BUSINESS CYCLE STAGES AND HUMAN CAPITAL COST – AN EMPIRICAL STUDY OF SERVICE SECTOR COMPANIES IN INDIA

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ABSTRACT

Service Sector in India today accounts for more than half of India's GDP. The share of services, industry in India's GDP is approximately is 55.1 per cent. Service industry has gained a great momentum lately in the decade after 1990's. Service sector covers a wide gamut of activities like trading, banking & finance, entertainment, real estate, transportation, security, management & technical consultancy among several others. India is one country that provides a wide array of professionals and talent pool to most of the global and national service based companies. The fuel for this sector is human capital and a country like India provides an extremely efficient and cheap fuel to this industry and hence a study of how human capital contributes in growth and development and in turn attainment of high profit level becomes essential. On the other hand co-integrating this study by studying the business cycle stage of the companies makes it more analytical. Business cycle is the economy wide fluctuation in production or revenues over several months or years and has three phases- growth, maturity and decline. Business cycle is important but difficult to study. A lot has been researched about it in the past about applicability and analysis of business cycle, but only for capital intensive industries. This concept has not been very keenly applied to non-capital intensive industries or one may say industries those comes under services sector. This research attempts to study companies from service sector under various industries type for their 'realized revenue' which is calculated on basis of 'human capital, bad debt and accounted revenue'. The basic kolder model used for calculating realized revenue in capital intensive industries is modified in this paper to make it appropriate for service sector. Further, a business cycle model is developed and applied to these companies on basis of realized and accounted revenue. The data is analyzed on the basis of Regression analysis, Pearson's' correlation test and paired samples t- test. The findings of this paper give deeper insight into business cycle fluctuations of service sector and impact of human capital investment on growth of this sector. The proposed model can be used as generalized measure to evaluate true value of companies across service sector.

KEYWORDS
Business cycle, growth rate, service sector, cost of human capital.

INTRODUCTION

The Indian service sector stands out for its size and dynamism with a contribution of 55.2 percent in gross domestic product (GDP) to the Indian economy and is growing annually near about at 10 percent. It contributes to about a quarter of total employment. The service industry has formed a backbone of major economic development that has taken place in the few decades. This sector emerged as the largest and fastest-growing in the world economy, making higher contributions to the global output and employment.

The economic liberalization has ushered in a rapid change in the service industry. As a result of it what is witnessed is India being transformed from agriculture-based economy to a service economy. The key service sector industries in India that have changed the face of Indian economy are IT and ITES, telecommunications, Media and entertainment, healthcare, consulting, retail, banking, hotel and tourism and so on.

This transformation in the economy has had positive effects in terms of creation of better working platform for professionals, creating better opportunities, creation of skilled talent pool, higher employment etc. And thereby it becomes extremely important to understand and analyze the effect that human capital has over growth and sustainability of the industries that fall under service sector. Because human capital measurement and accounting would provide a better insight as for service sector industries the key asset is the human capital on whose performance the business thrive.

Human capital is recently a very talked about concept and the aim of this paper lies in using this concept to understand the true value of companies along with business cycle model. The sector is highly competitive in nature, it becomes important to know about which part of life cycle or business cycle the company is moving in such that accordingly the frequent actions are taken.

This research would help in finding out the actual realized revenues of the companies along with what impact human capital has in revenue and profit. The concept of realized revenue has been well researched for capital intensive industries. This paper modifies one of the established models of capital accumulation and applies it to the service sector industries. This modification in the model serves the purpose of calculating realized revenue by calculating the realized human capital. Thus, it can be applied to service sector companies for calculating there realized revenues. The proposed model is further applied to business cycle of the company. The stages in the business cycle of the company are estimated with realized revenue. A comparison of this drawn with accounted revenue. Thereby this paper would attempt to help in creating a better understanding of the company's true position in the business cycle along with the impact human capital has and providing a better insight, a better picture of the company and it's true value which could in-turn be used as decisive tool for investors and professionals.

OBJECTIVE OF STUDY

The Primary objective of the research is to study the business cycle stages and do valuation of various companies in various sectors by quantifying the human capital employed and the changes in the cost of human capital that happen with changes in business cycle. This model helps the companies to analyze their business cycle through which realized revenue and accounted revenue can be compared at different stages of the cycle. This can be used as a tool to valuate companies and would help in finding where the company is placed in business cycle and not inflated place.

Thereby, the basic objectives of the study are-

1. To calculate the "Realized Revenue" for a company by making adjustments to the accounting revenue in terms of stock and human capital.
2. To explore the relationship if any between accounted revenue and realized revenue, realized revenue being calculated by making adjustments for stock and human capital.

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OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

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FINDINGS

RECOMMENDATIONS/SUGGESTIONS

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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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3. To calculate business cycle stages and to explore the difference if any in business cycle stage of company derived on basis of Accounting revenue and realized revenue.

This would also give the better picture of the company which would help investors to decide whether to invest in the company or not and appropriate decisions can be taken by company in many situations by having more accurate information about company itself and market by comparing business cycle results from realized revenue with accounting revenue which comprises of finding out the stage of business cycle in business cycle through realized revenue as well as accounted revenue. Identify the difference if any, in two stages of business cycle identified by realized revenue and accounted revenue for the company.

LITERATURE REVIEW

The business cycle has interested many researchers. Several models have been proposed for studying the same. Kaldor was one of the prominent researchers who worked on business cycle. Kaldor in his "Disequilibrium growth theory" has explained the capital accumulation as a concept is solely determined by savings decision as in neoclassical growth model. The increase flow of capital is the sum of workers' savings and capitalists' saving which has been explained through the model.

Another interesting research is the one by Marek Szydãlowski and Adam Krawiec (June 2002). In their paper titled "The Koldar-Kalecki Model of business cycle as two-dimensional dynamical system", they analyse the Kaldor model of business cycle and have introduce Kaleckis' idea of delay in investment in capital accumulation equation. This system is analysed in details by methods of quantitative analysis. In another research, James Kahn (2003) reformulates his argument in a business cycle accounting framework that apportions fluctuations between three types of "wedges" productive inefficiency, the consumption-leisure margin and inter-temporal inefficiency.

Sabastian Wende (2001) in paper titled- "Business Cycle Dynamics", relaxes the perfect foresight assumption implied by rational agent hypothesis. It is replaced by imperfect adaptive expectations. This model is extended with a delay between investment and capital accumulation. This paper also stimulates a non-equilibrium time differential wage adjustment in a model economy. The models show that the boom produced by a single positive technology shock that can be followed by equivalent of a recession. The models are solved using numerical methods for differential equations, which allow for non-linear dynamics, as opposed to usual log linearization.

In another study, D Little proposed a model "ADL Matrix" in which life cycle in portfolio management is compared to life cycle stages of a firm, dimensions like business strength and environmental assessment are used. Rober Lucas (2002) in his paper titled –"Methods and problem in Business Cycle", have analysed Keynesian and neo classical theories of business cycle and assessed their practicality. Similarly Sergio Roberto (2003), has reviewed the contribution of real business cycle models to understand economic fluctuations and discussed open issues in business cycle.

A paper by Xavier Gabaix named "The Granular Origins of Aggregate fluctuations" explained the concept that individual firm shocks average out in aggregate. This paper proposes idiosyncratic firm level fluctuations can explain an important part of aggregate shocks and provide a micro foundation for aggregate productivity shocks and show that this argument breaks down if the distribution of the firm sizes it fat-tailed as documented empirically. This "granular" hypothesis suggests new direction for macro-economic research, in particular that macro-economic questions can be clarified by looking at the behavior of large firms. This paper's ideas and analytical results may also be useful to think about the fluctuations of other economic aggregates, such as exports or trade balance.

A more empirical research paper analyses the business cycle is given by Yahya sharahili and Yao Liu titled "Empirical analysis II: Business cycles and Inward FDI in China". This paper analyses how the business cycle development and inward FDI react to each other. By constructing an endogenous growth model, they after processing correlation analysis and testing coefficient significance of each variable, found out original momentum of Chinese economic growth and explored whether there exist some long term relationship through Johansen co-integration test.

"The plucking model of business cycle fluctuation" by Milton Friedman is based on the business fluctuation model which he created 20 years back that stressed upon occasional events producing contraction and subsequent revival rather than self-generating cyclic process. This research further does the empirical work for US and other countries and applies there.

Jean Frnacois Bacmann shows few more ideas about business cycle, in his paper on "Ideas business cycle can generate for business" focus was on how business cycle applicability impacts investment strategies. This paper documents profitability of momentum strategies in countries from G-7 and explores some conjectures about links existing between return of these strategies, business cycle and industries.

All these researches have provided a basis for understanding fluctuations in business cycle. But in an economy like India, which is service oriented and dominated by human capital, there is no research that guides the incorporation of "Human Capital" in the calculation of stages of business cycle. The present paper focuses on modifying the accounting revenue to realized revenue to incorporate "Human Capital" and see its impact on business cycle of a company.

RESEARCH METHODOLOGY

The paper aims at three basic objectives - calculate the "Realized Revenue" for a company by making adjustments to the accounting revenue in terms of stock and human capital, study relationship if any between "Accounted revenue" and "Realized revenue" and to calculate business cycle stages and to explore the difference if any in business cycle stage of company derived on basis of Accounting revenue and realized revenue.

Analyzing the smallest details becomes crucial, which may help companies to measure difference between accounted and realized revenue and further help in comprehending the data and figures in a better way. The study would pave a way for investors and portfolio managers to understand the actual position of the company in much better and company itself can analyze its true position and understand its position in the life cycle in much comprehensive manner.

Human capital is one resource which is extremely important and its effect is not taken in to account so well as it should be, therefore this study helps in understanding the significant role human capital plays in affecting the revenue in all.

The present study is focused on sectors comprising service sector in India and sectors namely -IT and ITES (including consultancy), Healthcare, Media and Entertainment, Telecom, Retail, Banking, Hotel. A sample of 19 companies is taken which falls under these sectors and are majors in the particular sector. The data was secondary data collected from P&L accounts, balance sheets and Annual Reports. Time frame for present study was taken as 2 years, 2009 and 2010.

Non- probability convenience technique is used in the study because different sectors were important to be covered and sample was drawn from the data that was available for particular sectors.

VARIABLES DESCRIPTION

The variables for which data was collected were Revenue, Stock, Bad-debt and human capital. Brief description about the company's has been mentioned before.

There are two major variables used in the research are:

- AR = "Accounted revenue" taken from the balance sheet of the company
- RR = "Realized Revenue" which is calculated by modifying the accounting revenue.
- Sr = Revenue Realization
- HCr = human capital realization
- Ir = stock realization

The dependent variables are –

- Realized revenue (including realized human capital only)
- Realized revenue (including realized human capital and realized stock)
- Human capital value added

The explanatory variables are-

- Accounted revenue
- Revenue realization

- Stock realization
- Human capital realization

THE MODEL

According to Kaldor model of capital accumulation, the flow of output at time t, X' is determined by the flow of labor force at time t, Lt, and the stock of capital, Kt. The production function,F, is assumed to be twice differentiable and homogenous of degree one,

Yt= F(Kt,Lt)

Capital accumulation is solely determined by the savings decision as in the neoclassical growth model. In the Kaldor model,the increase in flow of capital is the sum of workers' saving and capitalists' saving:

K* = Sw* WL +Sk(Y-WL) ---------- equation 1

where,

K* = capitalist accumulation

Sw = Wage saving rate

W = wage rate

L = labor force

Sk = Capital saving rate

This model is good for capital intensive companies. But, the service sector companies are not capital intensive, they are human intensive. Human capital is the biggest capital for the. The model had various equations for its different scenarios like Kt/Lt = K(Wd) in full employment and underemployment regime and Kt/Lt = Kt in over employment regime and such type of modifications were not necessary in many cases. Thereby for overcoming certain challenges a new model was tried and created following the similar lines as Kaldor model.

REALIZED REVENUE MODEL

The proposed model introduced concept of realized revenue, which meant revenue that is cashed out. This meant to convey that there is significant difference between what the company receives as revenue in terms of cash and what it has accounted. This is the basic assumption of this model that in practical scene what books shows is not the same. Therefore this term is introduced around which the model is built.

The model aims to calculate realized revenue by taking few assumptions-

- There is difference between cashed out and accounted revenue.
- The companies generally do not account a part of stock that is being realized.
- The company follows the realization trend as it had in previous years.
- Human capital and the value addition by human capital is not accounted by companies.

Income is basically affected by capital and labor, So,

R*(realized revenue) = f (accounting revenue, human capital,stock)

The model can be broken in three parts of understanding-

REALIZED SALES

Realized sales is the actual sales which is being cashed out. Generally cashed out sales is not realized by companies. The assumption also persists that accounted and actual numbers are different. The Realized Sales rate is calculated as follows:-

Realized sales rate is denoted as "Sr". Sr shows how much percentage of sales is realized in current year and this depends on previous year debt and revenue figure at year end.

$Sr = (R_{n-1} – \text{Bad debt}_{n-1})/ R_{n-1}$ ---------- equation 2

Where, n stands for current year. Previous years' bad debt is deducted from previous years' revenue and divided by previous years' revenue. Bad debt is very important factor to arrive at Sr. Increase in previous years' bad debts means the company is unable to collect funds and this would affect current years' realization. Percentage is calculated on previous years' end amounts assuming company follows similar pattern of realization during current year.

Now, Realized sales = $Sr * R_n$

Rn is the revenue for the current year and Sr is the realized sales rate.

REALIZED HUMAN CAPITAL

Human capital is an important asset for any type of IT, Consultancy, Telecom, Healthcare, Media, Retail, Banking, Insurance or any type of service based industry. It is the Human capital that is not solely accounted by companies and is not considered in profit. Human capital accounting is quintessential to truly evaluate a company and in order to understand the nature of realized revenue, human capital calculation as a part of accounted sales is important to know in order to reach to realized revenue.

Realized human capital is determined as HC_n and is calculated as percent of revenue. Now,

$HC_n = (HC_n – HC_{n-1})/ R_{n-1}$ ---------- equation 3

Where, n = current year.

Increase in human capital indicates better efficiency of company.

Realized human capital = $HC_n * R_n$

Human capital is calculated in two parts-

Human capital value added = operating expenses – employee cost / total employees

Human capital return on investment = profit / human capital cost

REALIZED STOCK

Generally for companies that provides services of various kinds, high stock maintenance is not very essential, since the sector is not capital intensive, the dependency is mostly on human capital but again for industries like healthcare, media and retail certain level of stock is important to be maintained.

Realized stock is the stock which is not being sold but could not be formed part of sales, so its' inclusion is important to know true value of cashed revenue.

Stock realization rate is calculated and then is realized stock finally calculated.

Ir_n is used to denote realized stock rate. Ir depends upon last year stock amount at the end of the year. Change in stock is not a deliberate change by the company but some part of it is due to stocks that are being sold.

$Ir_n = (I_{n-}I_{n-1})/ R_{n-1}$ ---------- equation 4

This is basically a change in stock as percentage of previous year revenue. Reduction in sales in any year for company is not solely affected by increasing stock sales rate but also changes in human capital but again calculation of stock realization is important.

Realized stock = $Ir_n * \text{Stock}_n$

Finally,

$R^* = Sr * R_n + Ir * S_n + HC_n *$ human capital ---------- equation 5

Finally R* can be calculated, now it has to be checked whether R* shows the same result when applied from accounted revenue or different. For that purpose the revenues are taken and some other necessary accounting figures from the balance sheet, P&L account and annual reports of leading companies in various sectors and then figures are calculated to business cycle model.

MODEL 2: BUSINESS CYCLE APPLICABILITY

For application of our calculated figure we have taken various concepts which will be used to compare. An important model is Business Cycle.

Business cycle is an economy wide fluctuation in production or revenues over several months or years. The reason why we call it a cycle is that it moves in a cyclic manner i.e. coming back to the original position from where it had started. Every company moves in cyclical manner and strategic decision of companies depends upon in which part of the cycle the business moving. Though there is number of ways business cycle is divided in to stages to simplify we have divided business cycle in to three stages:

GROWTH, BOOM AND RECESSION

Every company moves through these stages in the lifetime and as they reach the end stage the cycle restarts which means that after reaching Recession Company back to growth.

The Growth Stage of a business cycle is characterized by high production, Machinery is under-utilized and Sales are very high even the change in revenue is very high. The Maturity Stage of a business is characterized by high production, Machinery is fully utilized, Sales are high but the change in sales and revenue falls. The recession stage is characterized by over utilization of resources and decline in both sales and revenue.

Since we have only revenue as our given indicator thus we will decide about the stage of the company through this only. Thus,

- If average change in revenue is > 15% then company is in growth stage.
- If average change in revenue is < 15% but > 5% then company is in maturity stage.
- If average change in revenue is < 5% then company is in maturity stage.

The results from both the variables Accounting Return and Relaized Return are copmared by putting values in this business cycle stage criterion.

Accounting revenue = F ($R^*_{Stock+HC}$, $R^*_{Only\ HC}$, HC value added, time)

The regression equation would be as follows-

$AR = \beta_0 + \beta_1 R^*_{SH} + \beta_2 R^*_{H} + \beta_3 HC + \alpha_1 t + u_i$ ---------- equation 6

Instead of applying this equation as it is for regression analysis, the equation can be broken in to three different parts and primary reason for this is high probability of existence of mullticolinearity amongst the variables. So, now the equations would be as follows-

$AR = \beta_0 + \beta_1 R^*_{SH} + u_1$ ---------- equation 6 a

$AR = \beta_0 + \beta_1 R^*_{H} + \alpha_1 t + u_2$ ---------- equation 6 b

$AR = \beta_0 + \beta_1 R^*_{HS} + \alpha_1 t + u_3$ ---------- equation 6 c

Regression analysis would be used to establish relationships amongst various variables.

Relationship between accounted revenue and Realized revenue (human capital only), accounted revenue and realized revenue (stock +human capital), accounted revenue and human capital value added would be established.

Also,

The converse would be applied by formulating the following equation-

Realized revenue = f (accounted revenue)

Since realized revenue is deduced from accounted revenue it can be taken in to account that realized revenue depends on the accounted revenue, change in accounted revenue would lead to change in accounted revenue.

Initially the cause and effect relationship was established by making accounting revenue dependent over realized revenue (stock+ human capital), realized revenue (only human capital) ,value added by human capital and time but the converse cause and effect relationship is important to be established to find out whether the proposed model actually holds good or not and which relationship is a better indicator when applied to business cycle model.

So, regression equation would be-

$RR = \beta_0 + \beta_1 AR + \beta_2 H + u_i$ ---------- equation 7

And this cause and effect relationship would be established.

A basic Paired samples t-test is applied to compare difference if any between Accounting revenue and Realized revenue. Further, a Pearson correlation is applied to see the direction of relationship between the two variables. Lastly, the regression analysis is applied according to equations 6 and 7. A Jarque Bera test is applied on the residuals to check the normality of the residuals which would establish the appropriateness of the model.

FINDINGS AND DISCUSSIONS

This research attempts to study companies from service sector under various industries type for their 'realized revenue' which is calculated on basis of 'human capital, bad debt and accounted revenue'. The basic kolder model used for calculating realized revenue in capital intensive industries is modified in this paper to make it appropriate for service sector. Further, a business cycle model is developed and applied to these companies on basis of realized and accounted revenue. The data is analyzed on the basis of Regression analysis, Pearson's' correlation test and paired samples t- test.

TABLE 5.1: DESCRIPTIVE STATISTICS

	Minimum	Maximum	Mean	Std. Dev.	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Accounting Revenue	147.94	31092.50	8837.74	9214.62	0.80	0.38	-0.68	0.75
Realized Revenue with Human Capital & Stock Adjustment	135.59	37491.30	10125.03	11398.37	1.09	0.38	0.13	0.75
Realized Revenue with Human Capital Adjustment	135.59	37491.30	10125.38	11398.29	1.09	0.38	0.13	0.75
Value Added by Human Capital	1.00	175.31	55.18	56.08	0.88	0.38	-0.52	0.75

The first step in assessing the proposed model is calculation of realized revenue i.e. R^*_{HS} and R^*_{H} for the sample along with added human capital for the period of two years, this was done exactly the way pointed in research methodology by applying formulas to deduce the results.

Further after R^*_{HS},R^*_{H} and value added by human capital were calculated, now relationship amongst accounted revenue, realized revenue (stock+human capital),realized revenue (human capital) and value added by human capital are deduced.

TABLE 5.2 PAIRED SAMPLES TEST

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Accounting Revenue - Realized Revenue with Human Capital & Stock Adjustment	-1287.29	4660.04	755.96	-2819.01	244.43	-2.30	37.00	0.01
Accounting Revenue - Realized Revenue with Human Capital Adjustment	-1287.64	4660.02	755.95	-2819.35	244.07	-2.30	37.00	0.01

Table 5.1 shows that the mean value of accounting revenue is lesser that the mean value for realized returns. Also, the skewness and kurtosis are well within acceptable range indicating the normal distribution of data.

TABLE 5.3: CORRELATIONS COEFFICIENTS					
		Accounting Revenue	Realised Revenue with Human Capital & Stock Adjustment	Realised Revenue with Human Capital Adjustment	Value Added by Human Capital
Accounting Revenue	Pearson Correlation	1.00	.919**	.919**	.922**
	Sig. (1-tailed)		0.00	0.00	0.00
Realised Revenue with Human Capital & Stock Adjustment	Pearson Correlation	.919**	1.00	1.000**	.923**
	Sig. (1-tailed)	0.00		0.00	0.00
Realised Revenue with Human Capital Adjustment	Pearson Correlation	.919**	1.000**	1.00	.923**
	Sig. (1-tailed)	0.00	0.00		0.00
Value Added by Human Capital	Pearson Correlation	.922**	.923**	.923**	1.00
	Sig. (1-tailed)	0.00	0.00	0.00	
**. Correlation is significant at the 0.01 level (1-tailed).					

In order to test the difference between Accounted revenue and realized revenue paired samples t- test was applied. Since data seemed to be normally distributed which meant R and R* were normally distributed, further paired samples test is being used to see what kind of relationship persists amongst accounted revenue and realized revenue(stock+ human capital), accounted revenue and realized revenue (human capital), accounted revenue and value added by human capital and accounted revenue and time factor.

The first paired sample test was applied between Accounted revenue and realized revenue (Stock and human capital) and at 95% confidence level it was significant, the p value is also less and at 10% this is significant indicating that there is difference between accounted and realized revenue. The second paired sample test was applied between accounted revenue and realized revenue (with human capital) and it was significant as well. Value added by human capital and time factor was excluded.

Next step was to establish correlation among Accounted revenue, Realized revenue (stock and human capital), Realized revenue (Human capital) and value added by human capital. (Table 5.3). The results for Pearson correlation test shows that accounting revenue is positively correlated to the three variables chosen, directionality is single and results are significant at 0.01 level. This means that as accounted revenue increases or decreases, Realized revenue (human capital) and realized revenue (human capital and stock) are also expected to increase or decrease.

The next step was to establish cause and effect relationship is any among accounted revenue, realized revenue (human capital) and realized revenue (human capital and stock). The regressions analysis for Realized Revenue as dependent variable and Human Capital Value and Accounting Revenue as independent variable was run. The results are summarized in table 5.4

TABLE 5.4 :- REGRESSION ANALYSIS FOR REALIZED REVENUE, ACCOUNTING REVENUE AND HUMAN CAPITAL VALUE									
Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R Square	Adjusted R Square	F value for Regression	Sig.
	B	Std. Error	Beta						
(Constant)	-494.85	922.42		-0.54	0.60	0.88	0.87	132.11	0.00
Accounting Revenue	0.56	0.19	0.46	3.04	0.00				
Human Capital	102.36	30.41	0.50	3.37	0.00				
Dependent Variable: Realized Revenue Adjusted for Stock and Human Capital									

Adjusted R^2 value of 0.87 depicts the fitness of model is high and is acceptable. Overall F value of the regression was significant at 132.11. Regression analysis results depict that constant beta is insignificant hence other factors doesn't affect realized revenue accept for those taken in the model, beta value for value added by human capital is 0.504 and 0.455 for accounted revenue. The values are positive and significant, which means one unit change in realized revenue means 0.455 unit change in accounted revenue and 0.504 unit change in value added by human capital.

From equation 7 model was described as-

$RR = \beta_0 + \beta_1 AR + \beta_2 H + u_i$

And finally the proposed model was-

$RR = 0.46\ AR + 0.50\ H + u_i$

The residuals of the regression were saved and tested for normality. The results of residual analysis depict that JB value is around 2 and p-value is around 0.2. Both values are in consistence to what is required and hence null hypothesis can be accepted stating that variable are normally distributed and the model can be accepted, statistically it holds good and model can be validated.

The further analysis was done for the business cycle.

THE BUSINESS CYCLE MODEL

TABLE 5.5:- DIFFERENCE IN STAGES AS PER ACCOUNTING AND REALIZED REVENUE				
Company	**Accounted revenue value**	**stage**	**Realized revenue value**	**Stage**
1	8.5%	Maturity	8%	Maturity
2	2.1%	Decline	1.616%	Decline
3	2.04%	Decline	1.55%	Decline
4	5%	Maturity	4.51%	Decline
5	9.6%	maturity	9.11%	Maturity
6	13.66%	Maturity	13.17%	Maturity
7	13.13%	Maturity	12.64%	Maturity
8	33.7%	Growth	33.21%	Growth
9	31.2%	Growth	30.71%	Growth
10	13.61%	Maturity	13.12%	Maturity
11	5.198%	Maturity	4.70%	Decline
12	23.9%	Growth	23.41%	Growth
13	18.39%	Growth	17.90%	Growth
14	15.26%	Growth	14.77%	Maturity
15	20.85%	Growth	20.36%	Growth
16	28.39%	Growth	27.09%	Growth
17	11.15%	Maturity	10.66%	Maturity
18	15.63%	Growth	15.14%	Growth
19	16.4%	growth	15.91%	Growth

As mentioned in the previous section, the three stages of the business cycle are identified as follows: -
Growth stages : the average growth in revenue is >15%
Maturity stage : the average growth in revenue is between 5-15%
Decline stage : the average growth in revenue is <5%
Table 5.5 shows the stages in which the companies taken in the sample lie. The stages are identified according to the accounted revenue from profit and loss statement of the company and the stage is also identified according to the realized revenue for the company which is calculated in the previous sections by modifying for human capital.
The table depicts that average change in value of accounted revenue is more than average change in realized revenue. For most cases it shows similar results but yet for some since realized revenue average is less it leads to assessment of business cycle stage for the company as different. These changes are due to factors like human capital and stock adjustments. In many cases companies as per accounted revenue are on verge of maturity still growing but as per realized revenue they have entered maturity. In few cases the company is supposed to be still in maturity but as per realized revenue has reached decline and likewise.
So, this business cycle model indicates the actual position of the company as per realized revenue, actual revenue average value is not always correct at times companies perceive to be on verge of one stage but they do not realize that they have actually entered the other stage, business cycle model reveals the true stage in business cycle for the company in lieu of realized revenue.

CONCLUSION

The need for this research was the difference between accounted and actual scenarios, which was the basic assumption as well. Various tests were applied to check the reliability, validity of the model and relationships were deduced amongst accounted and realized revenue along with value added by human capital. The research shows that human capital plays an important role in determining the realized revenue. For most companies realized revenue (stock+ human capital) is same as realized revenue (human capital only) because of the fact that the service sector industries are not much capital intensive and there business is through human resource, there stock, there assets are human capital and thereby the two are same expect for healthcare, retail and media production where equipment, machinery and other stock is important. As per regression analysis results I unit change in accounted revenue means 0.484 unit change in realized revenue and 0.474 unit change in human capital, which indicates that means 1% growth or decline in accounted revenue is actually only 0.484 % change as per realized revenue and hence business cycle valuation that is done through accounted revenue leads the business cycle valuation through realized revenue.
Business cycle and realized revenue model proved the fact that accounted and realized revenues are different as per results derived.
The project would not only help companies but individuals to evaluate true position of a company as more accurate figures close to practical situations are available. The companies can take better decisions and investors can choose better companies. Since this is applied to a mix of companies that falls under various companies this can be used as a generalized tool for evaluation and application of this project would give a clearer picture of the reality.

REFERENCES

1. Arjun Singh Sirari, Narendra Singh Bohra, “Foreign direct investment in Indian service sector (A study post liberalization)”, Int. J. Eco. Res., 2011, 2(2), 10-18
2. Barry Eichengreen, Poonam Gupta, “The Service Sector as India's Road to Economic Growth”, NBER Working Paper No. 16757,Issued in February 2011,NBER Program(s): IFM
3. Marek Szydlowski and Adam Krawiec, “The Kaldor-Kalecki Model of Business cycle as a two dimensional dynamical system”, Journal of Non-linear Mathematical physics 2001, V.8.supplement,226-271
4. Milton Freidman, “Plucking model of business fluctuation revisited”, The Hoonver institution Stanford University, December 1988, pp. 1-10
5. Oberai.A.S and Chadha.G.K (Ed.), “Job Creation in Urban Informal Sector in India: Issues and Policy Options, International Labour Organisation, 2001.
6. Raipuria Kalyan, “What Size the ‘New’ Economy? A Conduit Approach, Economic and Political”, Weekly, vol 37 pp 1062-1067, March 2002.
7. Robert E Lucas, Jr. “Methods and problems in Business cycle theory”, journal of money, credit, banking, November 2003, Vol. 12 no.4
8. Rubina Verma, “India’s Service Sector Growth - A “New” Revolution”, DEGIT, Dynamics, Economic Growth, and International Trade in its series DEGIT Conference Papers with number c011_020, June 2006
9. Xavier Gabaix, “The granular origins of aggregate fluctuations”, NYU Stern and NBER, August 17,2009

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