**2**	2,33	0,51
Computer programming, consultancy service; information services activity	3,23	**3**	3,68	**6**	2,23	0,45
Real Estate activities	4,27	**1**	4,96	**1**	3,27	0,69
Scientific research and development; other professional scientific and technical activities	1,52	**15**	1,76	**17**	0,76	0,24
Manufacture of food products, beverages and tobacco products	2,51	**13**	2,68	**4**	1,68	0,17

Source: *Author calculation*

Induced Effect

| Output Multiplier | Income Multiplier | Employment Multiplier | GVA Multiplier |

Max Value

| 0.25 | 0.36 | 0.69 | 0.23 |

| 0.1 | 0.15 | 0.25 | 0.13 |

Estimated Value

Induced effect could be even higher in Albania that the one estimated, if measures could be made in order to have more qualified and better paid workforce.

Conclusions & Recommendations

✓Sectorial multipliers can be used as an approximation for each policy maker in order to measure the policy overall impact in the economy.

✓Lower levels of multipliers in some sectors and the differences calculated in induced effects, reflect that production capacities are not fully exploited and that productivity could still be increased through training and qualification of labor force.

✓The particular importance of agriculture and tourism for Albanian economy and the need to optimize their efficiency in the economy, requires the increase of human capital, creation and diversifying product and at the same time the involvement of full time employs.

Conclusions & Recommendations

✓ Implementation of structural reforms in agriculture sector to increase the surface per entity. This would require farmers training to establish cooperatives in order to eliminate the land fragmentation problem.

✓The tourism sector is mostly seasonal .The diversity of touristic products could increase the tourism period and at the same time the level of contribution in the economy.

✓Employment multiplier was generally higher in technology intensive sectors like communication and computer programming and policies that stimulate the investment in those sectors could be of high value for employment purposes, and by many experts the sector is defined as very promising.

Thank YOU

Disclaimer: The study was made possible with the financial support of RisiAlbania project. Results, conclusions and opinions stated and/or expressed by authors do not necessary reflect the views of the RisiAlbania project and its implementing partners.