

## Supply creates its own demand: a closer look at say's law; Evidence from the labor market in Bangladesh

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**ABSTRACT:** Demand and supply matching theory is commonly known in economics. Generally, demand came from the customer/user side and supply came from the seller/producer side where price plays an important role to set the level/amount of product that the buyer and seller want to transact at the same point. In this matching theory, the buyer wants more goods at a lower possible price and the seller wants to sell more when gets a higher rate. Related to demand and supply theories in economics, there is a well-established one known as Says law which is a little bit different from the traditional view. Say's observation was about more supply may create more demand in the market somehow. Following this law, this paper has tried to analyze the labor market scenario in Bangladesh. All data have been collected from official records. SPSS software has been used to analyze the data to demonstrate Say's law reliability in the context of Bangladesh labor market.

**KEY WORD:** Say's law, labor market in Bangladesh, wage, search-matching theory

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### I. INTRODUCTION

Demand and Supply are very common issues in today's business world. According to basic economics principles, demand and supply lead the market where price plays vital role. The point of goods' amount and price rate, the seller and the buyer make a transaction is called equilibrium point in demand-supply matching theory which refers to a suitable zone for both parties to get product or money. There are few laws are supplemented in this area. Say's law is one of the world's famous laws in economics where he recommended the power of supply to create its own demand. A long time has been passed the law was introduced but even today, the discussion is going on about it around the globe.

It is assumed that in the long run, supply may create its own demand and so it will have a no unemployment situation in the market. It can be easy for the common market as thought but in reality, it is very much complex in the case of the labor market as human behavior, government regulations etc. are involved. However labor market in Bangladesh is much more different than any other nation as political unrest, labor involvement with political parties, underemployment, hidden employment, etc. are very common in the context of this developing country.

A ten percent increase in labor supply should bring about a ten percent increase in employment eventually. This is the main point of this labor market theory, stated by great economics Jean-Baptiste Say. It is about two hundred years ago, the concept has been discussed and in recent years got more accepted in populous countries like Bangladesh. Traditionally, the Keynesian view was about wage adjustment and aggregate demand that is considered as the most important determinants of employment.

In contrast, search-matching theory predicts an increase in supply to bring about more jobs even if there is no adjustment of wages as Say's idea. As predicted by bargaining and efficiency wage models, wages and demand have important effects on job creation (employment). Mostly the search-matching literature typically takes the product market to be perfectly competitive; it distracts attention from the important role of aggregate demand. However, reducing unemployment is one of the main concerns for any developing economy. This research has attempted to justify Say's concept with evidence from the labor market in Bangladesh.

### II. LITERATURES REVIEW

Jean-Baptiste Say (1803) was the first economist to establish that the value of an economic good is determined by its supply and demand. By studying the interrelationship between supply and demand, Say had postulated his famous 'Law of Markets' that supply leads the market. According to Keynesian thought, wages are sticky in the labor market. Employment is determined by labor demand as such more the labor supply

increases employment but if the wage rate goes down the labor demand increases. Salop (1979) had found the presence of efficiency wage and bargaining theories of unemployment in Keynesian vision.

In recent years, the Search-matching theory has just been added in the labor economics arena. Based on Say's recommendation, unemployment has been considered an as essential element for job creation (employment). According to search-matching theory, unemployment arises because it takes time for workers and firms to find each other (Mortensen and Pissarides, 1994; Pissarides, 2000).

Two theories represent different predictions regarding employment options. Demand-oriented models (traditional view) point to wages and aggregate demand as key factors, while search-matching theory (as Say's law) predicts that labor supply (unemployment) should have a direct effect on job creation (employment). To compare the relevance of the two theories, a comparison had formulated between labor forces and employment based on labor market data from 2001 to 2020 in Bangladesh.

Carlsson et. al. (2006) found no relationship between high unemployment and positive effect on job creation. The researchers stated that supply does not create own its demand in the case of the labor market and evidence found in favor of it. Labor markets are very complex where different firms hire from different places at different prices, not anything or everything is the same.

A large number of studies have estimated 'matching functions' and found a positive effect of unemployment on hiring (Petrongolo and Pissarides, 2001). Say's idea is like an increase in labor supply will force firms to open more vacancies and recruitment (employment). This paper has tried to disclose Say's concept empirically that how the supply can help to increase the demand in the labor market in Bangladesh.

### III. METHODOLOGY

#### III.I Data Source

Secondary data has been collected from World Bank and other official records for the fiscal years 2001 to 2020 and have been used in this study.

#### III.II Data Analysis Techniques

The secondary data have been analyzed in SPSS 16.00 version and multiple linear regression method had been used to analyze some demographic and macroeconomic factors. In this study, only the tables are prepared to explain the scenario.

#### III.III Multiple Linear Regression

The multiple linear regression model has been applied to determine the relationship between a dependent variable and one or more independent variables. The general form of the regression model is:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \beta_k x_k + \varepsilon$$

Where  $Y$  is the dependent variable,  $\beta_0$  is the intercept,  $x_1$  to  $x_k$  indicate independent variables,  $\beta_1$  to  $\beta_k$  is the change in  $Y$  for each one increment change in the independent variables, and  $\varepsilon$  is the disturbances.

Therefore, the ordinary least square fitted model from (1) is given by

$$\hat{y} = \hat{\beta}_0 + \hat{\beta}_1 x_1 + \hat{\beta}_2 x_2 + \hat{\beta}_3 x_3 + \dots + \hat{\beta}_k x_k$$

$\hat{y}$  is the predicted value of the dependent variable  $Y$ ,  $\hat{\beta}_0$  is the intercept,  $x_1$  to  $x_k$  are the independent variables,  $\hat{\beta}_1$  to  $\hat{\beta}_k$  is the estimated value of  $\beta_1$  to  $\beta_k$ .

### IV. RESULT AND DISCUSSION

Say's law may have exertion when market forces work. That means the wage rate should be lower due to the higher supply of labor. But it may not happen always due to the influence of collective bargaining power, minimum wage law, efficiency wage law, and lower labor mobility in Bangladesh.

Characteristics of the labor market in Bangladesh are unique and far away from any other developing nation. It is an employer market because of an imbalance between the numbers of labor supply and labor demand. Employees are always dominated due to fewer job vacancies at the expected wage rate. Job security is less due to overpopulation. Lower wage paid to compare to other developing nations or neighbors'. Political instability is present and has an impact on the labor market.

Labor with lower efficiency is majority due to shortage of training centers, government policies, and trade union's support. Though the market force sometimes fails, unemployment rates are found more or less near four to six percent for the last twenty years (see Table 01). So the Say's law is not invalid in the context of the Bangladesh labor market.

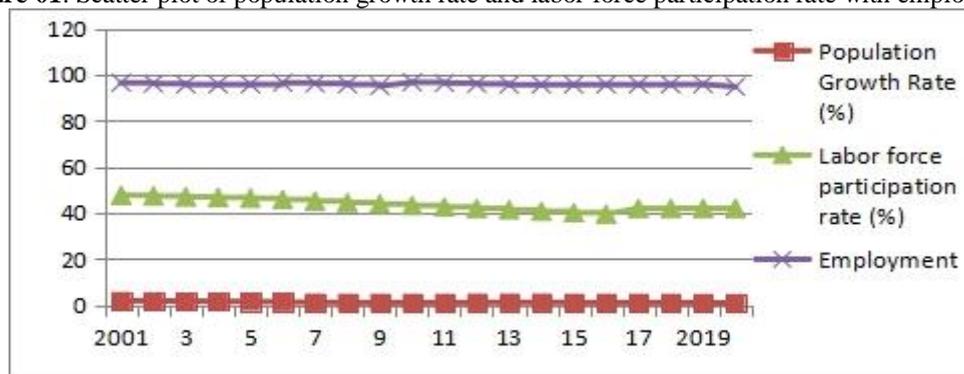
**Table 01:** Population Data of Bangladesh (2001-2020)

Year	Population in Million	Population Growth Rate (%)	Labor force in Million	Labor force participation rate (%)	Unemployment rate %	Employment Rate (%)
2001	12.7	1.9	6.05	47.62	3.59	96.41
2002	13.0	1.8	6.15	47.33	3.96	96.04
2003	13.2	1.7	6.20	46.98	4.32	95.68
2004	13.4	1.6	6.25	46.66	4.30	95.7
2005	13.6	1.5	6.31	46.37	4.25	95.75
2006	13.9	1.3	6.36	45.77	3.59	96.41
2007	14.0	1.2	6.32	45.13	3.91	96.09
2008	14.2	1.1	6.32	44.49	4.29	95.71
2009	14.4	1.1	6.31	43.85	5.00	95
2010	14.5	1.1	6.27	43.21	3.38	96.62
2011	14.7	1.1	6.26	42.58	3.71	96.29
2012	14.9	1.2	6.25	41.96	4.06	95.94
2013	15.1	1.2	6.24	41.34	4.43	95.57
2014	15.2	1.2	6.19	40.72	4.39	95.61
2015	15.4	1.1	6.18	40.11	4.38	95.62
2016	15.6	1.1	6.16	39.51	4.35	95.65
2017	15.7	1.1	6.59	41.95	4.37	95.63
2018	16.0	1.1	6.72	42.0	4.29	95.71
2019	16.2	1.0	6.80	41.97	4.22	95.78
2020	16.5	1.0	6.93	41.98	5.30	94.7

Source: BBS, 2021; WB, 2021; WPR, 2021

#### IV.I Graphical Analysis

**Figure 01:** Scatter plot of population growth rate and labor force participation rate with employment



Source: BBS, 2021; WB, 2021; WPR, 2021

Figure 01 shows that population growth rate and employment rate continue to maintain so far equality in years over the counted period where labor force participation rate become lower in the middle of the total covered period and afterward again it came back to the same level in pace with other variables.

#### IV.II Correlation Analysis

**Table 02:** Correlation among population growth rate and labor force participation rate with employment rate

Factors	Pearson r	P value
Population growth rate	.342	.070
Labor Force Participation Rate	.325	.081

Source: Authors calculation, 2021

From the above table, it is clear that Population growth rate and Labor Force Participation Rate have positive linear relationship with Employment Rate. Their relationship is not statistically significant at 5% level of significance.

#### IV.III Multiple Linear Regression Models For Employment Rate

**Table 03:** Analysis of variance

Sources of Variation	Df	SS	MS	F Value	P Value
Regression	.479	2	.239	1.196	.327 <sup>a</sup>
Residual	3.405	17	.200		
Total	3.884	19			

Source: Authors calculation, 2021

From the above table, it is found that population growth rate and labor force participation rate are not jointly significant with employment rate at 5% level of significance.

**Table 04:** Testing individual significance of the regression model

Sources of Variation	Standardized Coefficients	Std. Error	t value	P value	95% CI	
					Lower	Upper
Intercept	93.73	2.419	38.74	.000	88.627	98.83
Population Growth Rate	0.041	.070	.583	.567	-.107	.188
Labor Force Participation Rate	0.228	.650	.350	.730	-1.144	1.599

$$R = 0.351, R^2 = 0.123 \text{ and } R^2_{\text{adj}} = 0.020$$

Source: Authors calculation, 2021

From the above table, the estimated model for Employment Rate (ER) is,

$$\widehat{ER} = 93.73 + 0.041 \text{Population Growth Rate} + 0.228 \text{Labor Force Participation Rate}$$

Population Growth Rate is positively associated with Employment Rate and the coefficient 0.041 indicates that one standard deviation change in Population Growth Rate would lead to 0.041 standard deviation increase in Employment Rate. Labor Force Participation Rate is also positively associated with employment rate.

All the independent variables (Population Growth Rate and Labor Force Participation Rate) are statistically insignificant at a 5% level of significance. That means Population Growth Rate and Labor Force Participation Rate does not individually influence FDI. Adjusted R-square value 0.020 indicates that 2% of the total variation of employment rate is explained by the Population Growth Rate and Labor Force Participation Rate, i.e., this model is on below-average good enough in predicting the dependent variable employment rate. Finally, it may be summarized that the employment rate is increasing with the increasing trend of population and labor force participation but not to the same extent. The reason for working here may be the technological advancement for which automation has minimized the number of required workforce in today's high-tech job market. A further study may be conducted in this regard to find out whether this factor affects the employment rate or not.

#### v. CONCLUDING REMARKS

Any labor market theory, which implies some mean reversion in unemployment, implies that hiring tends to be high when unemployment is high. In a regression of hiring on unemployment, the expectation is a positive coefficient, independently of which is the correct theory of the labor market. Vacancies are a very imperfect measure of job openings, so the coefficient on unemployment is likely to remain positive even if it includes vacancies in the regression.

Labor market theories vary from each other because of wage changes, fiscal and monetary policy, exchange rate changes, or because high unemployment by itself induces firms to create more vacancies (Blanchard and Diamond, 1989). Nonetheless, the tendency is that higher wages help to supply more labor in the market. Firms can hire as their wish from unemployed workers available in the market. That means high unemployment should induce firms to open more vacancies that to be filled as a sequence. In the following, these theories traditional or recent ones do not fit always to fix the labor market. However this paper has tried to investigate the labor market scenario in Bangladesh and after analyzing about twenty years of related data, a positive effect of employment is found during the availability of the huge numbered of the labor force. Though the market forces sometimes fail, Say's law is not invalid in the context of the labor market in Bangladesh.

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