

**University of Tokyo
Graduate School of Public Policy**

**Project Title:
“Establishment of URS Campus in Jalajala, Rizal,
Philippines”**

**Economic Analysis of Public Policy
Yoishitsugu Kanemoto**

**Alamo, Leah
Azzani, Meikha
Veloso Camelo Pacheco, Jose Dinis
Oyunsuren, Enkhchimeg**

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EXECUTIVE SUMMARY

As a developing country, Philippine has undergone major improvement on its economic performance by improving its education system and attainment. Its rank in Human Development Index in 2013 is 102. There is significant improvement of Philippine scores in HDI components, especially in education. Philippine has focused to improve its education system since “a deep regard” for education (DepEd 2008). Despite its improvement in education in country level, there is significant decline of education standard in several provinces such as in Rizal. In Rizal province, HDI decreased for 16.4% (HDN, 2013) because the score for education and income indexes decreased for 2.8% and 31% consecutively in 2013

Focusing to municipality level, Jalajala as a part of Rizal province, encounters major issue in education due to lack of affordable higher education institution. Every year 70% of the high school graduates from Jalajala do not strive for higher education due to high cost. Many of whom also do not have access to receive short term vocational education training, which should assist them to be employed in the long-run. As a result, 33 percent of the current workforce in Jalajala (TESDA, 2011) receive the salary of minimum wage as they have high school degree and do not fully utilize their potential to earn more.

With the intention to promote literacy and education in the area, the Jalajala municipality is introducing the development of the URS-LGU Jalajala skills training program. The initiative provides youth, especially fresh high school graduates who struggle with the rising education costs, with the opportunity to attend quality-driven and knowledge-rich college programs. The higher education includes four years undergraduate program on five majors.

In order to forecast the impact of this program on the municipality and on the society as a whole, the study will comprise a projection period of 8 years and construct quantitative/ qualitative analysis on how much benefit this fully- government funded project can provide. The analysis comprises the effect from the establishment of URS-LGU Jalajala in both primary and secondary markets. To analyze whether the project is viable or not, the study incorporates Cost and Benefit Analysis (CBA) method. The alternative of the establishment of URS-LGU Jalajala is no

education or no new campus in Jalajala. Conclusion on whether the project will be continued or not will be dependent from the result of CBA.

Primary market in this study is assumed to be “first best economy” with negligible price distortion. Tuition and other school fees or the price approximate the marginal cost, thereby supply curve is horizontal. As usually the case, demand curve is downward sloping. However, due to data limitation and for conservatism, the analysis did not account for the resulting increase in consumer surplus in the primary market.

The result of CBA calculation shows that taking into consideration the 15% social discount rate, the Net Present Value (NPV) and Benefit-Cost Ratio (BCR) can be derived for this project. The present value of total benefits is P234,401,148 and the present value of total costs is P166,273,294. Therefore, the NPV is 68,127,854 and the CBR is 1.41. Based on both NPV and BCR, it can be inferred that the benefits of the project greatly outweigh the costs.

As for secondary market, the analysis is based on labor market forecast model suggests that by increasing supply, the average wage of university graduates will change; however, the wage would not necessarily decrease as assumed. The change of wage is different across occupation/sector specific. For technician/IT, by adding 49 graduates to the Rizal labor market increase the average wage of university students by 1%. However, work accession rate and separation rate are close. In other words, the possibility of getting hired is as same as getting fired. International labor migration is decreasing over the years. In service sector, adding 99 graduates to the Rizal labor market increase the average wage of university students by 0.6%. Work accession rate is higher than work separation rate. The labor demand market is increasing. Getting hired is easier than being fired. However, international labor migration is considered to be remaining still high. Lastly in business sector, adding 49 graduates to the Rizal labor market decrease the average wage of university students by 0.1%. Work accession rate is higher than work separation rate. The labor demand market is increasing. Getting hired is easier than being fired. International labor migration is decreasing over the years.

1. INTRODUCTION

1.1. Project Background

Jalajala is a fourth class municipality situated on the southern part of Rizal, covering waterfront area to the largest freshwater lake, Laguna de Bay. Located 75km from the country capital, the municipality is a home to 28,728 residents. Although agriculture, especially fish pen operating is the main economic activity of Jalajala, opportunity from neighboring big metropolitan cities and big towns of Rizal make it easier for people to find employment on other sectors.

According to Rizal local government, education attainment has become an issue of Jalajala due to lack of affordable higher education institution. Every year 70% of the high school graduates from Jalajala do not strive for higher education due to high cost. Many of whom also do not have access to receive short term vocational education training, which should assist them to be employed in the long-run. As a result, 33 percent of the current workforce in Jalajala (TESDA, 2011) receive the salary of minimum wage as they have high school degree and do not fully utilize their potential to earn more.

1.2. Project Purposes

With the intention to promote literacy and education in the area, the Jalajala municipality is introducing government- subsidized URS-LGU Jalajala skills training program. The initiative provides youth, especially fresh high school graduates who struggle with the rising education costs, with the opportunity to attend quality-driven and knowledge-rich college. Students who are attending can pay mere minimum to earn the undergraduate education. This being said, the program's goal is to nurture students with sets of skills, enabling their capacity to contribute for the continuous thrive of the local economy through provision of low cost higher education. The higher education includes four years undergraduate program on five majors, namely Business, Technician/ IT, Social science and Teaching. The project has the capacity to prepare around 200 graduates each from from the abovementioned classes.

1.3. Research Questions

In order to forecast the impact of this program on the municipality and on the society as a whole, the study will comprise a projection period of 8 years and construct quantitative/ qualitative analysis on how much benefit this government funded project can provide. The analysis

comprises the effect from the establishment of URS-LGU Jalajala in both primary and secondary markets.

To analyze whether the project is viable or not, the study incorporates Cost and Benefit Analysis (CBA) method. The alternative of the establishment of URS-LGU Jalajala is no education or no new campus in Jalajala. Conclusion on whether the project will be continued or not will be fully from the result of CBA. As for the study of secondary market, labor- market forecasting model was used to understand 1) supply- side analysis, 2) demand- side analysis and 3) labor migration flow.

2. LITERATURES REVIEW AND THEORETICAL FRAMEWORK

2.1. Literatures Review

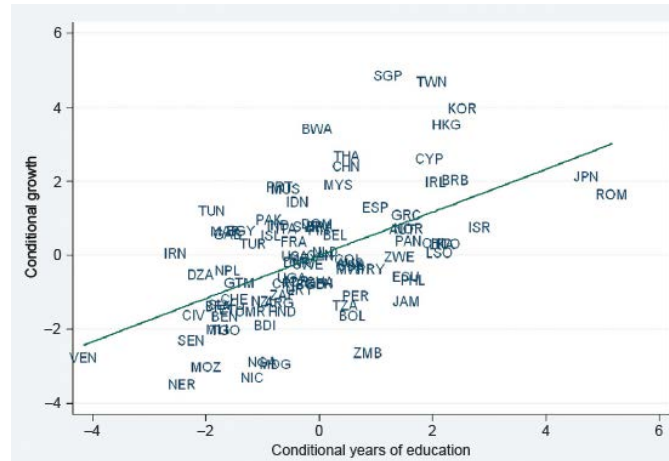
High economic growth is a major goal of economic activity in every country. From recent economic growth theory, human capital is one of determinants of economic growth. Good human capital allows a country to have higher productivity of output level which in turn high economic growth. Therefore, spending in education policy becomes a concern in every country.

Education has been viewed as investment. Giving good education will raise not only wellbeing of the people but also beneficial for an economy. Theoretically, education may affect economic growth from three channels. First is from labor force productivity. Education improves the quality and productivity of human capital which enable to economy to move to higher level of output. Second, education promotes innovation, new technology and knowledge that boost economic growth. Lastly, education is also believed to be able to serve as transmitter and catalisator to comprehend and implement new technology and information which eventually boost economic growth.

Hanushek (2010) finds the association of education and economic growth by simply plotting years of education and economic growth. Figure 1 shows association between years of education and economic growth. Representation of the association is that years of education are associated with long-run growth that is 0.58 percentage points higher. However, each country has different system and even quality of education. Putting solely the measurement of education in years of education is arguably. Therefore, considering the impact of quality of education is necessary. Study from Barro (2001) confirms the impact of the quality of education to economic growth.

From macroeconomic point of view, education, measured either by time or quality, affects economic growth.

Figure 1: The Association of Years of Education and Economic



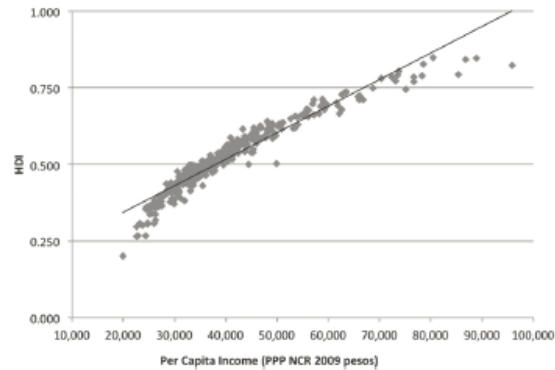
Source: Hanushek, 2010

Meanwhile from household’s point of view, having higher education is highly related to higher income. It has been viewed that the benefit of adding one more year of education may increase income since it is associated to higher skill and productivity. Studies that find the relationship of education and income

In regard to Philippine, the country’s economic development is considered as developing countries. Its rank in Human Development Index in 2013 is 102. There is significant improvement of Philippine scores in HDI components, especially in education. Philippine has focused to improve its education system since “a deep regard” for education (DepEd 2008). Figure 2 shows the association of HDI and per capita income. As HDI increases, it is likely that per capita income also increases.

In particular to Rizal province that has experienced declining of income, its HDI has decreased as well for 16.4% (HDN, 2013). In Rizal province, the score for education and income indexes decreases for 2.8% and 31% consecutively.

Figure 2: The Relationship of Education and Per Capita Income



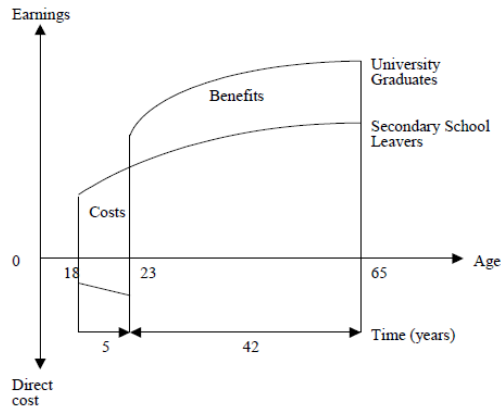
Source: HDN, 2013

2.2. Theoretical Framework of Cost-Benefit Analysis (CBA) for Education Project

Considering the impact of education in macro and household, education now is mostly seen as investment. Relevant questions for investment are how much money should a government or an individual spend for education and what are the benefits from having good education? To answer such questions, CBA can be applied practically. CBA refers to a systematic comparison of the costs and the benefits of investment to evaluate its profitability. If the benefits is higher than the costs and the ration between the benefits and costs is positive, the investment is warranted to be applied.

The costs of education project is best to be defined as opportunity cost (Woodhall, 2004) since all resources in such project can be allocated to different uses either in present or future use. Common example of opportunity cost is forgone income of a student who decides to continue her study to university rather than enters labor market. Her income during her study is considered as opportunity cost. Figure 3 shows a schematic earnings profile of university graduate and secondary school leavers. As shown in the figure, university graduates must give up their earnings in the beginning of their university year while secondary school leavers who enter labor market early have higher income at the beginning. But along the time, after university graduates enter labor market; their earnings are higher than secondary school leavers. And this situation, somehow, stays in a lifetime.

Figure 3: Stylized Age-Earnings Profile



Source: Jimenez and Patrinos (2008)

Other concept of costs for education project is social cost. This includes salary of teachers, study materials, and other related goods and services that are supplied by public fund. Those expenditures can also be private costs if an individual should provide them by their selves. Widhall (2004) resumes social and private costs of education in Table 1.

Table 1: Costs of Education

Social cost	Private cost
Direct	
Teacher salaries	Fees, minus average value of scholarships
Other current expenditure on goods and services	Books, etc
Expenditure on books	
Imputed rent	
Indirect	
Earnings forgone	Earnings forgone

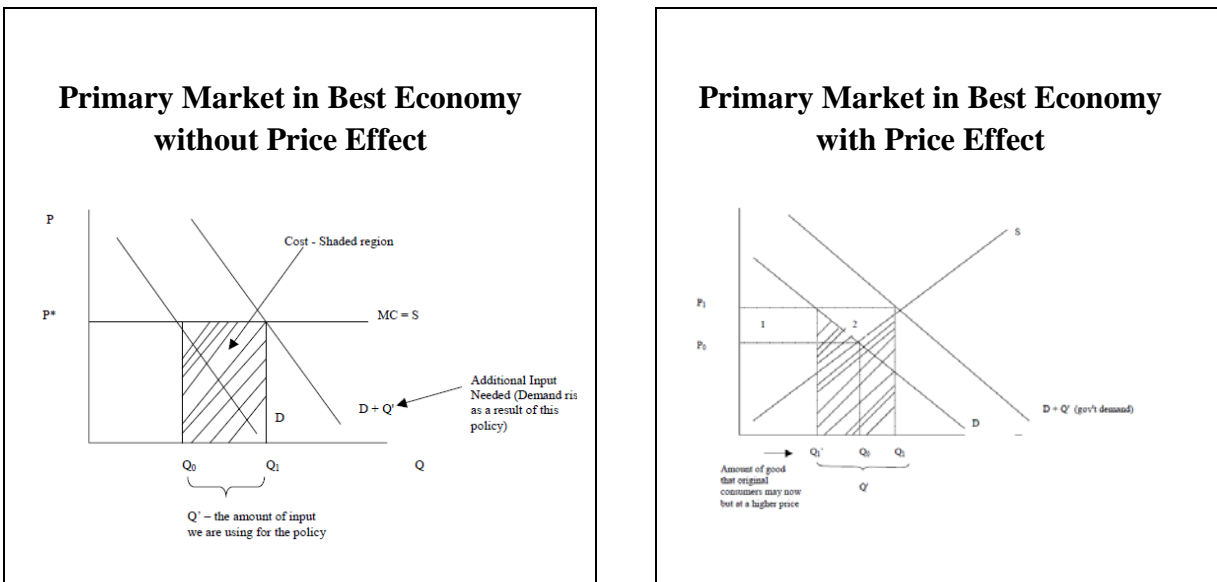
Source: Windhal, 2004.

Measurement of the benefits is from lifetime earnings of educated people compared to non-educated people, in other words this is social return (see Figure 3). However, calculating the

benefit of education from lifetime income is not sufficient. Education has huge effect or indirect effect to society which is difficult to monetize. Such benefit usually refers as positive externalities that may come in many forms. One of examples of positive externalities is the declining of fertility rate as more women go to school rather than marry in young age.

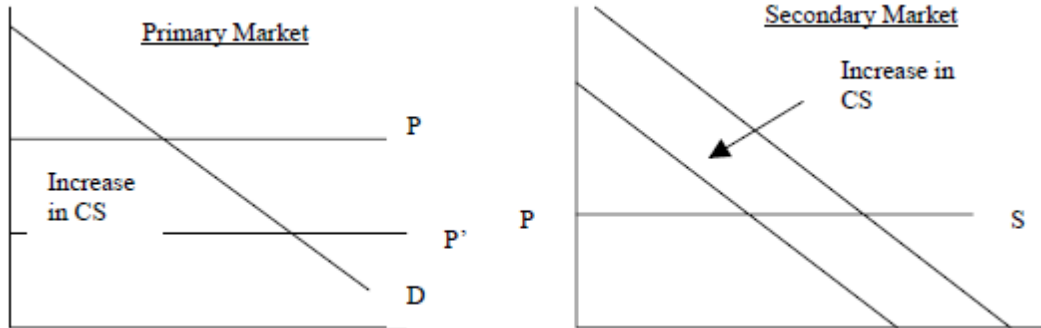
There are two approaches to valuing the benefits of education that are national income and consumer surplus approaches. Most often, consumer surplus approach is used to valuing the benefits. Consumer surplus approach measures changes in consumer and producer surpluses in a market directly affected by a policy. It must be considered whether the market is with or without price distortion (first best economy). In a first best economy where market is efficient but price effect is negligible, supply curve is horizontal and is marginal cost (price), while demand curve has downward sloping. In this kind of market, the movement of good of demand curve does not change the price but only quantity as shown by Figure 4. Existing consumers in this market are not influenced. In contrast, in an efficient market with price effect, change in demand curve will definitely change price. Existing consumers in this market is influenced by the policy.

Figure 5: Primary Market in Best Economy with and without Price Effect



Change in primary market may bring indirect effect to secondary market due to policy implementation. Figure 6 illustrates how change in primary market has an effect to other market as well.

Figure 6: Primary and Secondary Markets



Formula to calculate the costs and the benefits are in the following (equation 1). Both the costs and the benefits must be discounted to their present value. The private benefit (B) of having more years of education is the earning that last for the rest of a person's life while the private cost (C) is any cost incurred due to having more years of education plus opportunity cost due to forgone income. Investment will be continued as long as the net present value is positive.

$$\sum B_t/(1+r)^t = \sum C_t/(1+r)^t \quad (1)$$

2.3. Limitation of CBA for education project

Despite its practical implementation for education project, CBA has some limitations (Jimenez and Patrinos, 2008). Firstly, when estimating social returns, alternatives used are often assumed to be no education. It is because traditionally, CBA for education project assumes that government is the only financial source. Thus, the alternatives are when government does not provide education while actually there are many alternatives such as letting private sector to provide education. According to Jimenez and Patrinos (2008), this assumption leads to overestimate of social returns.

Second limitation is its inability to include externality or non-market effects when estimating the benefits of education. It is because externalities are difficult to be monetized and it is often in CBA calculation, externalities are neglected. For instance, the effect of education in improving

social equity in a country or reducing crime rate in society is problematic to be calculated or monetized.

Estimating distributional objectives is the third limitation. Income redistribution and poverty reduction are considered as social benefits. However, to calculate redistribution objective in a standard CBA is difficult in practice although the method has been developed by using rate of return formula.

Fourth limitation is correcting for market failure. So far income gap between university graduates and secondary school leavers is considered as the benefits of education. This benefit is actually arguably and may be overestimate the benefits of education. It is because skill and productivity do not necessarily resulted by being longer at school but also experience. Jimenez and Patrinos (2008) suggest that added productivity considered by labor market is because labor market takes the sorting done by school.

Lastly, CBA cannot capture different effect of education project. Currently, education does not only aim to expand the length of education but also quality of education. As many countries are already succeeded to expand years of education, they tend to focus on the quality of education. CBA cannot estimate the quality of education. Woodhall (2004) suggests to use cost effectiveness analysis in the area where CBA cannot cover.

3. PRIMARY MARKET ANALYSIS

3.1. Primary Market

In this project, the primary market dealt with the demand and supply for tertiary education. Due to the limited access on data, we relied on the figures provided in the project proposal made by the Municipality of Jalajala and other studies conducted in the Philippines relative to tertiary education.

3.1.1. Demand

The total demand pertains to the highschool graduates of Jalajala. In the past years, based on the project proposal of Municipality of Jalajala, about 30% of them were able to enter various universities. However, the proposal does not include the list of universities and the amount of fees charged by those institutions to these students. Also, we cannot find reliable study

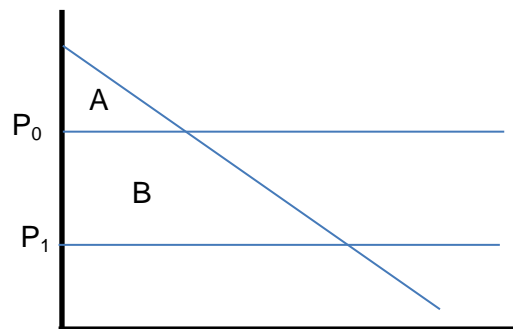
conducted regarding the varying amount of fees charged by the different universities/colleges in the locality or in the Philippines. Hence, to find the number of enrollees, we relied on the projection made by Municipality which is constrained by the capacity of the facilities. As in any case, we can assume that demand curve is downward sloping.

3.1.2 Supply

In the Philippines, educational institution is usually established as a non-profit organization and shall not declare any dividend as such but shall use their resources for furtherance of its operation as laid down in the Corporation Code. Further, schools are exempted from income tax. Hence, we can say that tuition and other school fees or the price approximate the marginal cost, supply curve is horizontal and there is no price distortion as in the case of “first best economy”. Based on the data on tuition fee increase for school year 2012-2013, the average proposed tuition per unit for Region IVA, the region where Rizal Province belongs, is P714.62. Based on the proposal of the establishment the University of Rizal, Jalajala Campus shall charge P100 per unit lower than the average school fees. This is within the range of fees charge in other campus of the University of Rizal.

Given the explanation above and as discussed in the background study, primary market can be depicted by this figure:

Figure 7: Primary Market



In this figure, P_0 is the average price of school fees without the project and P_1 is the price charged by the University of Rizal, Jalajala Campus. Based on this illustration, there is an additional consumer surplus in pursuing the project represented by the area “B”. However, since reliable demand curve can hardly be established and for conservatism, the group decided not to

consider this additional consumer surplus in the computation of the cost and benefit of the project.

3.2. Cost and Benefit

3.2.1. Costs

The costs of the project include the fixed and variable (operating costs) costs, and opportunity cost for students which are the amount of money they could earn had they not entered the university.

3.2.1.1 Fixed Costs

Fixed costs comprise of the cost of the land, building, and furniture and pieces of equipment that will be used by this Campus. The building has a useful life of 20 years while furniture and equipment have a useful life of 5 years. Since this project will run for 8 years, additional furniture and equipment will be purchased on the 6th year. We use the estimated initial costs of these fixed assets and adjust their prices based on average inflation to project their costs on the 6th year.

Table 2: Fixed Costs

Fixed Costs	units	price	1st Year	6th Year*
Furniture and Equipment				
Armchair	1100	925.00	1,017,500.00	1,225,496.22
Computer Units	54	5,000.00	1,350,000.00	1,625,965.51
Teachers Table	17	2,500.00	42,500.00	51,187.80
Executive Chair	4	5,500.00	22,000.00	26,497.22
Executive Table	4	7,800.00	31,200.00	37,577.87
Monobloc Chairs	900	275.00	247,500.00	298,093.68
Modular Computer Table	54	1,500.00	81,000.00	97,557.93
Computer Chair	54	1,000.00	54,000.00	65,038.62
6 - 8 seater table	24	10,000.00	240,000.00	289,060.53
Multi Media Projector	3	35,000.00	105,000.00	126,463.98

Projector Screen	3	5,000.00	15,000.00	18,066.28
Aircon Units - 2hp	6	33,000.00	198,000.00	238,474.94
Aircon Units - 1hp	6	15,000.00	90,000.00	108,397.70
Science Lab Table	12	10,000.00	120,000.00	144,530.27
Cubicle/Divider	6	21,244.00	127,464.00	153,520.05
Book Shelves	15	10,000.00	150,000.00	180,662.83
Laboratory Cabinet	3	15,000.00	45,000.00	54,198.85
Microscope	3	50,000.00	150,000.00	180,662.83
Photo Copier	3	60,000.00	180,000.00	216,795.40
Scanner	3	5,000.00	15,000.00	18,066.28
Printer	3	8,000.00	24,000.00	28,906.05
Conference Table	1	15,000.00	15,000.00	18,066.28
Conference Chair	10	1,500.00	15,000.00	18,066.28
Fax Machine	1	9,000.00	9,000.00	10,839.77
Library Holdings	3	50,000.00	150,000.00	180,662.83
Welding Machine	9	15,000.00	135,000.00	162,596.55
Welding Mask	9	2,000.00	18,000.00	21,679.54
Filing Cabinet	9	10,000.00	90,000.00	108,397.70
Sub-total			4,737,164.00	5,705,529.83
Land			5,400,000.00	
Building			30,200,000.00	
TOTAL FIXED COSTS			10,137,164.00	5,705,529.83

* Average inflation rate of 3.79% from 2008 to 2013 was used to project the cost.

3.2.1.2 Variable Costs

Variable costs include salaries of staff and faculty and utilities. We assume that salary will increase every two years using the salary matrix used for government employees. Further, there

will be additional professors on 2nd to 4th year of operation. Other benefits comprise of premium for social insurance system, health insurance, housing fund, mandatory allowances, 13th month pay and cash gifts. Utilities include electricity, water and communication costs. We allocate P66.00 monthly for every student on the first year as suggested in the project proposal and use the inflation rate to adjust costs for the succeeding years.

Table 3: Variable Costs

	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year
Basic	2,938,860.00	3,560,040.00	4,401,624.00	5,069,388.00	5,352,888.00	5,449,548.00	5,754,384.00	5,858,316.00
Other benefits	1,190,145.40	1,423,075.60	1,705,229.36	1,948,563.32	2,011,878.32	2,033,465.72	2,101,545.76	2,124,757.24
Sub-total	4,129,005.40	4,983,115.60	6,106,853.36	7,017,951.32	7,364,766.32	7,483,013.72	7,855,929.76	7,983,073.24
Utilities	274,032.00	526,090.75	695,376.00	863,280.00	860,904.00	858,528.00	862,488.00	861,696.00
Variable Cost	4,403,037.40	5,509,206.35	6,802,229.36	7,881,231.32	8,225,670.32	8,341,541.72	8,718,417.76	8,844,769.24

3.2.1.3 Opportunity Cost

Opportunity cost pertain to amount of money students can earn for four years had they not entered the university. We use the average daily rate for a highschool graduate determined in the study conducted by Luo and Terada on Education and Wage Differentials in the Philippines (using Year 2000 as base year) and adjust it using the average salary increase of 1.8% from 2008 to 2013. Recognizing that not all of them would be employed, we consider the unemployment rate (49%) for the age group, 15-24, published in the Philippine Statistics Authority website.

$$\text{Adjusted average daily rate}_{2014} = \text{P}176.47 \times (1 + 1.8\%)^{(2014-2000)} = \text{P}176.47 \times (1 + 1.8\%)^{14} = \text{P}266.54$$

$$\text{Adjusted annual salary}_{2014} = \text{P}266.54 \times 12 \times 299 \text{ working days} = \text{P}67,734.66$$

Table 4: Opportunity Costs

Year of Operation	Factor	Amount	No. of Students	Employment Rate	Total Amount
	$a = (1+1.8\%)^{t-1}$	B	C	D	$e = a \times b \times c \times d$
1	1.00	67,734.66	213	51%	7,358,016.30
2	1.02	68,953.89	640	51%	22,506,548.26
3	1.04	70,195.06	878	51%	31,431,941.97
4	1.05	71,458.57	1090	51%	39,723,817.14
5	1.07	72,744.82	1087	51%	40,327,546.27
6	1.09	74,054.23	743	51%	28,061,368.43
7	1.11	75,387.20	458	51%	17,608,943.02
8	1.13	76,744.17	210	51%	8,219,300.96

3.2.2. Benefits

Benefits from the project can be traced from the increase in salary of the graduates, revenue from tuition and other fees and residual value of fixed assets including land

3.2.2.1 Increase in Salary of the Graduates

The benefits that will be obtained from establishing the campus in Jalajala, Rizal will come mainly from the difference between the income a college graduate can earn as against the income a highschool graduate can make in their productive years. Again, we use the average daily rate, for both degree holder (P354.86) and highschool (P176.47), determined in the study conducted by Luo and Terada on Education and Wage Differentials in the Philippines (using Year 2000 as base year) to compute for the marginal salary. We adjust it for succeeding years using the average salary increase of 1.8% from 2008 to 2013. Further, we consider the unemployment rate in the every age bracket (Table5) as published in the Philippine Statistics Authority website and assume that the rest will be employed.

Table 5: Age Group and Unemployment Rate

AGE GROUP	Unemployment Rate
15 – 24	49.00
25 – 34	30.75
35 – 44	10.10
45 – 54	6.35
55 – 64	3.15
65 and over	0.65

$$\text{Marginal average daily rate}_{2014} = (P\ 354.86 - P176.47) \times (1 + 1.8\%)^{(2014-2000)} = P178.39 \times (1 + 1.8\%)^{14} = P229.14$$

$$\text{Marginal annual salary}_{2014} = P229.14 \times 12 \times 299 \text{ working days} = P68,512.49$$

To illustrate, computation for the first batch of graduate is shown below. Computation other batches is shown in Appendix _____.

Table 6: Illustration of Annual Salary of First Graduates

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	A	B	C		D	e = a x b x c x d
5	1.09	74,920.60	213	22	51%	8,138,624.58
6	1.11	76,272.42	213	23	51%	8,285,473.02
7	1.13	77,648.63	213	24	51%	8,434,971.10
8	1.15	79,049.68	213	25	69%	11,660,025.29
9	1.17	80,476.00	213	26	69%	11,870,411.76
10	1.20	81,928.06	213	27	69%	12,084,594.32
11	1.22	83,406.33	213	28	69%	12,302,641.46
12	1.24	84,911.26	213	29	69%	12,524,622.92
13	1.26	86,443.35	213	30	69%	12,750,609.67

14	1.28	88,003.08	213	31	69%	12,980,673.99
15	1.31	89,590.95	213	32	69%	13,214,889.45
16	1.33	91,207.48	213	33	69%	13,453,330.95
17	1.36	92,853.17	213	34	90%	17,780,175.02
18	1.38	94,528.56	213	35	90%	18,100,989.79
19	1.40	96,234.17	213	36	90%	18,427,593.15
20	1.43	97,970.56	213	37	90%	18,760,089.54
21	1.46	99,738.29	213	38	90%	19,098,585.29
22	1.48	101,537.90	213	39	90%	19,443,188.66
23	1.51	103,369.99	213	40	90%	19,794,009.85
24	1.54	105,235.14	213	41	90%	20,151,161.04
25	1.56	107,133.94	213	42	90%	20,514,756.45
26	1.59	109,067.00	213	43	94%	21,756,085.01
27	1.62	111,034.94	213	44	94%	22,148,638.70
28	1.65	113,038.39	213	45	94%	22,548,275.39
29	1.68	115,077.98	213	46	94%	22,955,122.89
30	1.71	117,154.38	213	47	94%	23,369,311.30
31	1.74	119,268.24	213	48	94%	23,790,973.08
32	1.77	121,420.25	213	49	94%	24,220,243.07
33	1.80	123,611.08	213	50	94%	24,657,258.54
34	1.84	125,841.44	213	51	94%	25,102,159.26
35	1.87	128,112.05	213	52	97%	26,428,299.25
36	1.90	130,423.63	213	53	97%	26,905,155.56
37	1.94	132,776.91	213	54	97%	27,390,615.98
38	1.97	135,172.66	213	55	97%	27,884,835.76
39	2.01	137,611.63	213	56	97%	28,387,972.94
40	2.04	140,094.62	213	57	97%	28,900,188.42
41	2.08	142,622.40	213	58	97%	29,421,646.01
42	2.12	145,195.79	213	59	97%	29,952,512.47

43	2.16	147,815.62	213	60	97%	30,492,957.56
44	2.20	150,482.71	213	61	99%	31,844,474.57
45	2.24	153,197.93	213	62	99%	32,419,057.08
46	2.28	155,962.14	213	63	99%	33,004,007.02
47	2.32	158,776.23	213	64	99%	33,599,511.44
48	2.36	161,641.09	213	65	99%	34,205,760.79

3.2.2.2 Revenue from Tuition and Other Fees

Revenue from tuition and other fees to be charged by URS-Jalajala Campus as a benefit as this will diminish the costs that will be incurred by the government. Moreover, this an additional benefit since such transaction would not be realized if this Campus will not be established. We use the proposed tuition and other fees which is within the range of fees charged by other campuses and adjust them using average inflation rate for the succeeding years

Table 7: Revenues

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Enrollees								
1st Yr.	346	346	334	343	341	341	341	341
2nd Yr.		294	294	284	292	290	290	290
3rd Yr.			250	250	241	248	247	247
4th Yr.				213	213	205	211	210
Total	346	640	878	1090	1087	1084	1089	1088
Fees								
Tuition Fee	2,400.00	2,490.96	2,585.37	2,683.35	2,785.05	2,890.61	3,000.16	3,113.87
Miscellaneous	1,660.00	1,722.91	1,788.21	1,855.99	1,926.33	1,999.34	2,075.11	2,153.76
Total	4,060.00	4,213.87	4,373.58	4,539.34	4,711.38	4,889.94	5,075.27	5,267.62
Semesters	2	2	2	2	2	2	2	2
Revenue	809,520.00	893,758.72	980,006.17	1,095,757.93	1,242,538.88	1,401,391.46	1,553,936.89	1,746,345.85

3.2.2.3 Horizon Value of Fixed Assets and Land

Since we limit this study for 5 batches of graduates, we will account the amount that can be allocated for the rest of the useful life of the fixed assets after the 8th year as residual value of these assets. On the other hand, since land does not depreciate and usually appreciates, we use its whole cost and inflation to project for the amount it will be saleable after the 8th year.

Table 8: Depreciable Assets

a. Depreciable Assets

	Furniture and Equipment*	Building
Cost	5,705,529.83	30,200,000.00
Divided by useful Life	5	20
	1,141,105.97	1,510,000.00
Multiplied by remaining useful life after 8th year	2	12
Residual Value	2,282,211.94	18,120,000.00

*purchased on 6th year

b. Non-depreciable Asset

$$\text{Value of Land}_{2022} = \text{P}5,400,000.00 \times (1+3.79\%)^{(2022-2014)} = \text{P}7,006,196.98$$

c. Total Horizon Value

$$\text{Horizon Value} = 2,282,211.94 + 18,120,000.00 + 7,006,196.98 = 27,408,408.91$$

3.3. Net Present Value (NPV) and Benefit-Cost Ratio (BCR)

The table below summarizes the benefits and costs. Amounts were discounted at 15%, the rate used by the National Economic Development Authority (NEDA), the planning agency of the Philippines.

Table 9: Benefits and Costs Calculation

Yr	Factor	Increase in Salary	Revenue	Horizon Value	Total Benefits	Discounted Benefits	Fixed Cost	Variable Cost	Opportunity Cost	Total Costs	Discounted Cost
1	1.0000		2,809,520		2,809,520	2,809,520	24,137,164	4,403,037	7,358,016	35,898,218	35,898,218
2	0.7561		5,393,759		5,393,759	4,078,456		5,509,206	22,506,548	28,015,755	21,183,935
3	0.6575		7,680,006		7,680,006	5,049,729		6,802,229	31,431,942	38,234,171	25,139,588
4	0.5718		9,895,758		9,895,758	5,657,932		7,881,231	39,723,817	47,605,048	27,218,341
5	0.4972	8,138,625	10,242,539		18,381,163	9,138,687		8,225,670	40,327,546	48,553,217	24,139,530
6	0.4323	16,570,946	10,601,391		27,172,337	11,747,351	3,423,318	8,341,542	28,061,368	39,826,228	17,217,977
7	0.3759	24,988,107	11,053,937		36,042,044	13,549,539		8,718,418	17,608,943	26,327,361	9,897,430
8	0.3269	37,018,372	11,462,346	27,408,409	75,889,127	24,808,290		8,844,769	8,219,301	17,064,070	5,578,275
9	0.2843	52,444,401			52,444,401	14,907,972					
10	0.2472	59,685,414			59,685,414	14,753,322					
11	0.2149	60,762,342			60,762,342	13,060,454					
12	0.1869	61,858,701			61,858,701	11,561,834					
13	0.1625	62,974,842			62,974,842	10,235,172					
14	0.1413	64,111,122			64,111,122	9,060,739					
15	0.1229	65,267,905			65,267,905	8,021,066					
16	0.1069	66,445,559			66,445,559	7,100,689					
17	0.0929	71,728,563			71,728,563	6,665,440					
18	0.0808	81,182,212			81,182,212	6,559,938					
19	0.0703	91,013,277			91,013,277	6,395,077					
20	0.0611	92,655,466			92,655,466	5,661,275					
21	0.0531	94,327,285			94,327,285	5,011,673					

Yr	Factor	Increase in Salary	Revenue	Horizon Value	Total Benefits	Discounted Benefits	Fixed Cost	Variable Cost	Opportunity Cost	Total Costs	Discounted Cost
22	0.0462	96,029,270			96,029,270	4,436,609					
23	0.0402	97,761,964			97,761,964	3,927,531					
24	0.0349	99,525,922			99,525,922	3,476,867					
25	0.0304	101,321,708			101,321,708	3,077,914					
26	0.0264	104,021,068			104,021,068	2,747,752					
27	0.0230	107,638,435			107,638,435	2,472,440					
28	0.0200	111,365,191			111,365,191	2,224,385					
29	0.0174	113,374,598			113,374,598	1,969,148					
30	0.0151	115,420,261			115,420,261	1,743,198					
31	0.0131	117,502,834			117,502,834	1,543,175					
32	0.0114	119,622,985			119,622,985	1,366,104					
33	0.0099	121,781,390			121,781,390	1,209,351					
34	0.0086	123,978,740			123,978,740	1,070,584					
35	0.0075	127,088,949			127,088,949	954,297					
36	0.0065	131,126,612			131,126,612	856,187					
37	0.0057	135,281,352			135,281,352	768,100					
38	0.0049	137,722,287			137,722,287	679,965					
39	0.0043	140,207,265			140,207,265	601,942					
40	0.0037	142,737,081			142,737,081	532,872					
41	0.0032	145,312,543			145,312,543	471,728					

Yr .	Factor	Increase in Salary	Revenue	Horizon Value	Total Benefits	Discounted Benefits	Fixed Cost	Variable Cost	Opportunity Cost	Total Costs	Discounted Cost
42	0.0028	147,934,475			147,934,475	417,600					
43	0.0025	150,603,715			150,603,715	369,682					
44	0.0021	154,122,438			154,122,438	328,973					
45	0.0019	158,504,249			158,504,249	294,197					
46	0.0016	163,005,706			163,005,706	263,089					
47	0.0014	165,946,883			165,946,883	232,901					
48	0.0012	168,941,128			168,941,128	206,176					
49	0.0011	137,166,451			137,166,451	145,564					
50	0.0009	104,190,127			104,190,127	96,147					
51	0.0008	71,334,664			71,334,664	57,241					
52	0.0007	36,224,643			36,224,643	25,276					
	Total				4,954,515,738	234,401,148				281,524,068	166,273,294

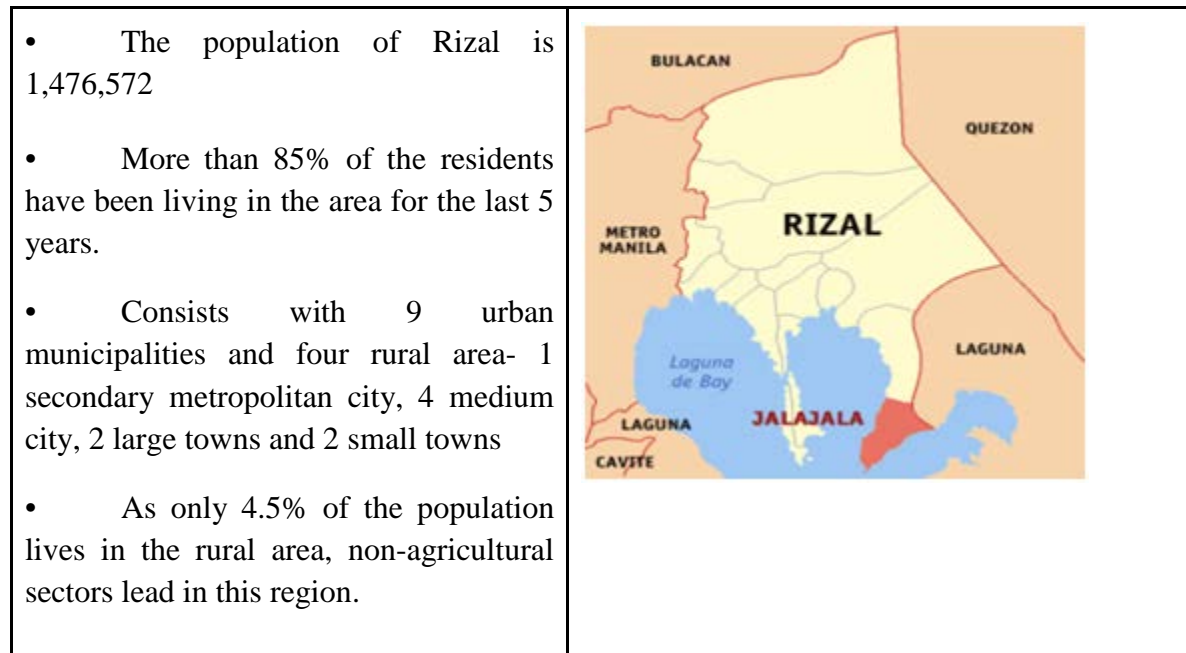
Net Present Value = PV of Benefit – PV of Cost = P234,401,148 - P166,273,294 = P68,127,854

Benefit-Cost Ratio = PV of Benefit/ PV of Cost = P234,401,148/P166,273,294 = 1.41

Taking into consideration the 15% social discount rate, the Net Present Value (NPV) and Benefit-Cost Ratio (BCR) can be derived for this project. The present value of total benefits is P234,401,148 and the present value of total costs is P166,273,294. Therefore, the NPV is 68,127,854 and the CBR is 1.41. Based on both NPV and BCR, it can be inferred that the benefits of the project greatly outweigh the costs.

4. SECONDARY MARKET ANALYSIS

Figure 8: Basic Information of Rizal

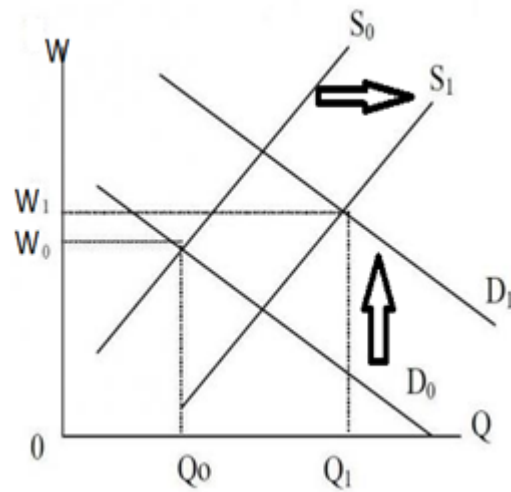


Source: Rizal Provincial Government (2013)

This part of the paper reviews what is known about the role of education in improving the labor market outcome, with a particular focus on how the betterment of human capital affect the individual's wage. Particularly, the objective of the study is to analyze the effect of URS campus on labor market of Rizal, the Philippines by asking how the average wage would change over time if the number of university graduates increase.

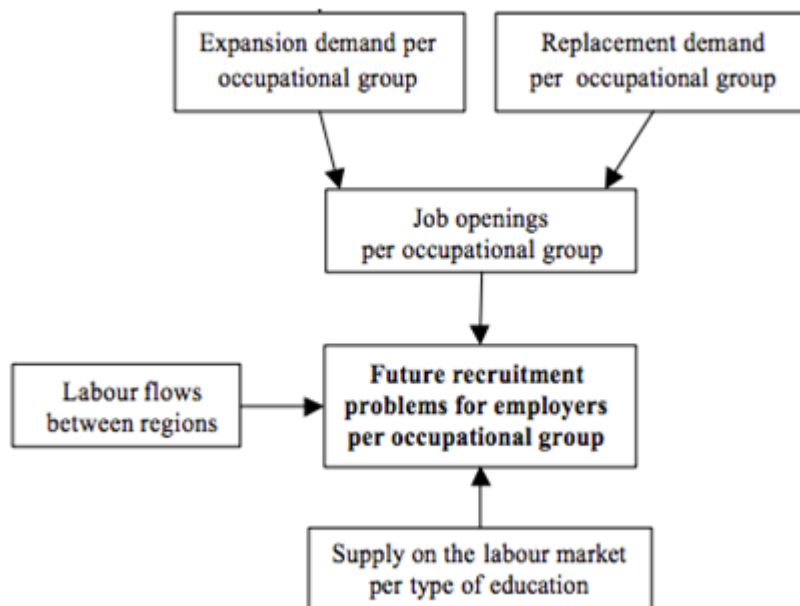
The Demand and Supply theory indicates: with the increase in supply, the demand should increase substantially to explain the increase in wage.

Figure 9: Demand-Supply of Labor Market



Hypothesis: As the labor supply increase, the average wage should decrease. However, in the long run, as the quality of human capital increases, the labor demand market also expand- which result in increase of average wage. To gain a comprehensive picture of education–labor market linkages, supply-side analysis needs to be complemented with demand-side analysis (Fasih, 2008). To do both demand and supply analysis, the labor- market forecasting model was utilized in this paper (Hensen and Cörvers, 2004).

Figure 10: Diagram of Labor Market Model



According to this model, future recruitment per occupational group is characterized by three dimensions, such as 1) labor supply, 2) labor demand- job opening rate and 3) labor flows between regions.

4.1. Supply- side Analysis

To calculate the supply- side the following *method* is used.

1. Calculate number of workers with university degree in each labor sector in 2013
1. Calculate Elasticity of labor supply market of Rizal based on previous 2008 and 2010 data

$$e = \frac{\% \text{ change in employment}}{\% \text{ change in wage}} = \frac{(\text{Emp rate}_{2010} - \text{Emp rate}_{2008}) / \text{Emp rate}_{2010}}{(\text{Wage}_{2010} - \text{Wage}_{2008}) / \text{Wage}_{2010}}$$

3. Forecast the wage changes for 2013, based on previous elasticity for each sector

$$\% \text{ change in wage} = \frac{\# \text{ university students added}_{2013}}{\# \text{ university students}_{2013}}$$

4.1.1. Accumulated data

The following data of Rizal area was accumulated from Philippine Statistics Authority.

Table 10: Employment Data in Rizal Province

Labor Statistics (Ave./Total)	2008	2010	2013
A. Labor Force Participation Rate (%)	63.7	64.1	63.9
B. Employment Rate (%) 1	92.6	92.7	92.9
C. Unemployment Rate (%) 1	7.4	7.4	7.1

Employment by sectors	Ave. monthly basic pay (peso)- University graduates		Min. wage- High school graduates		% in Labor Market
	2008	2010	2008	2010	2013
1. Technician/ IT/ repair	9,320.0	10,425.0	3,882	3,882	3.5
2. Service worker	8,829.0	9,933.0	3,882	3,882	12.2
3. Business	11,662.0	11,335.0	3,882	3,882	9.1

Education attainment in each sector (ave.)	%
	2007- 2013
1. High school graduates	33.0
2. College graduates	17.0

Sources: (TESDA, 2011) and (POEA, 2013)

4.1.2. Findings

URS campus offers 4- year undergraduate education in four majors, naming Business, IT- Technician, Social science and Teaching; therefore, we are interested in the occupational sectors of 1) Technician/IT, 2)Service worker (social science and teaching and 3)Business. Using the data from PSA, we predicted the number of workforce, of which how many will be university degreed. Furthermore, based on our CBA calculation.

Table 11: Elasticity Calculations

	# of workers in Rizal 2013			Project graduates	
	Total	High school degree	University degree	Total graduates per year	Employed graduates
1. Technician/ IT/ repair	55,669	18,371	9,464	53	49
2. Service worker	194,047	64,035	32,988	107	99
3. Business	144,740	47,764	24,606	53	49
				213	198



	Technician/ IT/ repair	Service worker	Business
Elasticity of labor supply (2008 and 2010)	0.005091413	0.004855522	-0.01870675
% change of wage in short run	1.016911087	0.618077972	-0.106452707

- All three sectors' labor supply sides are inelastic, in other words, regardless of wage, there will be supply of labor.
- The IT and Service sectors' labor supply change and wage changes are positively correlated. As the supply increases the wage increases. Ex: Adding 99 university student in the service market increases university graduate wage by 0.6%.
- Business sectors' labor supply change and wage changes are negatively correlated. Having more 49 university graduates in the sector decreases the wage by 0.1%.

4.2. Demand- side Analysis

If there are major issues that affect education–labor market linkages originate in the demand side of the labor market, further expansion of education is unwarranted without attempting to address these issues (Fasih, 2008). For example, subsidies in tertiary education need to be accompanied by the creation of an environment conducive to investment and technological progress. In the

absence of such an environment, countries will find their population emigrating for better opportunities and governments will need to continue subsidizing education to compensate for weak effective demand (Fasih, 2008). Therefore, to understand the labor demand the side, labor market demand forecast is studied.

- Forecast is limited to the medium term, that is, to a period of five years. Within this horizon the changes on the labor market are less uncertain than in the long term due to geographical mobility and possibility of opening new business/ industry, uncertainties are larger for the small scale analysis (Hensen and Cörvers, 2004).
- National occupational and educational structure of employment within sectors of industry is very similar to the employment structure in many regions as the trend in employment structure in segmented regional labor market (Hensen and Cörvers, 2004).
- Has both ex ante and ex post substitution process (Hensen and Cörvers, 2004)

Table 12: Labor Turnover rate in the Philippines, December 2013

Industry Group	Total			Accession		Separation	
		Accession	Separation	Expansion	Replacement	Employee-initiated	Employer-initiated
Technician/ IT	7.97	7.13	0.84	5.19	2.78	1.32	5.81
Service	9.05	5.35	3.7	4.28	4.82	2.31	3.04
Business	10.15	6.37	3.77	2.85	7.3	1.7	4.68

Source: Philippine Statistics Authority, 2014

According to Philippine Statistics Authority, the table suggests in Technician sector, an addition of 8 workers per 1,000 employed: 79 workers per 1,000 employed were added to the workforce due to expansion or replacement while 71 workers per 1,000 employed were terminated or quit their jobs. Labor turnover figure for the remaining two sectors (service and business) are rather similar. However, in these two sectors graduates are more likely to be hired than terminated compare to the technician sector.

4.3. Labor flows

As reported by Department of Labor and Employment, compare to domestic migration the international labor migration is increasing rapidly over the years.

Table 13: Philippine Labor Migration by Major Occupation (%)

Occupation	2005	2010	2011
Technician/ IT	8	5.6	5
Service	13.6	15.1	15.5
Business	14.7	14.9	12.8

Source: Capones, 2013

Although the overall labor migration is increasing, in our interested sectors, especially technician and Business sectors, the migration is decreasing over the last few years.

4.4. Results

Labor market forecast model (analysing supply, demand and labor flow) suggests that due to increase of supply, there will be change in average wage of university graduates; however, the wage would not necessarily decrease as assumed. The wage change was occupation/ sector specific. Furthermore, current situation of firms' demand for labor force was also different across sector.

Technician/ IT- Adding 49 graduates to the Rizal labor market increase the average wage of university students by 1%. However, work accession rate and separation rate are close. In other words, the possibility of getting hired is as same as getting fired. International labor migration is decreasing over the years.

Service- Adding 99 graduates to the Rizal labor market increase the average wage of university students by 0.6%. Work accession rate is higher than work separation rate. The labor demand market is increasing. Getting hired is easier than being fired. However, international labor migration is considered to be remaining still high.

Business- Adding 49 graduates to the Rizal labor market decrease the average wage of university students by 0.1%. Work accession rate is higher than work separation rate. The labor demand

market is increasing. Getting hired is easier than being fired. International labor migration is decreasing over the years.

4.5. Sensitivity Analysis

- Elasticity calculation

The forecast calculation is based on elasticity between the period of 2008 and 2010. For better accuracy, at least 20 years of observation is needed.

- Effect of economic shock on labor market as a whole

Ideally, the shock is calculated for the elasticity; however, as the unemployment rate and labor participation rate were stable during the last 10 years, we did not include the shock effect.

- Internal labor flow

Due to lack of data, we only concentrated on international labor migration in each sector. As the literature suggests that the international labor migration issue is more of an issue than domestic migration, we excluded internal region to region migration.

5. CONCLUSION

The Jalajala municipality is introducing the development of the URS-LGU Jalajala skills training program. The initiative provides youth, especially fresh high school graduates who struggle with the rising education costs, with the opportunity to attend quality-driven and knowledge-rich college programs. The higher education includes four years undergraduate program on five majors.

In order to forecast the impact of this program on the municipality and on the society as a whole, the study will comprise a projection period of 8 years and construct quantitative/ qualitative analysis on how much benefit this fully- government funded project can provide. In order to forecast the impact of this program on the municipality and on the society as a whole, the study will comprise a projection period of 8 years and construct quantitative/ qualitative analysis on how much benefit this fully- government funded project can provide. The analysis comprises the effect from the establishment of URS-LGU Jalajala in both primary and secondary markets. To analyze whether the project is viable or not, the study incorporates Cost and Benefit Analysis (CBA) method. The alternative of the establishment of URS-LGU Jalajala is no education or no new campus in Jalajala. Conclusion on whether the project will be continued or not will be fully from the result of CBA.

Primary market in this study is assumed to be “first best economy” with negligible price distortion. Tuition and other school fees or the price approximate the marginal cost, thereby supply curve is horizontal. It is because the establishment of URS does not affect other university to respond by changing their tuitions. While demand curve is as usual that is downward sloping. Unfortunately, the analysis, so far, cannot be continued due to data limitation.

The result of CBA calculation shows that taking into consideration the 15% social discount rate, the Net Present Value (NPV) and Benefit-Cost Ratio (BCR) can be derived for this project. The present value of total benefits is P234,401,148 and the present value of total costs is P166,273,294. Therefore, the NPV is 68,127,854 and the CBR is 1.41. Based on both NPV and BCR, it can be inferred that the benefits of the project greatly outweigh the costs.

As for secondary market, the analysis is based on labor market forecast model suggests that by increasing supply, the average wage of university graduates will change; however, the wage would not necessarily decrease as assumed. The change of wage is different across occupation/sector specific. For technician/IT, by adding 49 graduates to the Rizal labor market increase the average wage of university students by 1%. However, work accession rate and separation rate are close. In other words, the possibility of getting hired is as same as getting fired. International labor migration is decreasing over the years. In service sector, adding 99 graduates to the Rizal labor market increase the average wage of university students by 0.6%. Work accession rate is higher than work separation rate. The labor demand market is increasing. Getting hired is easier than being fired. However, international labor migration is considered to be remaining still high. Lastly in business sector, adding 49 graduates to the Rizal labor market decrease the average wage of university students by 0.1%. Work accession rate is higher than

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Appendix I – Increase in Salary of the Graduates

First Batch of Graduate

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
5	1.09	74,920.60	213	22	51%	8,138,624.58
6	1.11	76,272.42	213	23	51%	8,285,473.02
7	1.13	77,648.63	213	24	51%	8,434,971.10
8	1.15	79,049.68	213	25	69%	11,660,025.29
9	1.17	80,476.00	213	26	69%	11,870,411.76
10	1.20	81,928.06	213	27	69%	12,084,594.32
11	1.22	83,406.33	213	28	69%	12,302,641.46
12	1.24	84,911.26	213	29	69%	12,524,622.92
13	1.26	86,443.35	213	30	69%	12,750,609.67
14	1.28	88,003.08	213	31	69%	12,980,673.99
15	1.31	89,590.95	213	32	69%	13,214,889.45
16	1.33	91,207.48	213	33	69%	13,453,330.95
17	1.36	92,853.17	213	34	90%	17,780,175.02
18	1.38	94,528.56	213	35	90%	18,100,989.79
19	1.40	96,234.17	213	36	90%	18,427,593.15
20	1.43	97,970.56	213	37	90%	18,760,089.54
21	1.46	99,738.29	213	38	90%	19,098,585.29
22	1.48	101,537.90	213	39	90%	19,443,188.66
23	1.51	103,369.99	213	40	90%	19,794,009.85
24	1.54	105,235.14	213	41	90%	20,151,161.04
25	1.56	107,133.94	213	42	90%	20,514,756.45
26	1.59	109,067.00	213	43	94%	21,756,085.01
27	1.62	111,034.94	213	44	94%	22,148,638.70
28	1.65	113,038.39	213	45	94%	22,548,275.39
29	1.68	115,077.98	213	46	94%	22,955,122.89
30	1.71	117,154.38	213	47	94%	23,369,311.30
31	1.74	119,268.24	213	48	94%	23,790,973.08
32	1.77	121,420.25	213	49	94%	24,220,243.07
33	1.80	123,611.08	213	50	94%	24,657,258.54
34	1.84	125,841.44	213	51	94%	25,102,159.26
35	1.87	128,112.05	213	52	97%	26,428,299.25
36	1.90	130,423.63	213	53	97%	26,905,155.56
37	1.94	132,776.91	213	54	97%	27,390,615.98
38	1.97	135,172.66	213	55	97%	27,884,835.76
39	2.01	137,611.63	213	56	97%	28,387,972.94
40	2.04	140,094.62	213	57	97%	28,900,188.42
41	2.08	142,622.40	213	58	97%	29,421,646.01
42	2.12	145,195.79	213	59	97%	29,952,512.47
43	2.16	147,815.62	213	60	97%	30,492,957.56
44	2.20	150,482.71	213	61	99%	31,844,474.57

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
45	2.24	153,197.93	213	62	99%	32,419,057.08
46	2.28	155,962.14	213	63	99%	33,004,007.02
47	2.32	158,776.23	213	64	99%	33,599,511.44
48	2.36	161,641.09	213	65	99%	34,205,760.79

Second Batch of Graduate

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
6	1.11	76,272.42	213	22	51%	8,285,473.02
7	1.13	77,648.63	213	23	51%	8,434,971.10
8	1.15	79,049.68	213	24	51%	11,660,025.29
9	1.17	80,476.00	213	25	69%	11,870,411.76
10	1.20	81,928.06	213	26	69%	12,084,594.32
11	1.22	83,406.33	213	27	69%	12,302,641.46
12	1.24	84,911.26	213	28	69%	12,524,622.92
13	1.26	86,443.35	213	29	69%	12,750,609.67
14	1.28	88,003.08	213	30	69%	12,980,673.99
15	1.31	89,590.95	213	31	69%	13,214,889.45
16	1.33	91,207.48	213	32	69%	13,453,330.95
17	1.36	92,853.17	213	33	69%	17,780,175.02
18	1.38	94,528.56	213	34	90%	18,100,989.79
19	1.40	96,234.17	213	35	90%	18,427,593.15
20	1.43	97,970.56	213	36	90%	18,760,089.54
21	1.46	99,738.29	213	37	90%	19,098,585.29
22	1.48	101,537.90	213	38	90%	19,443,188.66
23	1.51	103,369.99	213	39	90%	19,794,009.85
24	1.54	105,235.14	213	40	90%	20,151,161.04
25	1.56	107,133.94	213	41	90%	20,514,756.45
26	1.59	109,067.00	213	42	90%	21,756,085.01
27	1.62	111,034.94	213	43	94%	22,148,638.70
28	1.65	113,038.39	213	44	94%	22,548,275.39
29	1.68	115,077.98	213	45	94%	22,955,122.89
30	1.71	117,154.38	213	46	94%	23,369,311.30
31	1.74	119,268.24	213	47	94%	23,790,973.08
32	1.77	121,420.25	213	48	94%	24,220,243.07
33	1.80	123,611.08	213	49	94%	24,657,258.54
34	1.84	125,841.44	213	50	94%	25,102,159.26
35	1.87	128,112.05	213	51	94%	26,428,299.25
36	1.90	130,423.63	213	52	97%	26,905,155.56
37	1.94	132,776.91	213	53	97%	27,390,615.98
38	1.97	135,172.66	213	54	97%	27,884,835.76

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
39	2.01	137,611.63	213	55	97%	28,387,972.94
40	2.04	140,094.62	213	56	97%	28,900,188.42
41	2.08	142,622.40	213	57	97%	29,421,646.01
42	2.12	145,195.79	213	58	97%	29,952,512.47
43	2.16	147,815.62	213	59	97%	30,492,957.56
44	2.20	150,482.71	213	60	97%	31,844,474.57
45	2.24	153,197.93	213	61	99%	32,419,057.08
46	2.28	155,962.14	213	62	99%	33,004,007.02
47	2.32	158,776.23	213	63	99%	33,599,511.44
48	2.36	161,641.09	213	64	99%	34,205,760.79
49	2.40	164,557.65	213	65	99%	34,822,948.93

Third Batch of Graduate

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
7	1.13	77,648.63	205	22	51%	8,118,164.68
8	1.15	79,049.68	205	23	51%	8,264,643.95
9	1.17	80,476.00	205	24	51%	11,424,574.70
10	1.20	81,928.06	205	25	69%	11,630,712.85
11	1.22	83,406.33	205	26	69%	11,840,570.42
12	1.24	84,911.26	205	27	69%	12,054,214.54
13	1.26	86,443.35	205	28	69%	12,271,713.53
14	1.28	88,003.08	205	29	69%	12,493,136.94
15	1.31	89,590.95	205	30	69%	12,718,555.57
16	1.33	91,207.48	205	31	69%	12,948,041.53
17	1.36	92,853.17	205	32	69%	13,181,668.19
18	1.38	94,528.56	205	33	69%	17,421,140.41
19	1.40	96,234.17	205	34	90%	17,735,476.97
20	1.43	97,970.56	205	35	90%	18,055,485.24
21	1.46	99,738.29	205	36	90%	18,381,267.54
22	1.48	101,537.90	205	37	90%	18,712,928.06
23	1.51	103,369.99	205	38	90%	19,050,572.86
24	1.54	105,235.14	205	39	90%	19,394,309.92
25	1.56	107,133.94	205	40	90%	19,744,249.16
26	1.59	109,067.00	205	41	90%	20,100,502.50
27	1.62	111,034.94	205	42	90%	21,316,764.95
28	1.65	113,038.39	205	43	94%	21,701,391.81
29	1.68	115,077.98	205	44	94%	22,092,958.65
30	1.71	117,154.38	205	45	94%	22,491,590.69
31	1.74	119,268.24	205	46	94%	22,897,415.40
32	1.77	121,420.25	205	47	94%	23,310,562.58

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
33	1.80	123,611.08	205	48	94%	23,731,164.32
34	1.84	125,841.44	205	49	94%	24,159,355.16
35	1.87	128,112.05	205	50	94%	24,595,272.01
36	1.90	130,423.63	205	51	94%	25,894,633.29
37	1.94	132,776.91	205	52	97%	26,361,860.45
38	1.97	135,172.66	205	53	97%	26,837,517.98
39	2.01	137,611.63	205	54	97%	27,321,757.99
40	2.04	140,094.62	205	55	97%	27,814,735.33
41	2.08	142,622.40	205	56	97%	28,316,607.66
42	2.12	145,195.79	205	57	97%	28,827,535.47
43	2.16	147,815.62	205	58	97%	29,347,682.16
44	2.20	150,482.71	205	59	97%	29,877,214.06
45	2.24	153,197.93	205	60	97%	31,201,439.92
46	2.28	155,962.14	205	61	99%	31,764,419.90
47	2.32	158,776.23	205	62	99%	32,337,557.96
48	2.36	161,641.09	205	63	99%	32,921,037.38
49	2.40	164,557.65	205	64	99%	33,515,044.75
50	2.45	167,526.83	205	65	99%	34,119,770.02

Fourth Batch

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
8	1.15	79,049.68	211	22	51%	8,506,535.97
9	1.17	80,476.00	211	23	51%	8,660,022.78
10	1.20	81,928.06	211	24	51%	11,971,123.95
11	1.22	83,406.33	211	25	69%	12,187,123.70
12	1.24	84,911.26	211	26	69%	12,407,020.82
13	1.26	86,443.35	211	27	69%	12,630,885.63
14	1.28	88,003.08	211	28	69%	12,858,789.72
15	1.31	89,590.95	211	29	69%	13,090,805.98
16	1.33	91,207.48	211	30	69%	13,327,008.60
17	1.36	92,853.17	211	31	69%	13,567,473.11
18	1.38	94,528.56	211	32	69%	13,812,276.43
19	1.40	96,234.17	211	33	69%	18,254,564.10
20	1.43	97,970.56	211	34	90%	18,583,938.46
21	1.46	99,738.29	211	35	90%	18,919,255.85
22	1.48	101,537.90	211	36	90%	19,260,623.51
23	1.51	103,369.99	211	37	90%	19,608,150.60
24	1.54	105,235.14	211	38	90%	19,961,948.26
25	1.56	107,133.94	211	39	90%	20,322,129.63
26	1.59	109,067.00	211	40	90%	20,688,809.89

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
27	1.62	111,034.94	211	41	90%	21,062,106.32
28	1.65	113,038.39	211	42	90%	22,336,554.50
29	1.68	115,077.98	211	43	94%	22,739,581.83
30	1.71	117,154.38	211	44	94%	23,149,881.15
31	1.74	119,268.24	211	45	94%	23,567,583.66
32	1.77	121,420.25	211	46	94%	23,992,822.94
33	1.80	123,611.08	211	47	94%	24,425,734.99
34	1.84	125,841.44	211	48	94%	24,866,458.24
35	1.87	128,112.05	211	49	94%	25,315,133.63
36	1.90	130,423.63	211	50	94%	25,771,904.65
37	1.94	132,776.91	211	51	94%	27,133,427.10
38	1.97	135,172.66	211	52	97%	27,623,006.31
39	2.01	137,611.63	211	53	97%	28,121,419.20
40	2.04	140,094.62	211	54	97%	28,628,825.15
41	2.08	142,622.40	211	55	97%	29,145,386.42
42	2.12	145,195.79	211	56	97%	29,671,268.22
43	2.16	147,815.62	211	57	97%	30,206,638.71
44	2.20	150,482.71	211	58	97%	30,751,669.10
45	2.24	153,197.93	211	59	97%	31,306,533.70
46	2.28	155,962.14	211	60	97%	32,694,110.24
47	2.32	158,776.23	211	61	99%	33,284,023.07
48	2.36	161,641.09	211	62	99%	33,884,579.93
49	2.40	164,557.65	211	63	99%	34,495,972.88
50	2.45	167,526.83	211	64	99%	35,118,397.44
51	2.49	170,549.58	211	65	99%	35,752,052.65

Fifth Batch

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
9	1.17	80,476.00	210	22	51%	8,618,980.02
10	1.20	81,928.06	210	23	51%	11,914,388.77
11	1.22	83,406.33	210	24	51%	12,129,364.82
12	1.24	84,911.26	210	25	69%	12,348,219.78
13	1.26	86,443.35	210	26	69%	12,571,023.62
14	1.28	88,003.08	210	27	69%	12,797,847.59
15	1.31	89,590.95	210	28	69%	13,028,764.25
16	1.33	91,207.48	210	29	69%	13,263,847.42
17	1.36	92,853.17	210	30	69%	13,503,172.29
18	1.38	94,528.56	210	31	69%	13,746,815.40
19	1.40	96,234.17	210	32	69%	18,168,049.58
20	1.43	97,970.56	210	33	69%	18,495,862.93
21	1.46	99,738.29	210	34	90%	18,829,591.13

Year of Operation	Factor	Annual Salary	No. of Students	Age	Employment Rate	Total Amount
	a	b	c		d	e = a x b x c x d
22	1.48	101,537.90	210	35	90%	19,169,340.93
23	1.51	103,369.99	210	36	90%	19,515,220.98
24	1.54	105,235.14	210	37	90%	19,867,341.87
25	1.56	107,133.94	210	38	90%	20,225,816.22
26	1.59	109,067.00	210	39	90%	20,590,758.66
27	1.62	111,034.94	210	40	90%	20,962,285.91
28	1.65	113,038.39	210	41	90%	22,230,694.05
29	1.68	115,077.98	210	42	90%	22,631,811.30
30	1.71	117,154.38	210	43	94%	23,040,166.07
31	1.74	119,268.24	210	44	94%	23,455,888.95
32	1.77	121,420.25	210	45	94%	23,879,112.88
33	1.80	123,611.08	210	46	94%	24,309,973.21
34	1.84	125,841.44	210	47	94%	24,748,607.72
35	1.87	128,112.05	210	48	94%	25,195,156.69
36	1.90	130,423.63	210	49	94%	25,649,762.92
37	1.94	132,776.91	210	50	94%	27,004,832.66
38	1.97	135,172.66	210	51	94%	27,492,091.59
39	2.01	137,611.63	210	52	97%	27,988,142.33
40	2.04	140,094.62	210	53	97%	28,493,143.51
41	2.08	142,622.40	210	54	97%	29,007,256.63
42	2.12	145,195.79	210	55	97%	29,530,646.10
43	2.16	147,815.62	210	56	97%	30,063,479.29
44	2.20	150,482.71	210	57	97%	30,605,926.60
45	2.24	153,197.93	210	58	97%	31,158,161.50
46	2.28	155,962.14	210	59	97%	32,539,161.85
47	2.32	158,776.23	210	60	97%	33,126,278.89
48	2.36	161,641.09	210	61	99%	33,723,989.51
49	2.40	164,557.65	210	62	99%	34,332,484.86
50	2.45	167,526.83	210	63	99%	34,951,959.54
51	2.49	170,549.58	210	64	99%	35,582,611.64
52	2.53	173,626.87	210	65	99%	36,224,642.85

Summary

Year	1st Batch	2nd Batch	3rd Batch	4th Batch	5th Batch	Total
5	8,138,624.58					8,138,629.58
6	8,285,473.02	8,285,473.02				16,570,952.04
7	8,434,971.10	8,434,971.10	8,118,164.68			24,988,113.88
8	11,660,025.29	11,660,025.29	8,264,643.95	8,506,535.97		37,018,371.85
9	11,870,411.76	11,870,411.76	11,424,574.70	8,660,022.78	8,618,980.02	52,444,401.03
10	12,084,594.32	12,084,594.32	11,630,712.85	11,971,123.95	11,914,388.77	59,685,414.22
11	12,302,641.46	12,302,641.46	11,840,570.42	12,187,123.70	12,129,364.82	60,762,341.88
12	12,524,622.92	12,524,622.92	12,054,214.54	12,407,020.82	12,348,219.78	61,858,700.97
13	12,750,609.67	12,750,609.67	12,271,713.53	12,630,885.63	12,571,023.62	62,974,842.11
14	12,980,673.99	12,980,673.99	12,493,136.94	12,858,789.72	12,797,847.59	64,111,122.23

15	13,214,889.45	13,214,889.45	12,718,555.57	13,090,805.98	13,028,764.25	65,267,904.70
16	13,453,330.95	13,453,330.95	12,948,041.53	13,327,008.60	13,263,847.42	66,445,559.46
17	17,780,175.02	17,780,175.02	13,181,668.19	13,567,473.11	13,503,172.29	71,728,563.38
18	18,100,989.79	18,100,989.79	17,421,140.41	13,812,276.43	13,746,815.40	81,182,211.82
19	18,427,593.15	18,427,593.15	17,735,476.97	18,254,564.10	18,168,049.58	91,013,276.96
20	18,760,089.54	18,760,089.54	18,055,485.24	18,583,938.46	18,495,862.93	92,655,465.70
21	19,098,585.29	19,098,585.29	18,381,267.54	18,919,255.85	18,829,591.13	94,327,285.11
22	19,443,188.66	19,443,188.66	18,712,928.06	19,260,623.51	19,169,340.93	96,029,269.82
23	19,794,009.85	19,794,009.85	19,050,572.86	19,608,150.60	19,515,220.98	97,761,964.12
24	20,151,161.04	20,151,161.04	19,394,309.92	19,961,948.26	19,867,341.87	99,525,922.12
25	20,514,756.45	20,514,756.45	19,744,249.16	20,322,129.63	20,225,816.22	101,321,707.90
26	21,756,085.01	21,756,085.01	20,100,502.50	20,688,809.89	20,590,758.66	104,021,068.42
27	22,148,638.70	22,148,638.70	21,316,764.95	21,062,106.32	20,962,285.91	107,638,434.57
28	22,548,275.39	22,548,275.39	21,701,391.81	22,336,554.50	22,230,694.05	111,365,191.15
29	22,955,122.89	22,955,122.89	22,092,958.65	22,739,581.83	22,631,811.30	113,374,597.57
30	23,369,311.30	23,369,311.30	22,491,590.69	23,149,881.15	23,040,166.07	115,420,260.52
31	23,790,973.08	23,790,973.08	22,897,415.40	23,567,583.66	23,455,888.95	117,502,834.17
32	24,220,243.07	24,220,243.07	23,310,562.58	23,992,822.94	23,879,112.88	119,622,984.53
33	24,657,258.54	24,657,258.54	23,731,164.32	24,425,734.99	24,309,973.21	121,781,389.61
34	25,102,159.26	25,102,159.26	24,159,355.16	24,866,458.24	24,748,607.72	123,978,739.64
35	26,428,299.25	26,428,299.25	24,595,272.01	25,315,133.63	25,195,156.69	127,088,949.09
36	26,905,155.56	26,905,155.56	25,894,633.29	25,771,904.65	25,649,762.92	131,126,611.99
37	27,390,615.98	27,390,615.98	26,361,860.45	27,133,427.10	27,004,832.66	135,281,352.17
38	27,884,835.76	27,884,835.76	26,837,517.98	27,623,006.31	27,492,091.59	137,722,287.40
39	28,387,972.94	28,387,972.94	27,321,757.99	28,121,419.20	27,988,142.33	140,207,265.39
40	28,900,188.42	28,900,188.42	27,814,735.33	28,628,825.15	28,493,143.51	142,737,080.83
41	29,421,646.01	29,421,646.01	28,316,607.66	29,145,386.42	29,007,256.63	145,312,542.74
42	29,952,512.47	29,952,512.47	28,827,535.47	29,671,268.22	29,530,646.10	147,934,474.73
43	30,492,957.56	30,492,957.56	29,347,682.16	30,206,638.71	30,063,479.29	150,603,715.28
44	31,844,474.57	31,844,474.57	29,877,214.06	30,751,669.10	30,605,926.60	154,122,438.44
45	32,419,057.08	32,419,057.08	31,201,439.92	31,306,533.70	31,158,161.50	158,504,249.28
46	33,004,007.02	33,004,007.02	31,764,419.90	32,694,110.24	32,539,161.85	163,005,706.03
47	33,599,511.44	33,599,511.44	32,337,557.96	33,284,023.07	33,126,278.89	165,946,882.80
48	34,205,760.79	34,205,760.79	32,921,037.38	33,884,579.93	33,723,989.51	168,941,128.40
49		34,822,948.93	33,515,044.75	34,495,972.88	34,332,484.86	137,166,451.42
50			34,119,770.02	35,118,397.44	34,951,959.54	104,190,127.00
51				35,752,052.65	35,582,611.64	71,334,664.29
52					36,224,642.85	36,224,642.85