

# Know an Economist

### The Critique: Robert E Lucas, Jr. (1937-)



"His brilliance and versatility as an economic theorist cannot be disputed. Much value will come from the impetus given to the study of macroeconomic theory and policy by endeavors' of Professor Lucas." -Kyklos

Robert Lucas is considered to be the most influential macroeconomist of the last quarter of the twentieth century. Robert Lucas is the frontline proponent of neo-classical school. His major contribution has been to redefine the macroeconomics by incorporating econometric forecasting models. His seminal work in 1976 known as 'Lucas' Critique' challenged the very foundation of Keynesian economics-demand side management of the economy through macroeconomic policies. Policy implication of the short run Philips curve that gave the policy makers a tool to address inflation or unemployment by constantly 'fooling' people. He argued that people cannot be 'fooled' by the government as they change their expectations as soon as the government makes a policy shift. He used the framework of rational expectations to explain why the policy failure occurs. Use of rational expectations in the macroeconomic modeling also helped the economist like Milton Friedman and Edmond Phelps to give analytical tooth to their finding on vertical or long run Philips curve, neutrality of money and natural rate hypothesis. So profound was the work of Robert Lucas that it provided foundation for the Nobel Prize winning work of Finn Kydland and Edward Prescott on the time consistency of macroeconomic policies.

Lucas also contributed to refine the business cycle theory. His resolved the long standing contradiction of the need to integrate the cyclical phenomenon into a system of general equilibrium along with the trade theory. He used neo-classical assumption of optimizing behavior and his rational expectations hypothesis to resolve the issue. Lucas also integrated neo-classical growth theory and international trade theory with the feature of economic development and highlighted the importance of physical capital formation, technological change and accumulation of human capital.

Born in 1937 in USA, initially a student of history, Robert E. Lucas completed his Ph.D. in Economics in 1964 and worked at Carnegie Institute of Technology and University of Chicago. He has authored some of the finest works in macroeconomics-'Expectations and Neutrality of Money', **Policy** Evaluation: 'Econometric A Critique' 'Studies in Business Cycle Theories', 'Models of Business Cycles', 'On the Mechanics of Economic Development' and 'Supply Side Economics: An Analytical **Review**'. For his outstanding contributions to macroeconomics through the creation of rational expectation framework, Lucas was awarded Nobel Prize in Economics in 1995. Incidentally, Lucas' wife divorced him in 1994 and got half of the prize money. To this economists joked that his wife had rational expectations.

#### -Sanjeev Mehta,

#### **Professor of Economics**



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## RATIONAL EXPECTATIONS ECONOMICS SOCIETY MONTHLY REVIEW

# Development Process and the Issues of Labor shortages in Agriculture Sector

### in Bhutan in the light of Lewis Model

-Kuenzang Dorji

The development process in Bhutan started very recently with serious and organized developmental activities initiated only in 1960s. Prior to that Bhutan remained what W.W Rostow termed as a '*traditional economy*'. The government played an activist interventionist approach in achieving its economic development. This planned economic development strategy emerged very successful with tremendous improvement both for the economy and for the people. Bhutan today has a per capita income of about USD 2,611 and the economy grows at about 6.5% annually (National Statistics Bureau, 2014). It has brought about significant achievement in all economic spheres. There are however number of issues concerning the country and *labor shortage in agriculture sector* is one. This issue can be explained with the help of Lewis model put forward by Sir W. Arthur Lewis.

The Lewis model is known by other names as *structural change model or the dual sector model and the surplus labor model.* The model explains how the economy moves from rural agriculture subsistence economy to a modern urban industrial economy (Fields, 2004). The agricultural sector is assumed to be characterized by low productivity, lower incomes, low savings and extensive underemployment. The sector is also assumed to be subsistence in nature. On the other hand, the industrial sector is assumed to be technologically advanced with high levels of investment operating in an urban environment. The income of the people are high and the other economic incentives are also better.

The model makes the assumptions that there should be existence of disguised unemployment in agriculture sector and that there is surplus of unproductive labor in the sector. According to Downes (2004), these labors migrate towards industrial sectors owing to better incentives and assumes the wage to be 30% higher. The investors and entrepreneurs are assumed to reinvest their profits and increase the firm's productive capacity. This in turn demands a greater amount of labor.

Most economies have dual economy. The case is same with that of Bhutan and thus faces the issues of people migrating from agriculture sector to industrial sector. The migration from agrarian society to industrial sectors has contributed significantly to the redistribution of population (Ura,2005). The urban centers in Thimphu, Paro and Phuntsholing continues to receive significant number of migrants from the eastern and central region. One of the ten principles of economics is *people respond to incentives*. The migrants move in search for better livelihood. They are mostly paid higher in urban areas than in rural areas. It is projected that the population will increase by about 135%, from 196,111 in 2005 to about 461,071 in 2020 with the growth rate of 1.28 percent annually in urban areas (Bhutan National Urbanization Strategy, MoWHS 2008).

With people moving out to industrial sectors, this has aggravated the growth of agriculture sector in the country. The productivity growth of agriculture products has been declining at the rate of 1.8% annually (Mehta, 2012). This means Bhutanese agriculture sector is becoming less efficient. Another issue with people moving out to industrial sector contributes to fall in investments in agriculture sector.

With no laborers in farm, both the private and public investments are declining. According to Mehta (2012), the share of agriculture in the Five Year Plan spending declined from 22.5% in Fifth FYP to 9/8% in tenth FYP. As in the case of private investments, the allocation of lending to agriculture sectors by financial institutions has declined from 6% in 1986 to 1.4% in 2009 (Mehta, 2012).

The challenge for economic growth for any country comes from sectoral composition of growth. With people moving out to industrial sector is further going to worsen the economic growth in Bhutan. It will put pressure on the resources in the urban areas causing resource inequality. There will be rising unemployment, income inequality and other social issues which deteriorate the economy of the country. At the same time, lack of laborers in rural areas would lead to reduction in agricultural output enhancing dependence on import for food products. This will seriously affect trade balance. Many are of the view that this issue is inevitable and does not have any solutions. The question however is why anyone would migrate to urban centers. This can be explained with the help of following model.



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The side graph explains tural economy. TP represents Total Product and MPPL represents Marginal Physical Product of Labor i.e., the total output from an additional labor. TP keeps on increasing and reaches optimum level where MPPL also rise and then declines. It suddenly reaches zero. When MPPL becomes negative, Total product starts to decline from its optimum level. According to Lewis, land is fixed and the increase in labor in the farm has no impact on the total output. This is because the marginal product of the additional farmer is assumed to be less than or equal to zero due to law of diminishing returns. Total product will decline after MPPL becomes negative.

The surplus labor in agriculture sector are considered disguised unemployment. The Total Product

determines the wages for the labor. Since there is existence of disguised unemployment, wages are very low as it is determined *vis-a*-*vis* total product. Since the wages are low, the surplus labor will move out to industrial sector where wages are high. However, Lewis assumes that this will not hamper the productivity in agriculture sector. People leaving agriculture sector would have virtually no impact on output (Rahman, 2010). He assumes that only the disguised unemployed labors will move out.



Since the industrial sector provides wages higher than the agriculture sector, the surplus labor will move out to industrial sector. The above graph shows the amount of wage paid to the laborers (horizontal line) and their marginal physical product. According to Fields (2004), there will be a unique quantity of labor delivered given the price of the labor. Lewis assumed that wages in industrial sector are at least 30% higher. The abundant labor supply motivates the producers to produce more. The price for their product is higher than the wage for the workers. This makes their profit margin huge. Lewis suggests that the huge profit is saved and reinvested. The industries will then demand more laborers.

Now that the industrial sector has expanded, more labors are hired. In the industrial sector, labor are hired up to the point where its marginal product equals wage. If the labors are paid more, the surplus revenue would decline. The above graph shows the situation in which the investment increases and more labor is hired. However, the wage remains same for the laborers. Their Marginal Physical Product increases. Surplus labor would eventually be exhausted. When all the surplus labor in the agriculture has been attracted to the industrial sector, wages in the agriculture sector will begin to rise shifting the terms of trade in favor of agriculture. This is where turning point (point K) is created. At turning point, wages will start to rise. If the industries are to hire more labor, they have to pay higher wages. At this point, real wages will increase along with increase in productivity and the economy will enter into a stage of self-sustaining growth.

The Lewis model can thus explain the growing number of internal migration in Bhutan. The subsistence agriculture sector is assumed to be rural and the industrial sector to be urban areas. According to Lewis, more people will move to urban areas in search for jobs that would mean higher wages. The employment of these people will increase especially in industries. The producers profit margin will increase and they are forced to pay their employees higher wage. This will continue to draw higher number



of labor from the agriculture sector until it reaches a stage of self-sustaining growth. The agriculture sector will also see improvement after all the disguised labor move out to urban centers. This will increase both productivity as well as the wages. Thus labors in agriculture sector in Bhutan will see increase in productivity as well as increase in income. At this stage of development in Bhutan, the economy is in the process of absorbing the disguised labor from the agriculture sector towards industrial sector. Conversely the applicability of the theory has to be questioned based on the optimum supply of labor towards industrial sector given the low population. At the current migration rate, Bhutan would see influx of labor in industrial sectors and most of the rural areas will be empty. The risk with the country in

distribution of labor is that all the economically active people might move out into the urban areas putting strain on the resources and leaving the arable lands fallow back in the village. In order not to be dependent on imports for food and to be food self-sufficient, it is fully up to the government to reverse the current trend.



solution to this situation.

The reason as to why people move out into the urban areas is owing to the higher wages. Now this can be solved through *provision of subsidies* on agriculture products. According to Mondal (2015), India provides agriculture subsidy to enhance the income of the employees in agriculture sector. This would mean that subsidies can help solve the issues in Bhutan as well. Subsidies enhances growth in income of the laborers in agriculture sector and halt the movement of labor towards industrial sector. United States spends \$10 billion to \$30 billion in cash on subsidies as it acts as an economic stabilizer bringing higher employment in agriculture sector and stronger trade balance (Edwards, 2009).



As suggested by the graph above, **'S'** represents supply of labor and **'D'** represents demand for labor. When government provides subsidies on agricultural sector, farming becomes lucrative. People will look for workers in farms and the demand for labor in farm increases which is represented by shift in demand curve from D to D2. The wage for laborers in agriculture sector increase as well (W1 to W2). More laborers will look towards working in the agriculture sector. This would significantly reduce the migration of economically active citizens towards urban center which in turn help country reduce migration of people towards urban centre, achieve food self- sufficiency and improve trade balance.

An improvement in agriculture sector would mean reduced movement of potential workers towards urban centers. Agriculture sector in Bhutan can however be improved if *government promotes local agricultural products.* This can be done through ban on import of agriculture products or increased public investments in agriculture sector compared to current spending. This would mean increase in supply of domestic agricultural products. As shown in the graph above, promotion of agriculture products would shift the Aggregate supply curve from AS to AS2. Quantity of agro products will increase (Q1 to Q2) which would require larger workers in the field. This way, the laborers will be employed into the farming and it would finally reduce the migration of people from rural areas to urban centers which otherwise would increase pressure on urban resources and crisis in agriculture sector.

Policy makers argue that rural urban migration is short term phenomenon as the migration will stop when the demand for labor by industrialists meets its supply. Then the economy will see growth in agriculture sector as increase in income would mean higher productivity. Lewis model can be applied up to this point and explain the phenomenon. Nonetheless the unique population distribution in Bhutan would mean the questioning of the applicability of the model. The best solution at this point of time would be the government intervention in addressing the issue.

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Phillips Curve

~ Compiled by Pema Lhamo & Pelden Choiden BA Eco Evs, 3<sup>rd</sup> semester 2<sup>nd</sup> yr.

The Phillips curve shows the relationship between unemployment and inflation in an economy. Since its 'discovery' by British economist AW Phillips, it has become an essential tool to analyze macro-economic policy.

#### Background

After 1945, fiscal demand management became the general tool for managing the trade cycle. The consensus was that policy makers should stimulate aggregate demand (AD) when faced with recession and **unemployment**, and constrain it when experiencing **inflation**. It was also generally believed that economies faced *either* inflation or unemployment, but not together - and whichever existed would dictate which macro-economic policy objective to pursue at any given time. In addition, the accepted wisdom was that it was possible to target one objective, without having a negative effect on the other. However, following publication of Phillips' research in 1958, both of these assumptions were called into question.

Phillips analyzed annual *wage inflation* and *unemployment* rates in the UK for the period 1860 – 1957, and then plotted them on a scatter diagram. The data appeared to demonstrate an *inverse* and *stable* relationship between wage inflation and unemployment. Later economists substituted *price inflation* for *wage inflation* and the Phillips curve was born. When economists from other countries undertook similar research, they also found very similar curves for their own economies.

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### Explaining the Phillips curve

The curve suggested that changes in the level of unemployment have a direct and predictable effect on the level of price inflation. The accepted explanation during the 1960's was that a fiscal stimulus, and increase in AD, would trigger the following sequence of responses:

1-An increase in the demand for labor as government spending generates growth.

2-The pool of unemployed will fall.

3-Firms must compete for fewer workers by raising nominal wages.

4-Workers have greater bargaining power to seek out increases in nominal wages.

5-Wage costs will rise.

6-Faced with rising wage costs, firms pass on these cost increases in higher prices.

#### The *breakdown* of the Phillips curve

By the mid 1970s, it appeared that the Phillips Curve trade off no longer existed there no longer seemed a stable pattern. The stable relationship between unemployment and inflation appeared to have broken down. It was possible to have a number of inflation rates for any given unemployment rate.

American economists Friedman and Phelps offered one explanation - namely that there is not one Phillips curve, but a series of *short run Phillips Curves* and a *long run Phillips Curve*, which exists at the *natural rate of unemployment* (NRU). Indeed, in the long-run, there is no trade-off between unemployment and inflation.

#### NAIRU

NAIRU, which exists at the Long Run Phillips Curve, is the rate of unemployment at which inflation will stabilize - in other words, at this rate of unemployment, prices will rise at the *same rate* each year.





n September 2, 2016 REES organized its first coffee table discussion. Main motive behind this initiative is to promote a culture of informed debate amongst the students of Economics. It was an impromptu discussion that lasted for an hour. Though a limited number of students attended, it was an extremely interesting and enriching meet. We plan to hold such discussions twice a month and expect larger participation in the following sessions.

Self-interest is a basic assumption of economic models that each agent act to maximize its own interest, often termed as rational behavior. The role of self-interest while making economic decisions has been an issue of debate. On one hand self-interest motivates economic activity, creates competition and facilitates efficient choices, while on the other hand it raises deeper philosophical issue that it is devoid of important human values such as sympathy and philanthropy.

Some economists, like Adam Smith, believed that the economy can benefit only when individuals work for their own self-interest. He explains this concept through the analogy of '*invisible hand*'. He explained that how actions motivated with self-interest benefit the society more than actions directly intending to benefit the society. It is of interest to note that Adam Smith wrote famous '*An Inquiry into the Causes of Wealth of Nations*' and '*The Theory of Moral Sentiments*. The former takes up the cause of self-interest and the latter highlights moral values.

Here are the major points from the discussion

It started with the point similar to what Adam Smith believed- self-interest is crucial for the benefit of the individual as well as the society. Any rational human being is driven by self-interest. It was also explained how one's self-interest can benefit others. Here is an example that was cited: *"We go to the shop to buy soap. The shopkeeper's self-interest is in selling the soap and getting profit. Our interest is in buying the soap, which is good, and the shopkeeper is friendly so we happily pay the price".* This is the miracle of market system – self-interest creates behavior that benefits others.

Then, a very interesting point was raised and discussed that how bargaining takes place when self-interests clash. Foreign Direct Investment (FDI) illustrates the clash of self-interests between the host and investor country. The host country has benefits from FDI such as increase in employment, GDP, technological spillover and increased foreign exchange inflow. The investor country benefits by using the host country's resources, labor and market for the produced goods. When these self-interests clash, bargaining takes place and there is FDI.

One of the discussants linked religion and moral values with self-interest and decision making. This brewed up an interesting fact: Religion and moral values are helpful in keeping a check on people's self-interest. And the legal boundaries and government also play the same role. Corruption is a phenomenon that is omnipresent. The reason why corruption has grown is because of self-interest that has no boundaries.

The role of self interest in promoting human excellence through motivation and innovations was also highlighted.

Another discussant spiced up the debate by bringing in the topic of charity. Charity is cited as an example of philanthropy where human action are driven by the desire to benefit others. Yet, firms and individuals make charity to save them from paying tax. It also helps them advertise, gain popularity and have a good name in the society, which brings back self-interest to the central stage. It was also conveyed that charity is also reflective of the guilt of making money by exploiting others. It was asserted that charity is not necessarily philanthropy.

Karl Marx entered the discussion. His work emphasized that how an unregulated profit orientation leads to inequality and later to socialistic revolution. In a socialistic system, social welfare replaces self-interest. It was also pointed out that due to the Marxist impact, the governments assumed the role of welfare states. Finally, we agreed that individuals should only focus on self-interest and the government should take care of general welfare.

People with self-interest are often viewed as immoral which is concerning. When actions are governed by self-interest one often faces a moral dilemma and is subjected to societal pressure. We must know that self-interest is the only factor that motivates everyone to work and all of us are mostly driven by self-interest.

Until we don't cross the legal boundaries, our pursuit for self-interest is justified. While writing this article, my self-interest is to get appreciation for this work. I don't think I am thinking wrong, I am also a rational human being.

~Rishabh Mehta, BA in Development Economics, Semester 1



# **On Amartya Sen's Capability Approach**

#### ~ Moritz Bleif, BA in Development Economics, 5th Semester

*"Helping people so they can pursue opportunities"* (UNDP, 2015) is only one of the sentences that stresses how important it is, to enhance people's opportunities. Since the beginning of the industrialization, development has shifted from a GDP and growth focused approach to a more wholesome development paradigm. The economist and philosopher Amartya Sen created the *"capability approach"*. The basic idea of it is that to measure welfare, the capabilities that an individual has should be maximized. If a person has only one option, to become a carpenter, for example, her/his capabilities are low. If she/he can choose between that, becoming a firefighter or a teacher, there are more capabilities thus more welfare.

This approach is shining because of two reasons: GDP/growth focused development has many problems. Peet and Hartwick describe that Development that is only focused on this tends to be morally bad and is more unlikely to lead to unwanted consequences like environmental degradation (Peet and Hartwick, 2009). The capability approach solves the issue of GDP focused development and takes many different spheres into account. Sen himself says that his approach is about *"quality of life"* (Sen, 2003: 54) which is much more than just economic growth. Economic Growth is, however, a very important factor in the quality of life. Sen's idea takes that into account and ensures other spheres are evaluated as well. The central problem of Sen's approach is that it does not offer any specific policies how to implement it. It remains a critique of mainstream development but lacks application advice. Martha Nussbaum steps in here and offers application (Nussbaum 2011).

Summarized one can say that the Capability Approach is a very humanitarian, value based development philosophy that takes into account economic growth and many other areas which are important for human life. If offers profound and justified critique but lacks in practicality. Luckily, there are other authors who supplement this.

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#### Events for REES—Fall 2016-17

1.Coffee Table discussion (every Friday) 2.Visual 1st round winners :Tshering Buthri

**Kinley Zangmo** 

#### Karma Yangki

- 3. Monthly Lunch
- 4. Budding Economist of RTC
  - -Written test and panel discussion ( will be held next semester)
- 5. Eco- Festival
- 6. Academics guidance by Senior classes
- 7. Guest lecture



# **Crosswords: Economic terms**

#### Across

- 2. relationship between unemployment and inflation.
- 5. Percentage loss of GDP over percentage reduction in inflation is a formula of .
- 6. Pollution is an example of .
- 8. Any value owned by individual, institution or any by any agent.
- 9. Value of one currency for the purpose of conversion to another.
- 10. Condition that results from a society not having enough resources to produce.
- 12. Measure of the amount of output produced by a given inputs over specific period of times.
- 13. Measure of the ease by which financial asset can be converted to cash easily.

#### Down

- 1. the loss of other alternative when one alternative is chosen .
- 3. The number of times a given quantity of money changes hands in a given period of time.
- 4. Economic situation where economy face high rate of inflation with high rate of unemployment.
- 7. Decline in the aggregate price level over defined period of time.
- 11. When different market join together and form a group is known as.



Complied by Purna Maya Gurung

#### Answers of last month

#### Down:

- 1. Market
- 2. Profit
- 3. Firms
- 5. consumer sovereignty
- 8. Equilibrium
- 14.Incentives
- 15.Barter
- 16.Household
- 17.Demand
- 20.Supply

#### Across

- 4. Factors of production
- 6. Specialization
- 7. medium of exchange
- 9. Product market
- 10.Competition
- 11. Self interest
- 12. Price
- 13. Invisible hand
- 18. Law of Demand
- 19. Law of supply