HOW TO FIGHT RURAL POVERTY IN UZBEKISTAN?

By

SHADIKDHOJAEV Uygun

THESIS

Submitted to

KDI School of Public Policy and Management

in partial fulfillment of requirements

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MASTER OF PUBLIC POLICY AND MANAGEMENT

2011

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Committee in charge:

Professor Jin PARK, Supervisor

Professor Kye-Woo, LEE

Professor Yoon-HA, YOO

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ABSTRACT

In this work I try to evaluate extent of poverty, specifically rural poverty in Uzbekistan, a former Soviet Republic. By comparing data for poverty by making linear regression and computing forecasted poverty rate I find that actual poverty is lower than forecasted. Therefore, the focus moves to rural poverty and to fight it and author tries to implement Lewis two sector model to fight against rural poverty. Finally, various policy recommendations are drawn after careful analysis of rural poverty.

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I. Introduction

Poverty is a pressing issue all over the world today. Around third of the world population lives in conditions of extreme poverty.

Furthermore, poverty in a given country can be distinguished in terms of gender, age, area based approaches. Apart from low income, poverty has many dimensions such as illiteracy, illnesses, gender inequality and environmental effects are all related to being poor.

However defined, poverty alleviation is a pressing issue which is included in the list of Millennium Development Goals. This gives a stimulus for policy makers and researchers to find ways to reduce poverty.

In this manner, in this work I focus on poverty. I focus more precisely on poverty in rural areas of Uzbekistan since majority of the poor are from rural areas. I try to use generally available data to analyze current situation and give specific recommendations.

First I start by analyzing world poverty issue. Then I analyze data for Uzbekistan and try to make a comparison. Later by using Lewis two sector development model I try give recommendation on the ways rural poverty can be fought in Uzbekistan.

The problem of rural remains very actual for many of the worlds developing countries. By having attempted to address such an issue I hope to make a small but an important contribution towards solution of the problem.

II. Research Framework

2.1. Literature Review

To write about poverty in Uzbekistan, I will start with poverty in general and rural poverty in specific in countries of the world. Then I will make transition to Uzbek economy.

In the world today there are few issues that are urgent and widespread as poverty. It can be defined in a multitude of ways, starting from absolute poverty, relative poverty and with concrete measures such as population living below one or two dollars per day. Today more than 1.4 bln people live below poverty line of $1.25 per day according to World bank estimates (Anup Shah, 2011).

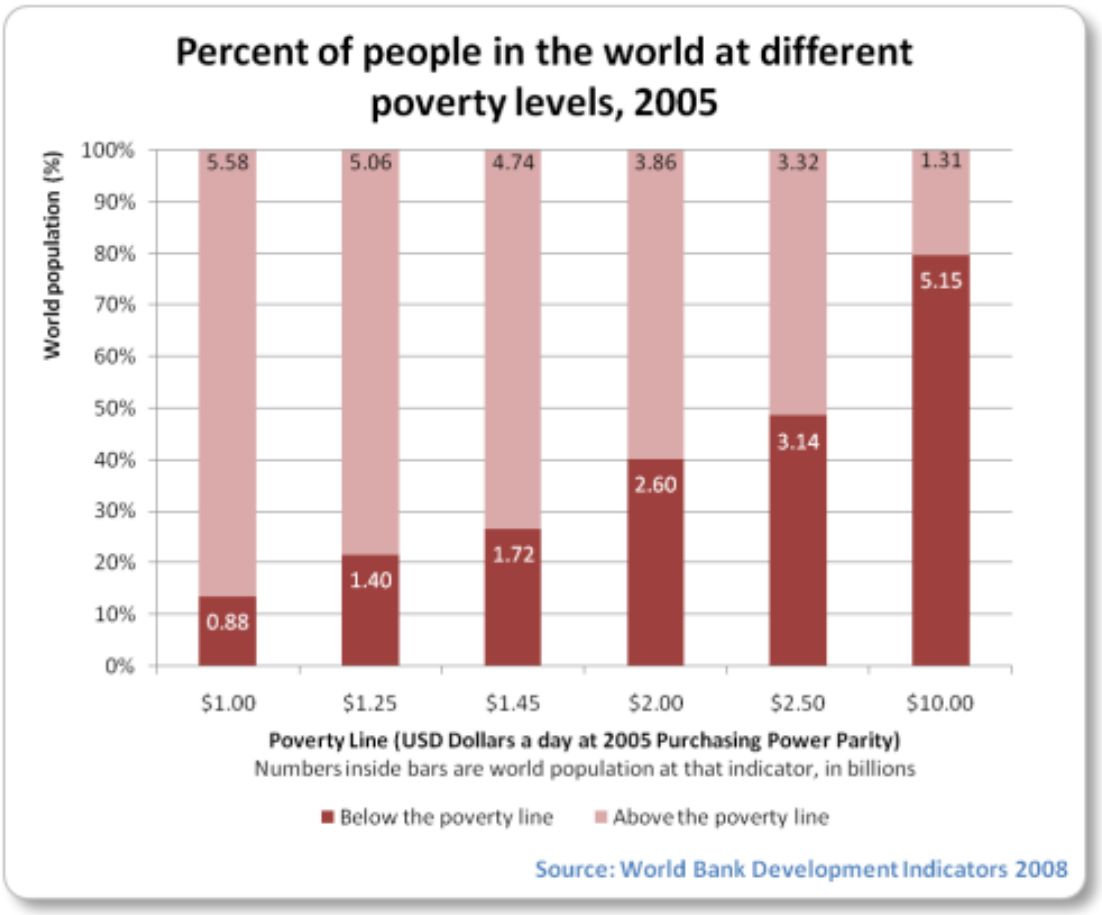
Poverty rates at international poverty line ($1.25 a day) in selected countries			
	Most Recent Value		**Most Recent Value**
East Asia & Pacific		**Middle East & North Africa**	
Cambodia	28.3	Egypt, Arab Rep.	2.0
Lao PDR	33.9	Iraq	4.0
Papua New Guinea	35.8	Jordan	0.4
Vietnam	13.1	Morocco	2.5
China	15.9	Syrian Arab Republic	1.7
Indonesia	18.7	Tunisia	2.6
Micronesia, Fed. Sts.	31.2	Djibouti	18.8
Philippines	22.6	Yemen, Rep.	17.5
Mongolia	22.4	Algeria	6.8
Timor-Leste	37.4	Iran, Islamic Rep.	1.5
Europe & Central Asia		**South Asia**	
Kyrgyz Republic	1.9	Bangladesh	49.6
Tajikistan	21.5	Nepal	55.1
Armenia	1.3	India	41.6
Georgia	14.7	Pakistan	22.6
Uzbekistan	20.3	Bhutan	26.2
Turkmenistan	24.8	Maldives	1.5
Ukraine	0.1	Sri Lanka	7.0
Moldova	1.9	**Sub-Saharan Africa**	
Azerbaijan	1.0	Benin	47.3

Bosnia and Herzegovina	0.0	Burkina Faso	56.5
Turkey	2.7	Guinea-Bissau	48.8
Lithuania	0.0	Kenya	19.7
Latin America & Caribbean		Liberia	83.7
Haiti	54.9	Madagascar	67.8
Bolivia	14.0	Malawi	73.9
St. Lucia	20.9	Uganda	28.7
Panama	9.5	Nigeria	64.4
Peru	5.9	Sao Tome and Principe	28.6
Suriname	15.5	Senegal	33.5
Venezuela, RB	3.5	Botswana	31.2

Source: Worldbank Statistics 2011

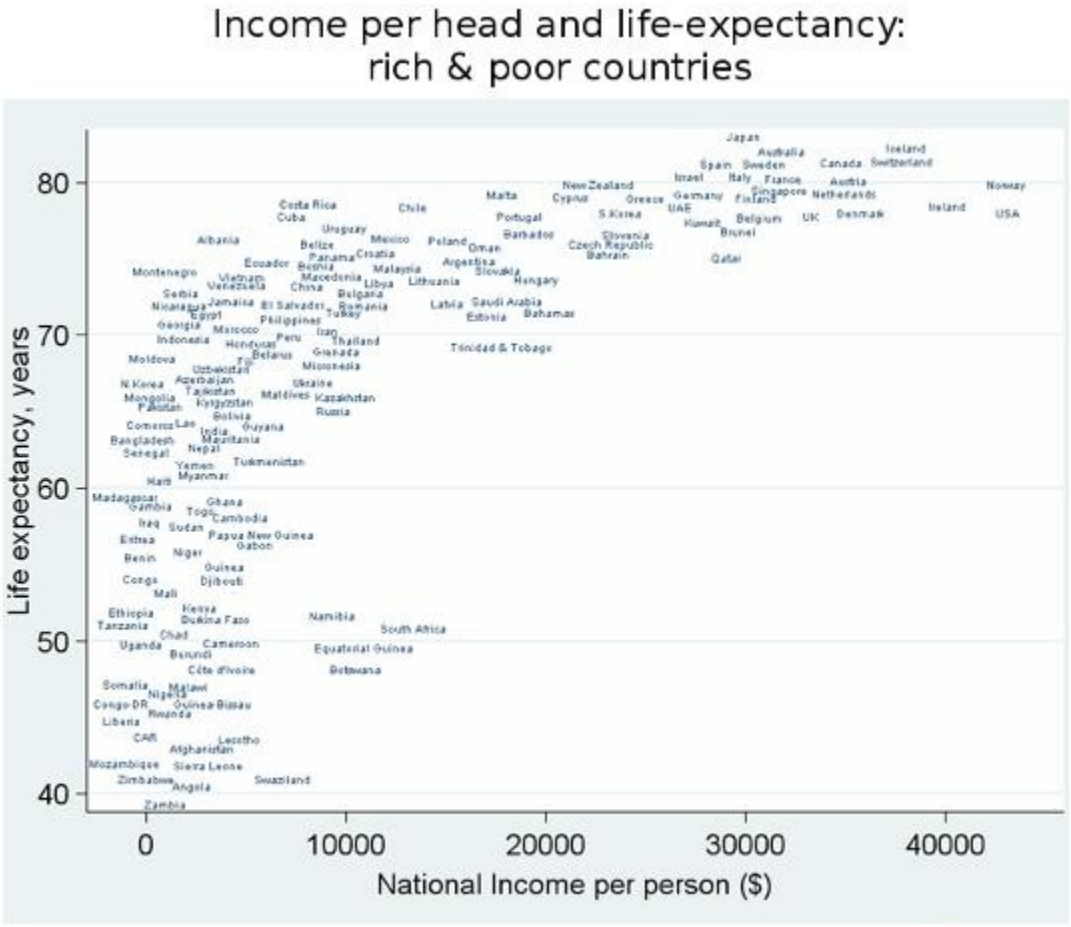
The table above shows poverty rate in selected countries of the world. As can be seen the poorest live majorly in South East Asia and Africa.

Poverty rate may vary if defined and measured differently as can be seen from the chart below.



Evidence shows that sustainable economic growth can help reduce poverty rate of a country (Bolnick Bruce, 2010). Economic growth means an increased production of economic goods and services measured in per capita terms.

Poverty is a source for other problems of the society. Pressing issues such as malnutrition in poor families, access to education, longevity and fight against health problems are all related to some extent to the wellbeing people.



The figure above shows correlation between national income per person and life expectancy measured in years. As can be observed, higher national income per capita can lead to higher life expectancy.

It is central in economic literature that income per capita is not the only factor that explains poverty. High levels of income is not a guarantee for reduced poverty levels. An economic wealth may be distributed unevenly across different layers of society so that only few people will be extremely rich while majority others remain at their low levels of income.

In this regard, inequality is another determinant which is vital in understanding overall picture of poverty and shows distribution of income in the society.

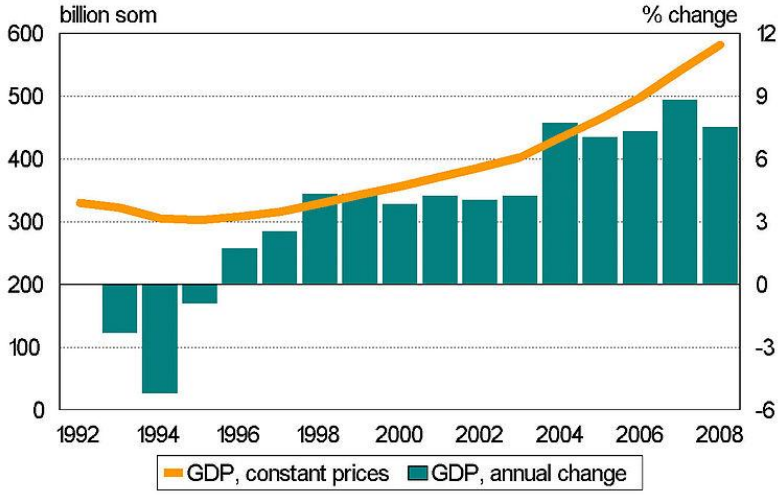
As we have discussed and shown, poverty is acute in many countries of the world and within each of those poor countries, poverty in rural areas is the most acute. It is imperative that most of the poor live in rural areas today. Around 70% of the world poor live in rural area today according to the last Rural poverty report (IFAD 2011). Also, most of the world's population is living in rural areas rather than in urban areas. This in its turn is contributing to the rural poverty.

In this regard Uzbekistan is not an exception and more than 74% people live in rural areas. That is why we will concentrate on ways to fight rural poverty in Uzbekistan in this work.

2.2. Overview of Uzbek Economy

Uzbekistan is one of the former Soviet Republics situated in the centre of Central Asia. It borders with Kazakhstan, Turkmenistan, Afghanistan, Tajikistan and Turkmenistan. It has population of around 28 million people with almost 100% literacy rate.

Its GDP was around 76 bln. USD in 2009 and on per capita basis 2800 USD. It is also 2nd largest exporter of cotton, 7th largest producer of gold and 10th largest producer of natural gas (CIA Worldfactbook., 2010). Its GDP has been rising on average by 5% as can been seen from the table based on IMF data below.



Source: IMF World outlook, October 2007

In GDP composition industry sector dominates by producing 39.5% of total output while services produce 33.7%, and agriculture being 26.8%. In terms of employment agriculture dominates with 44% of total workforce employment, with other two – industry being 20% and services being 36%.

Investments Structure

Currently, Uzbekistan is on the way of modernizing its economic structure. It has been pursuing industrialization since the early days of independence. Current investments to fixed capital as percentage of GDP have been rising and increased from 18.6% in 2006 to 23% in 2008 to 26.1% in 2009 (Government of Republic of Uzbekistan., 2007,, Gulyamov I., and Taniguchi K., 2010).

During initial years of transition in 1990-2000 majority of the investment went to industry making around 54% of all investments, whilst agriculture received little as 9.4% of total investments (CER, 2005).

Table 1.13.
Sectoral Composition of Investment, 1998–2001

Investment by Sector	Percentage of Total
All sectors	100.0
Industry	54.9
Fuel and energy complex	19.0
Machine building and metal working	8.3
Chemical and petrochemical industries	10.1
Other industry	17.5
Agriculture	9.4
Construction	0.9
Transport and communication	25.0
Other sectors[1]	9.8

1 Other sectors include trade, public catering and services.
Sources: Ministry of Economy.

As was illustrated, Uzbekistan has already been increasing investment to capital goods, and therefore has been on the increasing industrial output.

Natural Resources

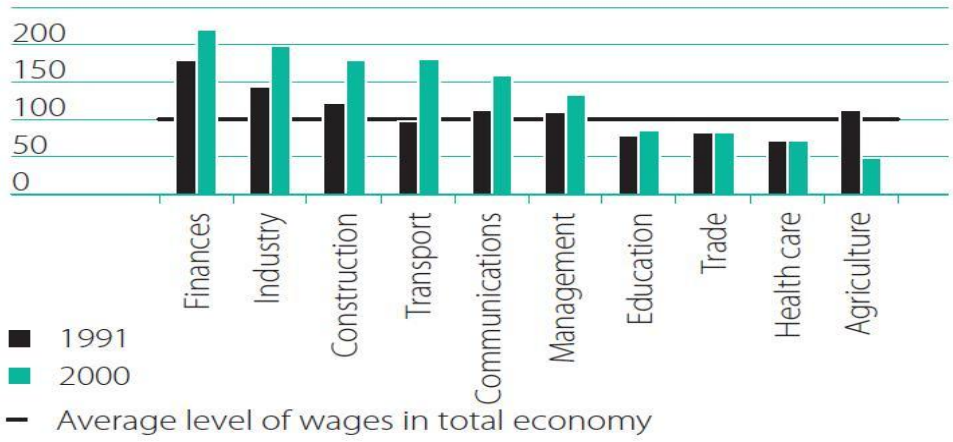
Uzbekistan is a country with rich natural resources. It is the second largest exporter of gold and has substantial reserves of it (CIA Factbook, 2011). It is also the second

largest exporter of cotton and vast areas of agricultural land is devoted for cotton production.

Furthermore, 1.841 trillion cu meters of proved natural gas reserves and 594 million proved oil reserves. Export of carbohydrates constitute around for 40% of total exports and that is why it is an important source of foreign earnings.

Wage Composition

When comparing wages, the agricultural sector wages have decreased in comparison to national average by half whilst industrial wages have increased and become twice that of national average. This is despite the fact that majority of workforce is employed in agriculture.



Agricultural employment has decreased in initial years, however rose later. Currently agriculture employs more than 44% of population with other sectors making less employment as can be seen from the table below.

Table 1.19.
Sectoral Composition of Employment, 1991–2001
(percentage of total)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
All Sectors	100	100	100	100	100	100	100	100	100	100	100
Agriculture	41.9	43.5	44.4	43.2	41.2	40.9	40.7	39.4	36.2	34.4	33.5
Industry	14.3	13.9	14.1	12.7	12.9	12.9	12.8	12.7	12.7	12.7	12.7
Construction	8.2	7.2	6.8	6.2	6.4	6.3	6.3	6.5	7.2	7.5	7.7
Transport & Communication	4.8	4.4	4.2	4.1	4.1	4.2	4.1	4.1	4.2	4.3	4.3
Sales and catering	5.6	5.5	5.5	6.7	8.3	8.3	8.2	8.1	8.3	8.4	8.5
Other, including:	25.2	25.5	24.9	26.8	27.0	27.3	27.8	29.2	31.5	32.7	33.3
Public health	5.9	6.0	6.0	5.8	5.8	5.8	5.8	5.7	6.1	6.5	6.6
Education, culture, art, science	13.6	13.5	13.1	12.9	12.5	12.5	12.3	12.2	12.3	12.8	12.8

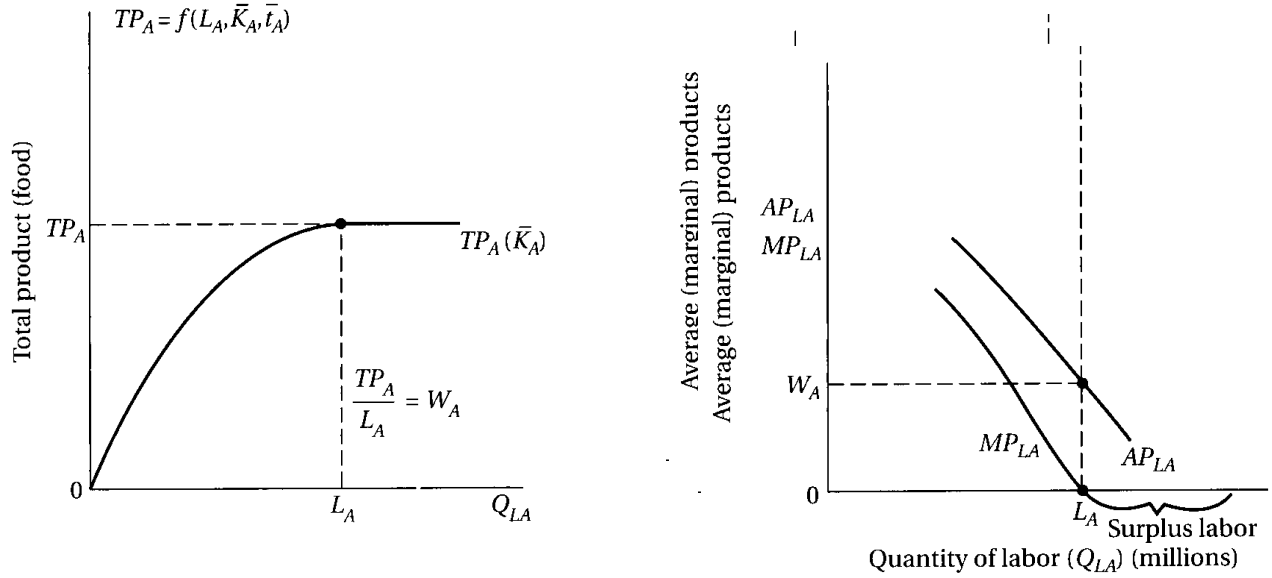
2.3. Theoretical Background – Lewis Two Sector Model

To address the issue of rural poverty and make policy recommendation I will use Lewis model which will be specified here. In his Nobel Prize winning article "Economic Development with Unlimited Supplies of Labor" published in *The Manchester School* in May 1954 Arthur Lewis sets out basic principles through which countries developed and made one of the most important contributions to the development economics (Kirkpatrick, C. and Barientos A. 2004, p.2).

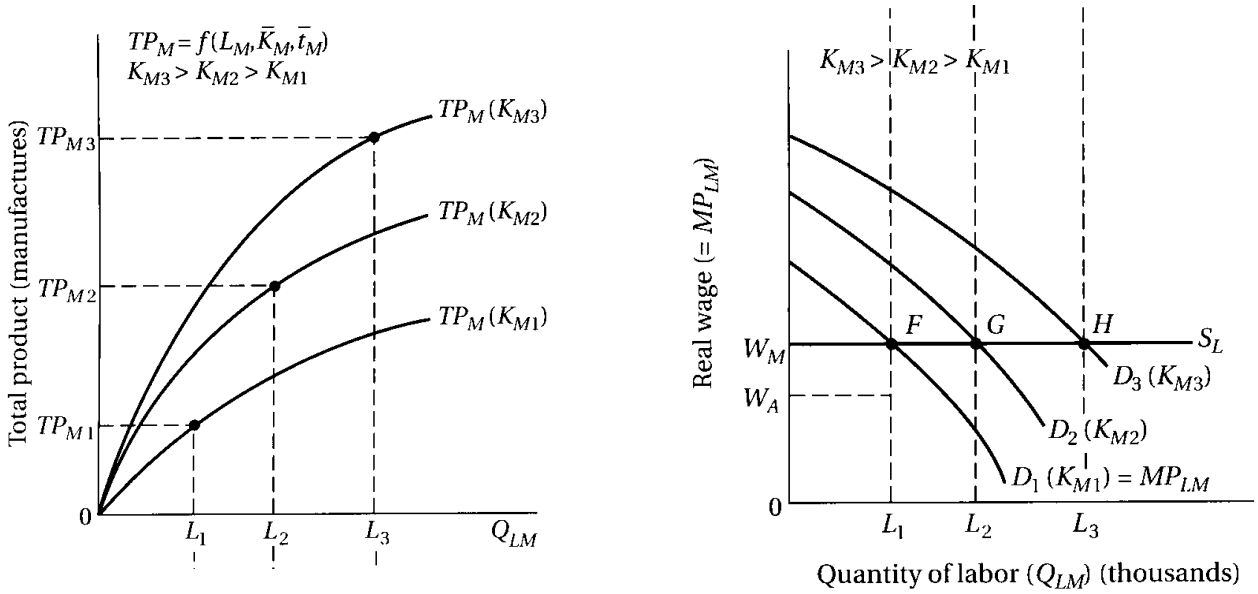
In its basic form, the underdeveloped economy consists of two sectors: a **traditional**, overpopulated majorly rural subsistence sector and **modern**, mostly urban sector with a high-productivity characteristic.

Traditional sector is located in overpopulated rural areas where it is assumed that marginal product of labor is zero and that is why such labor can be withdrawn from the traditional sector without loss of output into highly productive modern sector. The most focus of the model is on the growth of output and employment in the modern sector and as well on the process of labor transfer. These two processes are brought about by an

output expansion in the modern sector. However such expansion depends on the rate of the industrial investment and capital accumulation in the modern sector. Such investment is made possible by the excess of modern-sector profits over wages on the assumption that capitalists reinvest all their profits. Also, it is assumed that the level of wages in the urban industrial sector was constant, determined as a given premium over a fixed average subsistence level of wages in the traditional agricultural sector. Because the wages in modern sector are higher than that in traditional sector, the supply of labor to the modern sector is considered to be perfectly elastic.



Graphically, it looks like above. In the Traditional sector there is excess supply of labor which does not increase output beyond point L_A. Output remains same at TP_A at any excess labor beyond that point.AP_L is equal to wage rate W_A in traditional sector which is indicative of the fact that mostly families share their output after harvest and usually people are engaged in subsistence farming. Therefore $MP_L<W_A$ (Todaro, M. P., 2009, p.117).



In the traditional sector total output TP is defined by the amount of inputs of labor L, capital K and technology. Once marginal product of labor MP_L which is a demand curve for labor crosses with marginal supply of labor S_L, then there will fixed amount of output for given capital input. Over time, this capital input increases when profits are invested into the modern sector. With more investment there is higher total output TP and more employment L.

This process of modern-sector growth and employment expansion is assumed to continue until all surplus rural labor is absorbed in the modern sector. After this point, additional labor transfer from traditional to modern sector will result in loss of output.

The model is not without its criticisms but it roughly reflects the development process of the many now industrially developed countries of the world.

III. Problem of Rural Poverty in Uzbekistan

Poverty in Uzbekistan is not a new phenomenon. During Soviet times it was one of the poorest republics of the Union, with more than 45% of population earning below minimum wage level (Government of Republic of Uzbekistan., 2007, p.40). Similarly, GDP per capita according to Worldbank data was the lowest among all other Soviet Republics. However, the situation has improved drastically over the years with GDP per capita rising almost 100% between 1990 and 2009 (Worldbank Statistics., 2010). Similarly, poverty has also decreased substantially from 31.5% in 2000-01 to 23.6% in 2007 (UN Habitat, 2010).

Country Name/GDP per capita, PPP (current international $)	**1990**	**2009**
Uzbekistan	1,422	2,879
Kyrgyz Republic	1,779	2,287
Armenia	2,085	5,286
Tajikistan	2,176	1,975
Turkmenistan	2,663	7,252
Azerbaijan	3,376	9,652
Georgia	4,036	4,778
Belarus	4,570	12,569
Kazakhstan	5,035	11,526
Ukraine	5,726	6,327
Russian Federation	8,010	18,945

Distinct Features Contributing to Poverty

There are multiple factors which distinguish Uzbek economy in respect to others with perhaps most distinct being that it is one of two double landlocked countries in the world. This lays heavy burden on the economy. For example, it has been estimated that doubling transport costs reduces a country's trade volume by around 80 per cent (UN-

OHRLLS, 2006, 18). For Uzbekistan it has been estimated that the transport cost of one rail wagon of cotton from Uzbekistan to Moscow can reach a whopping US$ 5,000, or 25 per cent of the cargo value (ibid). This is very striking evidence on the way that location has its exogenous effect on the economy. Furthermore, railways play the dominant role in Uzbekistan's international freight traffic, accounting for 86 per cent of all import/export cargo compared to 14 per cent for air and road.

Another feature which makes poverty in Uzbekistan distinct is the fact that almost all households own house and most of them have land plots which provides them with food.

Table 3.2

Family ownership of homes and land plots

Income quintiles	Proportion of families in a quintile that own a home (an individual house or an apartment in an apartment block), %	Proportion of families in a quintile with their own land plots, %
1 quintile	98.2	87.3
5 quintile	97.8	56.2
Place of residence		
Urban	94.9	51.9
Rural	98.3	96.8

Poverty is most acute in families with many children and in 2005 average size of poor families was 6.5, and in non-poor families 4.76 (Government of Republic of Uzbekistan., 2007, p.41).

Regional Distribution of Poverty

In geographical distribution, poverty is most acute in Karakalpakstan with 44% of population living below poverty line in 2005 (Government of Republic of Uzbekistan., 2007, p.41) because it is an area where drying Aral Sea is located. The least poverty is present in Tashkent city which is the capital and had only 6.7% of population living below poverty line.

Geographic distribution of poverty in 2005

Territory / oblast	Poverty rate	Total population	Proportion of disadvantaged population
Total	25.8	100	100
Urban	18.3	35.6	25.3
Rural	30.0	64.4	74.7
Karakalpakstan	44.0	5.1	8.7
Andijan	23.1	9.5	8.5
Bukhara	20.8	6.4	5.1
Jizzakh	29.6	3.7	4.3
Kashkadarya	41.0	8.5	13.5
Navoi	26.3	2.9	3.0
Namangan	33.4	7.9	10.2
Samarkand	23.9	11.2	10.4
Surkhandarya	34.6	7.3	9.8
Syrdarya	32.6	2.4	3.0
Tashkent oblast	20.4	10.1	8.0
Ferghana	15.8	11.6	7.1
Khorezm	31.0	5.1	6.1
Tashkent city	6.7	8.2	2.1

Source: State Statistics Committee

Poverty Comparison with other Countries

When data on poverty of Uzbekistan according to UNDP and CIA estimates are compared with other countries which have similar per capita GDP, it can be seen that there is less poverty present than in countries that are being compared.

Country	Poverty UNDP estimate, 2009	Poverty, CIA estimate, 2009	GDP Per capita, 2009
Kosovo	N/A	**35**	**$2,500**
Pakistan	**32.6**	**24**	**$2,500**
Yemen	**41.8**	**45.2**	**$2,500**
Djibuti	N/A	**42**	**$2,700**
Nicaragua	**45.8**	**48**	**$2,800**
Uzbekistan	**27.2**	**26**	**$2,800**
Vietnam	**28.9**	**12.3**	**$2,900**
West Bank	N/A	**46**	**$2,900**

Furthermore, when data across countries on GDP per capita is regressed on poverty level we have additional perspective on poverty.

CIA 2009				
Regression Analysis				
	r^2	0.293	n	145.000
	r	-0.541	k	1.000
	Std. Error	15.790	Dep. Var.	**Poverty**
Regression output				
variables	*coefficients*	*std. error*	*t (df=143)*	*p-value*
Intercept	39.728	1.739	22.852	0.000
GDP Per capita, CIA	-0.001	0.000	-7.695	0.000
		Predicted	**Actual**	**Gap**
	Uzbekistan	37.42%	26%	11.42%
UNDP 2009				
Regression Analysis				
	r^2	0.326	n	90.000
	r	-0.571	k	1.000
	Std. Error	14.789	Dep. Var.	**Poverty**
Regression output				
variables	*coefficients*	*std. error*	*t (df=88)*	*p-value*
Intercept	47.546	2.319	20.506	0.000
GDP Per capita, CIA	-0.002	0.000	-6.526	0.000
		Predicted	**Actual**	**Gap**
	Uzbekistan	42.18%	27.2%	14.99%

Thus, when data on GDP per capita across different countries is regressed on to poverty level , results are statistically significant. Furthermore, when GDP per capita for Uzbekistan is used to get predicted poverty level, the gap between actual and predicted

level is discovered. The gap is more than 10% which indicates that on average Uzbekistan is doing very well in respect to other countries of the world.

Furthermore, there is a consistency in the gap between predicted and actual level for other time periods as can be seen below.

WB 2000				
Regression Analysis				
	r	0.174	n	47
	r	-0.417	k	1
	Std. Error	15.911	Dep. Var.	**Poverty at national level**
Regression output				
variables	*coefficients*	*std. error*	*t (df=45)*	*p-value*
Intercept	50.7357	3.6051	14.073	4.31E-18
2000, GNI per capita at PPP, current line	-0.0030	0.0010	-3.077	.0035
		Predicted	**Actual**	**Gap**
	Uzbekistan	46.49	31.50%	12.0
CIA 2004				
Regression Analysis				
	r	0.081	n	129
	r	-0.284	k	1
	Std. Error	18.987	Dep. Var.	**Poverty at National level**
Regression output				
variables	*coefficients*	*std. error*	*t (df=127)*	*p-value*
Intercept	42.7783	2.2187	19.281	1.54E-39
GPD per capita	-0.0006	0.00017836	-3.342	.0011

		Predicted	Actual	Gap
	Uzbekistan	41.81	28.00%	13.8

Urban versus Rural Poverty

Rural poverty is dominant with more than 74% of the poor living in rural areas against only 25% in urban areas. This makes rural poverty an interesting topic for discussion which we will be making in this paper.

Table 3.10

Geographic distribution of poverty in 2005

Territory / oblast	Poverty rate	Total population	Proportion of disadvantaged population
Total	25.8	100	100
Urban	18.3	35.6	25.3
Rural	30.0	64.4	74.7

Since, it has been shown that poverty in comparison with other countries of the world is not very high, in contrary even lower in Uzbekistan; we will focus on the problem of rural poverty in this paper. It is the rural poverty which is most serious in Uzbekistan and needs immediate attention.

In Uzbekistan, approximately 64% of the population live in rural areas and about 32% of workforce is employed in agricultural sector (Government of Republic of Uzbekistan., 2007). Currently 70% of the poor live in rural areas (Всемирный Банк, 2003, p.20).

In addition, there is a growing disparity between urban and rural poverty. Whilst urban poverty has declined by 32% between 2000-2007, rural poverty declined only by 6% (UN Habitat, 2010, p.18).

Table 3. Poverty Trends

	2000-01	2002	2003	2004	2005	2006	2007
Total Poverty	31.5	26.5	27.2	26.1	25.8	24.9	23.6
Urban Poverty	27.8	21.8	22.0	18.8	18.3	17.9	17.6
Rural Poverty	33.6	29.4	28.7	30.3	30.0	28.8	27.1

Note: the 2000-01 estimate is from World Bank 2007; 2002-2005 estimates are from the Welfare Improvement Strategy; and 2006-2007 estimates are provisional.

Furthermore, the disparity has overall increased, from being only 5.8% in 2000-01 to 9.5% in 2007. The highest disparity was in year 2005 – 11.7%. This perhaps is indicative of the reforms that the Government is taking to reduce the rural poverty mentioned in Welfare improvement Strategic Paper of the Government for 2008 and 2012.

There are many reasons that have contributed to the disparity and which can possibly shed light on the possible measures that can be taken to address the issue.

First of all, agricultural land which is the basis for income of the rural people has significantly decreased both in absolute and in per capita terms. In the last 15 years, the area of agricultural land decreased by about 5% in absolute terms, and by more than 22% in per capita terms. This was the result of population growth that has resulted in more number of rural area inhabitants. Furthermore, the quality of land has been deteriorating and fell from 58 to 55 grades between 1990-2000 (Government of Republic of Uzbekistan., 2007, p.23).

Furthermore, since independence the Government has been trying to instill private market mechanism to agriculture and create private firms that run the land instead of government owned *shirkat farms*. These private farms employ on average quarter of people employed by *shirkat farms,* i.e. private firms employ one fourth of labor in comparison with government firms which further leads to unemployment in rural area.

Another reason why rural poverty is more acute than urban poverty is the increasing productivity in rural areas which means that capital intensive means of agricultural production lead to land being worked by machinery and thus replacing human labor (Poverty and inequality in Uzbekistan., 2006).

In addition, in a UNDP supported research that was undertaken in six districts of Namangan region it was found that poverty was correlated with family ownership of land. Rising population has meant that there is less land per family that could provide them with food. (UN Habitat, 2010, p.19).

Rural poverty is more serious than urban poverty perhaps partly because workers in agriculture receive less than half of the average for the country (Всемирный Банк, 2003, p.20). This increases chances of being poor as is supported by the observation that in poor families 48.7% of family heads were employed in agriculture whilst in non-poor families only 29.6% were employed in agriculture (Government of Republic of Uzbekistan., 2007, p.44)

Finally, rural area families tend to have 4,5 children which is more than national average and therefore more likely to become poor (Government of Republic of Uzbekistan., 2007, p.41).

IV. Policy Recommendations

To combat rural poverty, for Uzbekistan it is necessary to increase investment into the modern sector while salaries remain constant in both sectors. As was outlined in theoretical part increasing investment into modern sector will overtime lead to the increase in the total output and overall employment. This is a favorable outcome that can be reached under certain conditions.

There are a number of areas that need to be considered in parallel to the industrialization path that has been on the way in compliance with Lewis' two sector model.

Investment in industry and service

To keep economy growing and to follow Lewis' development model, extra profits in modern sector, i.e. industry and service should be reinvested in capital to increase productivity and induce higher levels of output and employment.

Currently investments have been rising on average by 6% annually and currently constitute around 33.9% of GDP. In the country, almost majority of the investment is made by the Government, either directly or indirectly, and at the same time, most investment is made into strategically important basic industries. It is necessary for the Government to keep on its track of directing investments into economy's important industries to increase overall capital stock.

Population growth control

Population of Uzbekistan has been increasing at around 1.6% per annum and was 1.6% in 2008 which is slightly higher than the moderate rate (Worldbank Statistics, 2010).

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Population growth (annual %)	2.4	2.4	2.1	2.3	2.3	2.0	1.8	1.9	1.9	1.6
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	1.4	1.0	1.3	1.2	1.2	1.2	1.2	1.2	1.4	1.6

In this regard it is important to keep investments into capital goods rate higher than the annual percentage increase in population, otherwise increased output will not be sufficient to generate employment in modern sector to eventually absorb all the excess labor from rural sector. This will not make the goal of decreasing poverty in rural area an achievable goal and poverty overall will not decline.

Although at the moment the rate of investment is 7% and population growth is 1.6%, the Government could institute population growth control measures in the future. As we shall see in one of the next policy recommendations, increase in capital could not necessarily lead to higher employment creation, the new technology acquired could be labour saving. That is why it is important to control population growth.

Land quality

Land quality has deteriorated over the last years as was mentioned and dropped from 58 to 55 grades between 1990-2000 (Government of Republic of Uzbekistan, 2007, p.23). It is also due to the fact that the region's biggest lake which was second biggest in the world when compared in territory it occupied has slowly but firmly been drying up releasing tons of minerals such as salt to be carried by wind. This process has been

ongoing for the last 20 years, and therefore has made much influence to the deterioration of the soil and loss of output thereof.

In this regard it is important to increase quality of land and total arable agricultural land to have ability to cultivate enough food to feed the population. Otherwise, the country will reach point where it will have to import basic food to keep population and will have to turn from net exporter of food and agricultural products to net importer. This lays extra burden on the country's trade balance and will make import of capital goods difficult in terms of allocating hard currency.

Land size

Arable land as percentage of total land has decreased from 10.5% of total land of the country 20 years ago to 10.1% in 2010. While decrease is only minor, the population has increased by 35% during this period.

This is a very drastic change if we take into account that overall quality has also dropped and that currently one agricultural worker feeds only 12 persons while in developed countries it is 6-7 times higher. The last fact could also be due to low capital accumulation in agriculture as compared with developed countries.

To conclude, agricultural land per person is decreasing and this is a barrier towards sustainable economic growth. Although theoretically modern sector could absorb all the surplus workers in agriculture, however this can happen only to the extent that the food grown is enough for all the population. In this regard, it is imperative for the Government to instill birth control mechanism and account for population growth.

Land ownership and distribution

Currently land remains owned by the Government and there is no private land in practice. Farmers rent the land and use it to grow crops.

Building is treated differently from land and in contrast to land can be sold and inherited. Those people that have buildings in form of house can classify their building as an asset and therefore can be treated as possessing some form of wealth.

In contrast, land is not distributed or privately owned by the people. In this regard, one of the ways that the Government could use to reduce poverty is to distribute land to the poor layers of the society so that they will have a form of asset that can be sold to start business or lent at a price. This is an unused opportunity that the Government can use to handle poverty issue.

Labor saving technology and Labor intensive technology

In case if the extra profits in modern sector are invested into labor saving technology, the rate of transfer of traditional sector workers from rural area to modern sector in urban areas will not be the same or even lower than the rate of capital accumulation. Faster capital accumulation will not necessarily lead to faster job creation in the modern sector thereby not helping the problem of rural poverty.

Furthermore if the extra profits in modern sector are not reinvested and are simply deposited in foreign bank accounts of companies as in the case of “capital flight”, then the growth in modern sector will not be self reinforcing (Todaro, M. P. , 2009, p120).

In this regard, current investments of the Government targeted at basic and major industries of the republic may not induce proportionate increase in employment. Most of the investments are targeted into automobile, oil and gas, production modernization. These are all labor saving technologies which intend to replace people by machines.

Therefore, for the government it is imperative to consider possibility of using labor intensive technology, which will not replace people, rather will enhance their productivity and involve people. For example, diamond processing is a labor intensive job, and by giving people necessary equipment, diamond processing companies can be created and more employment generated.

Rural wage changes

In the Lewis model, rural wages are average product of labor and not marginal product of labor as we had explained in the theoretical part of the work. In this regard, rural wage is determined by the total product of labor and number of people employed.

In the context of Uzbekistan, total production of agriculture is determined exogenously and is considered fixed since total agricultural land and arable land is fixed. Therefore, the number of employees in agriculture determine the agricultural wage.

In this regard, if rural wages increase in Uzbekistan it could be regarded as a sign of people transferring from rural sector to urban sector. On the contrary, if rural wages decline, then without similar decline in arable land and crop yield, this will signal an increase in agricultural employees thereby implying no transfer or backward transfer of employees from urban to rural area. This is a negative sign and in such cases the

Government should try to reevaluate its investment policy and try to aim to create more jobs.

V. Conclusion

Uzbekistan is a country which has potential in increasing its industrial output. There is not much high poverty in comparison with the rest of the world countries with similar GDP per capita bracket. However, there is a problem of rural poverty whose proportion has increased rather than decreased when compared with urban poverty. In this regard there is a high need to address the issue. There is a need therefore to increase investment in modern sector to increase total output and thereby inducing more labor transfer from traditional sector where they have zero marginal product of labor, to modern sector where there will be positive marginal productivity of labor. This according to Lewis dual sector economy model specified will result in self reinforcing growth that will eventually lead to increased output and transfer of labor from traditional to modern sector.

Uzbekistan has already been pursuing the goal of industrialization and the total output has been steadily increasing. The wage rate in traditional sector which is agriculture has decline in comparison with the national average which is in line with the dual sector model.

However, to keep industrial investment and output growth to be resulting in self reinforcing growth and eventually to decrease rural poverty and poverty in general, there needs to be increase in investment rate far higher than that of the rate of increase in population. Population growth has been steadily increasing thereby the investment increase rate should be higher.

Furthermore, there is an issue of deteriorating land quality and total agricultural land. With decreasing agricultural land there is less output per worker and with increasing population there is more need for food. If the process of land deterioration and decreasing land does not reverse, there will be problem of food shortage and necessity of food import.

Finally, if investment is made into labor saving technology, there might not be enough job creation in modern sector to induce labor transfer from traditional sector. The rate of investment and the rate of job creation will not be the same, increase in rate of investment will not increase the rate of labor transfer. This is a serious concern taking into account the latest technologies which have been more labor saving oriented rather than labor utilizing.

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