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## Investment Requirements of Ukraine for the Next Five Years

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This note calculates the investment requirements of Ukraine for the next five years, assuming that the country would be growing by a minimum of 5% pa (in 2016, it may grow by about 2% pa and a slightly higher than 5% rate thereafter). This rate of GDP growth is the minimum growth required by Ukraine to have a noticeable impact on poverty and the quality of life of the population. The rate of growth would be higher for agriculture, as it has a higher potential. It would lower for others. The assumptions for the growth rates of individual sectors are stated in the last column of the attached table.

The results are given in the attached tables. They show that, based on individual sector growth rates as stated in the table, the 5-year average growth rate for GDP would be 5.7% pa.

To achieve this growth rate, Ukraine will need USD 150 billion of investments, or about USD 30 billion per year. This number is twice the level of investments achieved in 2015 (USD 15 billion/yr). Therefore, this investment level would be feasible only if Ukraine is able to attract about USD 10 billion to USD 12 billion of foreign direct investment per year. The rest (USD 18-20 billion/yr) could come from internal sources, principally by the companies' own resources, as has been the case in the last few years. In fact, in 2015, 67% of the country's investment requirements were financed by own funds of corporations, 22% by public funds, 8% by banks, and 3% by FDI. These numbers highlight the importance of improving Ukraine's investment climate to attract FDIs, as we have stated in many recent occasions. Otherwise GDP growth would be anemic. As we discussed, in order to reduce poverty and unemployment, Ukraine will need to grow by no less than 5% pa.

The estimation of the above investment requirements was made on the basis of reasonable "Incremental Capital Output Ratios (ICOR)" which were applied to the increments in GDP during the period. These capital output ratios were obtained from similar studies in a number of developing countries, adjusted by the special characteristics of Ukraine, which demand a somewhat higher capital intensity, giving the deterioration of its productive capacity and infrastructure. In general, services have the lowest ICORs, followed by agriculture, infrastructure, transportation, and then manufacturing (principally heavy industry).

The attached table shows that the USD 30 billion per year of investments would be used as indicated in the table below. About USD 5.8 billion/year would be for agriculture. This estimate is consistent with our agriculture report on "Unleashing Ukraine Agro Potential", which stated that for agriculture to grow by 10% pa, it would need from USD 5 bln/yr to USD 8 billion/yr. Manufacturing would be the largest user of investments, requiring USD 6.7 bln/yr. The third largest user would be transportation and storage, requiring USD 3.1 bln/yr.

## Calculation of Investment Requirements for the 5-year period 2016-2020, based on Capital Output Ratios

	2015 GDP UAH billion	2015 USD billion(@19.9 UAH/USD 2015 average)	Incremental GDP 2016-2020 in USD billion	Incremental Capital Output Ratio	Investment Requirement for the five years USD Bln	Assumptions
	1,979.5	99.5	32.3	4.6	149.8	About USD30 bln year, with 1/3 (USD10 bln) in FDI
Agriculture, forestry and fishing	236.0	11.9	7.2	4.0	29.0	Growth rate of 10% pa (to bring grain output from 60 mnTon/yr in 2015 to 95 mnTons/yr in 5 years)
Mining and quarrying	94.8	4.8	1.1	6.0	6.9	Growth rate 2% in 2016 and 5% pa thereafter
Manufacturing	239.1	12.0	4.2	8.0	33.6	Growth rate of 3% in 2016 and 7% pa thereafter
Electricity, gas, steam & air conditioning supply	54.2	2.7	0.8	7.0	5.5	Growth rate of 2% in 2016 and 6% pa thereafter
Water supply; sewerage, waste management	9.5	0.5	0.1	5.0	0.6	Growth rate 2% in 2016 and 5% pa thereafter
Construction	44.7	2.2	0.8	7.0	5.3	Growth rate of 2% in 2016 and 7% pa thereafter
Wholesale and retail trade	288.1	14.5	4.9	3.0	14.6	Growth rate of 2% in 2016 and 7% pa thereafter
Transportation and storage	131.2	6.6	2.2	7.0	15.6	Growth rate of 2% in 2016 and 7% pa thereafter
Information and communication	67.8	3.4	0.8	4.0	3.3	Growth rate 2% in 2016 and 5% pa thereafter
Financial and insurance activities	61.3	3.1	1.0	3.0	3.1	Growth rate 2% in 2016 and 7% pa thereafter
Real estate activities	110.4	5.5	1.3	5.0	6.7	Growth rate 2% in 2016 and 5% pa thereafter
Professional, scientific and technical activities	53.8	2.7	0.6	2.0	1.3	Growth rate 2% in 2016 and 5% pa thereafter
Public administration and defense; social security; support services	115.1	5.8	1.4	3.0	4.2	Growth rate 2% in 2016 and 5% pa thereafter
Education, human health and social work activities	138.9	7.0	1.7	3.0	5.0	Growth rate 2% in 2016 and 5% pa thereafter
Arts, entertainment and recreation, accommodation and food services & other service activities	36.4	1.8	0.4	2.0	0.9	Growth rate 2% in 2016 and 5% pa thereafter
Other GDP Activities	298.1	15.0	3.6	4.0	14.4	Growth rate 2% in 2016 and 5% pa thereafter

### Total Investments per year in 2015-20120

	USD bln/yr
<b>Total Investments/year in USD bln</b>	<b>30.0</b>
Agriculture, forestry and fishing	5.8
Mining and quarrying	1.4
Manufacturing	6.7
Electricity, gas, steam & air conditioning supply	1.1
Water supply; sewerage, waste management	0.1
Construction	1.1
Wholesale and retail trade	2.9
Transportation and storage	3.1
Information and communication	0.7
Financial and insurance activities	0.6
Real estate activities	1.3
Professional, scientific and technical activities	0.3
Public administration and defense; social security	0.8
Education, human health and social work activities	1.0
Arts, entertainment and recreation, accommodation and food services & other service activities	0.2
Other GDP Activities	2.9

In terms of the breakdown of these investments across sectors, the investment breakdown would be as follows (based on the structure of Ukraine economy and recent investment structures):

### Breakdown of Investments

	Total	USD bln Inv for 5 years	USD bln Inv/Year
	100.0%	150.0	30.0
Machinery and Equipment, Tools, Vehicles	40.0%	60.0	12.0
Non-Residential Buildings, Installations and Infrastructure	35.0%	52.5	10.5
Dwellings	10.0%	15.0	3.0
Defense Systems	10.0%	15.0	3.0
Intangible Assets	5.0%	7.5	1.5