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Estimating Potential Output for Pakistan: A Production Function Approach

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Authors' contributions

This work was carried out in collaboration between all authors. Author FS designed the study, wrote the protocol, and wrote the first draft of the manuscript. Authors AH, SJ managed the literature searches, analyses of the study performed and author MIH draw the policy implications and overall editing the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Measures of potential output and the output gap are useful to help identify the scope for sustainable non-inflationary growth and to allow for an assessment of the stance of macroeconomic policies. In this paper, we apply the aggregate production function to estimate the path of potential output over the sample period 1973-74 to 2007-08. Time-varying Non- Accelerating Inflation Rate of Unemployment (NAIRU) is used to derive the amount of potential labour and perpetual inventory method to measure capital stock to account for the productive impact of capital. In addition, trend total factor productivity is estimated. The results show that Pakistan was growing above its potential output from 2003-04 to 2006-07 and in 2007-08 potential output was above actual output. This observation is also consistent with the behavior of NAIRU in which NAIRU declined from 2004-05 to 2007-08 from 8.12 percent to 6.17 percent. Actual employment was above potential employment from 2002-03 to 2007-08. These results provide some evidence that Pakistan's economy was

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facing excess demand from 2003-04 to 2006-07 and in 2007-08 the situation is opposite and in a labor-surplus economy there is need for more labor-intensive techniques of production to avoid the possibility of jobless growth.

Keywords: Pakistan; potential output; production function; NAIRU.

1. INTRODUCTION

Potential output or normalized Gross Domestic Product (GDP), as opposed to actual output, can be expressed as the maximum level of non-inflationary output expansion in an economy. It can also be seen as a measure of the aggregate supply of an economy, given optimal level of (potential) demand for output. Essentially it corresponds to the maximum sustainable level of output that can be produced given the available resources and technology. "Potential output constitutes the best composite indicator of the aggregate supply side capacity of an economy and of its scope for sustainable, non-inflationary growth" ([1], p.5). It is a summary measure of the capacity expansion of the economy, consistent with the maximal level of employment (or which is the same thing, the minimum level of unemployment). On the contrary, the actual GDP of an economy is determined by the conditions of demand over the business cycle [2]. A comparison of these measures reveals that output and unemployment gap can be helpful in the conduct of macroeconomic policies---i.e., those that lead to maximal output and minimum unemployment, with acceptable levels of inflation.

In 1962, Arthur M. Okun defined the potential output as “the level of production at full employment” and also concluded that “potential Gross National Product (GNP) is a supply concept, a measure of productive capacity. But it is not a measure of how much output could be generated by unlimited amounts of aggregate demand” (see [3], p.98). In recent literature potential output is referred as sustainable real (and rate of growth of) GDP. Therefore, potential output is an important component in the design of economic policy---especially when actual output deviates from its potential level of output, depending on speed of adjustment of the actual output and employment to potential levels of output, employment and acceptable level of inflation.

In present paper, we adopt a standard Cobb-Douglas production function methodology [4] to derive the potential output and output gap for Pakistan over the period 1973-74 to 2007-2008. Production function is based on theoretical grounds so it is most desirable. Its main advantage is that it not only estimates potential output in an economic context but also directly quantifies the contribution of each factor input. To estimate Pakistan’s potential output growth, we mainly require obtaining Pakistan’s natural rate of unemployment. For this purpose we estimate NAIRU using Philips curve with Kalman filter [1].

The main objective of this paper is to measure Pakistan’s potential output and output gap to determine their implications for monetary and fiscal policy. In the past there were only few studies in which Pakistan’s potential output estimated. The present paper will be important for achieving a better understanding of Pakistan’s economy and for setting macroeconomic policies. There are several reasons why estimating potential output and NAIRU is important to help policy making in Pakistan. First, although there are few studies on estimating potential output for Pakistan, but none exists that discusses this issue in a systematic way, such as the present one does. Secondly, the studies done so far to estimate the potential output for Pakistan, ignore the concept of NAIRU; and those which do recognize it do it mechanically without using economic information. This is partly because NAIRU is an unobservable variable and a simple H.P filter is not an accurate method to separate the unobserved component from the actual unemployment rate. It may be noted in this context that to analyze the behavior of economy, it is important to ascertain whether the economy suffers from excess capacity and under-utilization. As noted above, the present study seeks to remedy these deficiencies to yield a well-rounded picture of Pakistan’s economy’s potential and possibilities. By the same token, it offers valuable information to policymakers in this regard.

Some general trends of economic growth and inflation rates are presented in section 2. In section 3 empirical review of literature is presented and section 4 specifies a production

function in a form that will be estimated econometrically. Section 5 describes the variable included in the model and estimation of potential inputs. Estimation of potential output is discussed in Section 6. A conclusion is presented in Section 7.

2. TRENDS IN ECONOMIC GROWTH AND INFLATION RATES IN PAKISTAN

Historically viewed, Pakistan's experience in growth and inflation can be expressed in distinct decades. Starting with the fifties there was low inflation with low growth, whereas in the sixties there was low inflation with high growth. The seventies entailed high inflation with low growth; the eighties saw moderate inflation with high growth; the nineties witnessed high inflation with moderate growth and in the first eight years of 21st century, entailed moderate inflation with moderate GDP growth. The following Fig. 1 show the trends in inflation and GDP growth rate.

Over the following eight years, i.e. 2000-01 to 2007-08, inflation saw a low of 3.1 percent in 2001-02 to a high of 12.0 percent during the 2007-08, which is almost the highest level in two decades. However, the GDP growth was low level of 1.84 percent in 2000-01 to a high level of 8.4 percent during the 2004-05, which is almost the highest level in the last two decades. The overall annual inflation is expected to average 21 percent while GDP growth to remain at 2.0 percent respectively for the year 2008-09.

3. EMPIRICAL LITERATURE

The concept of Potential output is important for economic policies but there is not so much work done on this topic in Pakistan. A vast literature is available on estimation of potential output using different methods. Below are reviewed some of the empirical studies on potential output. [5] estimates potential output for Polish economy using Cobb-Douglas production-function. Ordinary Least Square (OLS) and dynamic OLS are used to estimate parameter estimates of inputs. The results showed that during the pre-crisis period, Poland's output was growing above its potential. This is also confirmed by the behavior of employment relative to its equilibrium measure. The results of production-function methodology compared with the Hodrick-Prescott (HP) filter [6] approach, helps to identify better the most recent boom-bust turning points.

[7] estimates potential output and output gap for Pakistan's economy using six methods. The main findings of the study suggest that different approaches produce different output gaps and also show that since 2005 Pakistan's economy is facing high demand pressures. The results of the study suggest that caution should be the watchword when using output gaps for the purpose of policy analysis in developing countries such as Pakistan. Another study [8] seeks to measure the output gap for Pakistan's economy using production function approach over the time period 1963-2005. It estimates potential employment and potential TFP by the HP filter approach. Potential employment and potential TFP are used to estimate potential output. At the end of sample period TFP shows the increasing trend that also confirms the findings in [9]. The study concludes that the actual output growth often deviates from the potential output growth in Pakistan and that the output gap is increased significantly when money supply and imports increase and is reduced when exports and public sector investment increase. These findings also suggest that auto-corrective mechanism of the market is not applicable in a developing country such as Pakistan.

[10] estimates potential growth rate for India using four approaches namely linear trend, HP filter, production function and Harrod's warranted growth over annual data from 1951 to 2006. The results of the HP filter suggest that growth rate of potential GDP is about 7 percent. The multivariate production function approach suggests that it is possible to achieve long-run growth rate of potential output at 6.5 percent. It also suggests that the HP filter output gap has a higher correlation with the multivariate production function output gap than the two variable production functions. These findings suggest that potential output growth of 7 to 8 percent is sustainable with sustainable and stable performance of agriculture sector.

[11] used the production function approach to update the potential output estimates for the Spanish economy, using data from 1990 to 2005. The results show an average potential increase of 3.5 percent in the last 5 years which is almost a half percentage point higher than it was estimated in 1990s. [12] estimates Germany's potential output using production function approach over annual data from 1973 to 2005. This study suggests that there are no accurate estimates of potential output and that these

estimates vary significantly over time. The potential output estimated by presently available methods cannot be considered as a yardstick for economic policy. On this ground the study suggests to economic policy makers that they pursue their policy objectives without using this variable due to difficulties in estimating potential output robustly.

[13] calculated for the European Union Member States and the Unites States the potential output growth by using the production function approach. European Union Commission used this production function approach since July 2002. For all countries in the sample, the simple Cobb-Douglas production function [4] is assumed. The Kalman filter approach is used to estimate the NAIRU concept in the Phillips curve specification. The findings of the study point out that the elasticities of EU Member States Phillips curve are similar to those for the Unites States and elasticity of wage inflation to the unemployment gap in both EU Member States and US is also same. [14] estimates potential output for Czech Republic using aggregate production function approach. The average potential output growth was 1.7 percent during the time period 1995–2000 and the potential output growth from time period 2001 to 2005 was around 3.8 percent. This shows that significant improvements are observed in supply-side performance from 2001 onwards, except the labor market.

[15] estimates potential output for China using univariate and multivariate methods. It uses aggregate data as well as five economic subsectors for multivariate production function. The production function is estimated with two specifications, in their levels and as well as an equilibrium correction model (EqCM). The results of univariate methods are very extreme and magnitude of the output gaps is more realistic in the results of production function based methods. The empirical evidence shows that sector wise output gaps are more rewarding and provide interesting dynamics and improve the aggregate output gap. This output gap is highly correlated with inflation and the results are robust in dynamic EqCM production method instead of level Cobb-Douglas production function.

[16] also uses the production function approach to estimate the potential output and the output gap for the economy of Cyprus over the time period 1985 to 2001. Kalman filter is used to estimate the NAIRU. The methodology closely follows [17] but the study also estimates the potential output and the output gaps using HP filter. The results suggest that the two estimates are very closely related with each other and give the same turning points on the business cycles of Cyprus economy except at the end of sample period[1]. The findings of the study suggest that the growth rate of potential GDP for Cyprus is higher than European Union countries.

[18] estimates potential output for South Africa using data from 1975 to 2000 with HP filter and production function approaches. The results illustrate that the HP filter can measure the level of potential output but cannot be used in supply side model. Production function approach is identified as a preferred measure which explicitly uses structural information especially in context of measuring potential labor input using NAWRU. [19] investigate the potential output in nine Latin American countries using HP filter and the Cobb-Douglas production function. The authors introduce the structural break concept in production function approach. The results between the two techniques are fairly different. The output gaps from HP filter method are very small and cannot be used for projection purpose due to end-bias problem. The output gaps from production function approach are wider which shows that there is a higher level of underutilization of factors of production.

Another similar study uses Cobb-Douglas production function to measure potential output growth and output gap for Brazilian economy. The findings of the study suggest that total factor productivity (TFP) decreased in previous two decades and that this decreasing trend reversed in 1992 and since then. On average, the economy grew at 0.9 percent. The projections of potential output growth for the time period 2001-05 lie between 3.3 to 4.5 percent [20]. [21] measure potential output and output gap for Fiji using four approaches including linear time trend, HP filter, structural VAR and an aggregate production function approach. The results of the Fiji economy show that output gap estimates are sensitive to the approaches. The main findings of the study suggest that the output gap is a relatively poor predictor of inflation in Fiji. Overall the findings of the study suggest that caution should be used to measure output gap and use them for policy purpose in developing countries like Fiji.

[1] *The end-point bias problem is obvious in the HP filter output gap when compared with production function output gap. The end bias problem stems from uncertainty and unknowing and is common in all filters since the future is unknown by its very nature.*

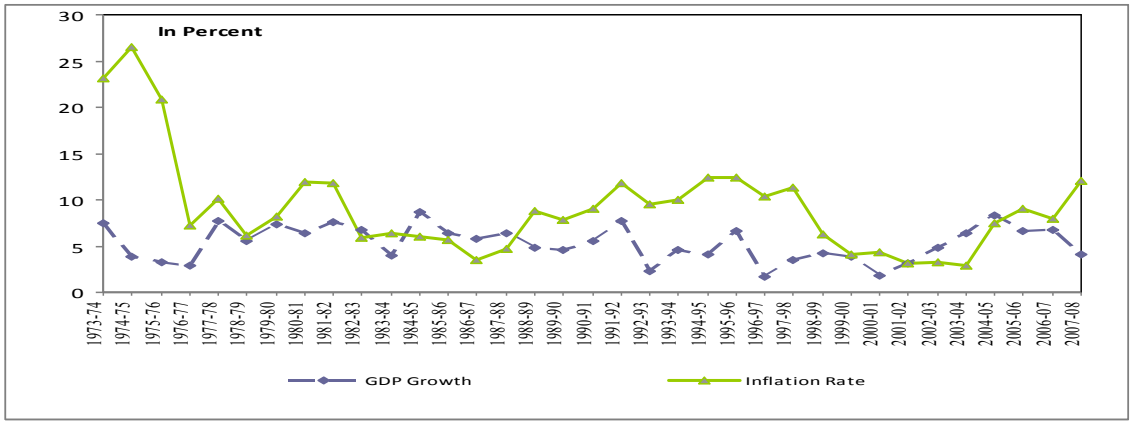

Fig. 1. Economic growth and inflation rates in Pakistan (1973-74 to 2007-08)
Source: Various issues of economic survey of Pakistan [22]

4. THE PRODUCTION FUNCTION AND PARAMETER ESTIMATES

To estimate potential output for Pakistan, we use a Cobb-Douglas production function [4] with constant returns to scale. The usual form of the production function is used:

$$Y_t = A_t L_t^{\alpha} K_t^{\beta} \quad (1)$$

Where Y_t is GDP, At is total factor productivity (TFP), Lt is labor input and Kt is capital stock. The output elasticities of labor and capital are represented by α and β respectively which sums to unity.

The equation (1) becomes linear regression model after taking natural log and using the assumption of constant return to scale replace α with (1- β):

$$\ln Y_t = \ln A_t + (1-\beta)\ln L_t + \beta \ln K_t \quad (2)$$

This model can be reformulated and estimated as an unrestricted linear regression model, as follows:

$$y_t = \ln Y_t - \ln L_t = \ln A_t + \beta(\ln K_t - \ln L_t) \quad (3)$$

Then,

$$y_t = \beta_0 + \beta_1 X_t + \varepsilon_t \quad (4)$$

where;

$$y_t = \ln Y_t - \ln L_t$$

$$X_t = \ln K_t - \ln L_t$$
$$\beta_0 = \ln A_t$$
$$\beta_1 = \beta$$

This specification suggests that both capital and labor supply have a significant effect on output, but the impact of capital stock is more than that of labor supply. We use restricted dynamic OLS to estimate parameter values of input shares of production function using equation (4).[2] The value of capital share is 0.68 and the value of labor share is 0.32.[3] The share of capital in the total output of Pakistan is higher.[4] This finding is confirmed by other empirical studies like those of [24,10,25,8].

5. ESTIMATING POTENTIAL INPUTS

For estimation of potential output we need to measure potential inputs, labor, capital and total factor productivity (TFP).

5.1 Potential TFP

We begin by estimating total factor productivity (TFP) as a Solow residual using equation (1):

[2] *In dynamic OLS we use two lags and leads [lags means past values and leads means future values] of the dependent variable [5,23].*
[3] *The estimated share of capital is 0.54 and the value of labor share is 0.46 when the labor input is defined as number of employees in the economy based on the Pakistan Labor Force Survey.*
[4] *The same Cobb-Douglas specification was assumed for the EU15 over the period 1960-2003 being used as the estimate for the output elasticity of labour, which gives a value of 0.63 for α for all Member States and, by definition, 0.37 for the output elasticity of capital [1].*

$$A_t = \frac{Y_t}{L_t^{\alpha} K_t^{\beta}} \quad (5)$$

which can be rewritten as

$$\ln A_t = \ln Y_t - \alpha \ln L_t - \beta \ln K_t \quad (6)$$

Next, we estimate potential total factor productivity using Hodrick Prescott (HP) filter [6]. In Fig. 2 actual and potential TFP are shown. It shows increasing trend throughout the sample period.

5.2 Capital Stock

The capital stock data series is officially not available for Pakistan. We therefore construct it, using perpetual inventory method. So

$$K_t = I_t + (1-\delta)K_{t-1} \quad (7)$$

Where equation (7) shows that capital stock is measured by new investment plus previous capital stock (net of depreciation). Gross Fixed Capital Formation (GFCF) is used as a proxy for investment. Depreciation rate for Pakistan is used at 5 percent level according to previous studies. [5] The perpetual inventory method assumes the initial value of capital-output ratio. [6]

5.3 Potential Labor Input

Nearly all previous studies estimates potential labor input using labor force HP trend (see [7]) and potential employment was measured using HP trend of labor force multiplied by (1- NAIRU), where NAIRU was estimated using HP filter [8] It may be noted here that we are estimating potential employment and potential labor supply in different ways as is explained in this section [17,12]. To estimate potential labour input we have already estimated NAIRU using Kalman Filter and the detailed methodology and results are explained in [30]. There are two steps used to estimate NAIRU. In first step we decompose unemployment using Kalman filter decomposition. And then in second step we identify cyclical component according to Phillips curve relationship. So given the long run equilibrium rate of unemployment, Pakistan's potential labor supply can be estimated as:

$$L_t^* = WAP * PARTS * (1-NAIRU) * AHOURS \quad (8)$$

Where WAP is the working age population, PARTS is the trend (or equilibrium) participation rate and AHOURS is the average hours worked per year. The equilibrium participation rate is obtained using HP filter. It can be shown in Fig. 3 that participation rate has decreased from 1977-78 to 1995-96 but after 1995-96 it increased till 2007-08. Working age population is multiplied by potential participation rate and (1–NAIRU) to get potential employment. And potential employment is multiplied by average hours worked to get potential hours worked or potential labor supply. Pakistan's actual and estimated potential hours or labor supply are depicted in Fig. 4. Potential hour shows increasing trend which decreased in 1990-91. Pakistan's actual labor supply is above potential labor supply between 1976-77 to 1981-82, in 1990-91, between 1992-93 to 1994-95, in 1998-99 to 1999-00 and 2006-07. At the end of sample period actual labor supply is less than potential labor supply except in 2006-07. Actual employment is above the normalized level of employment in 2006-08.

Fig. 5 shows that average labor force participation rate growth was -0.65 percent in 1980s. Its average growth rate increased in 1990s to -0.04 percent and it increased to 2000-01 to 2007-8 to 0.57. The average working age population growth was 3.35 percent in 1980s decade. Its average growth rate declined in 1990s decade to 2.1 percent but increased again during time period 2000-01 to 2007-08 to 2.64 percent. The average growth contribution of (1-NAIRU) was 0.06 in 1980s and it became negative in 1990s decade—it was a mere –0.38 percent, and then increased during 2000-01 to 2007-08. The average growth of average working potential hours is mostly negative in all the decades except in the 1990s in which it was 0.10. The growth of potential labor supply was highest in 1980s decade at 3.1 percent. It decreased in 1990s decade from 3.1 percent to 1.5 percent. It increased during 2000-01 to 2007-08. The increase in the potential labor force can be attributed to a corresponding decline in the NAIRU, and an increase in Pakistan's average working age population growth and average trend labor force participation rate.

[5] *The value of depreciation rate is adopted from [26,27,28,29,8].*

[6] *"The maximum potential output contribution of capital is given by the full utilization of the existing capital stock in an economy. Since the capital stock is an indicator of overall capacity there is no justification to smooth this series in the production function approach" ([17], p.8).*

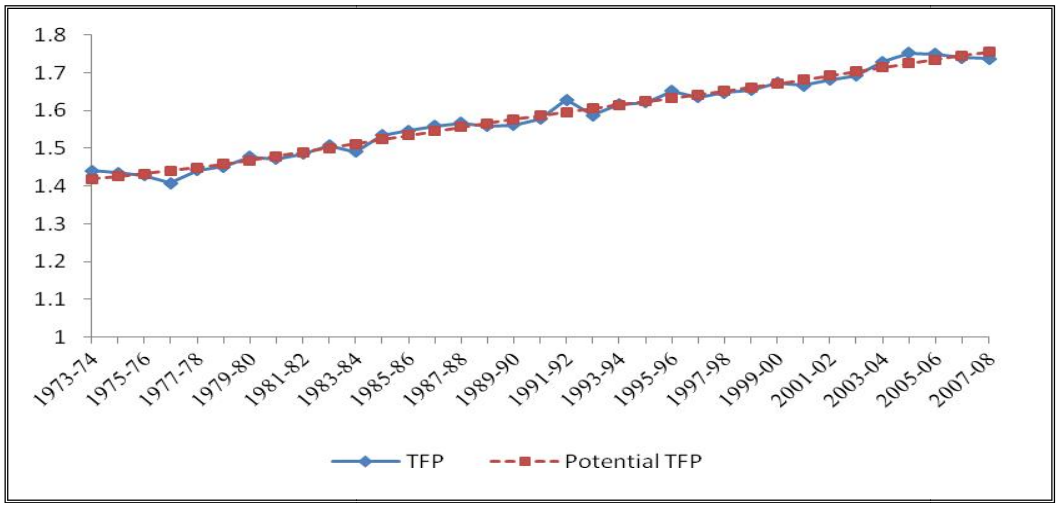

Fig. 2. Actual and potential total factor productivity of Pakistan economy: (1973-74 to 2007-08)

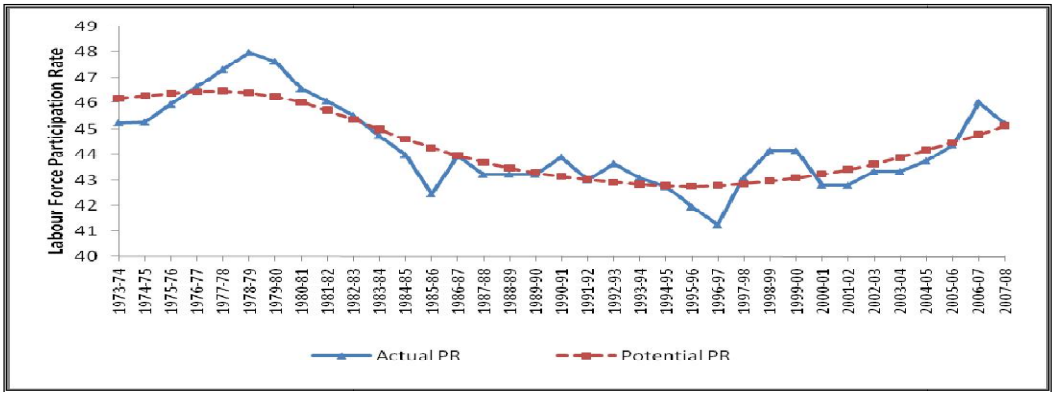

Fig. 3. Actual and potential labor force participation rate of Pakistan economy (1973-74 to 2007-08)

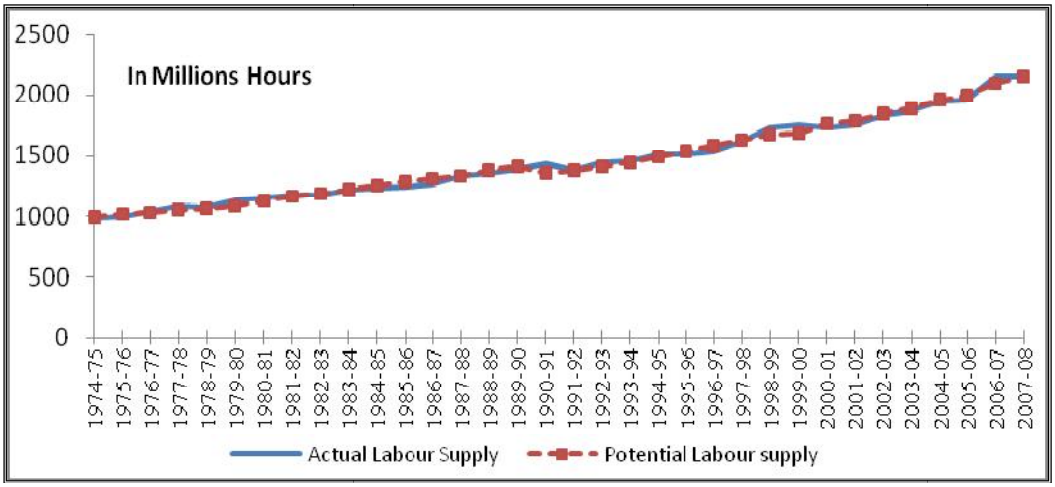

Fig. 4. Actual and potential labor supply of Pakistan economy (1974-75 to 2007-08)

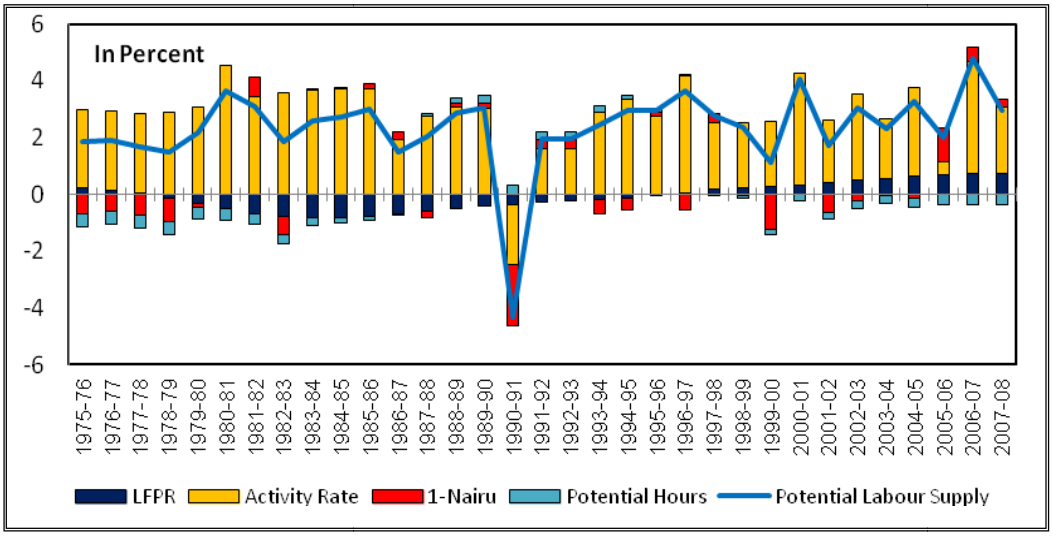

Fig. 5. Factors contributing to potential labor supply growth in Pakistan economy (1975-76 to 2007-08)

Note: *Contributions are computed as year-on-year percentage changes. Labour force participation rate, activity rate, (1-NAIRU) and potential hours contributions sum up is to potential labour supply growth rates. Any discrepancy is due to rounding*

6. POTENTIAL OUTPUT

Finally, we put the values of trend labor input, capital and HP filtered Solow residual into the production function equation and get potential output estimates.

$$Y_t^* = TFP_t^* L_t^{0.32} K_t^{0.68} \quad (9)$$

The results of potential output are shown in Fig. 6 (see appendix for summary table). The potential output closely follows the movement of the actual output in most periods. The wider negative output were in 1976-77, 1983-84, 1989-90, 1992-93 and 2007-08 which implies that the Pakistan's economy was operating at excess capacity. The wider positive output gaps occurred in 1979-80, 1991-92 and 2004-05, which implies that the Pakistan's economy over-utilized its capacity in these periods. The same was the case from 2003-04 to 2006-07 and in 2007-08 the case was opposite. These findings are consistent with the behavior of NAIRU given in the previous chapter in which it declined from 2004-05 to 2007-08 from 8.12 percent to 6.17 percent. These results provide some evidence that Pakistan's economy was facing excess demand from 2003-04 to 2006-07 but that in 2007-08 the situation was the opposite. This also implies that rapid output growth, without adequate investment and demand is unsustainable.

The output gaps are shown in Fig. 7. They shift from positive to negative from time to time. In the last few years of the sample period output gaps were positive except 2007-08. The highest positive output gap in Pakistan's economy was in 1991-92 that is 3.16 percent.

In Fig. 8 the potential output growth is characterized by regular small fluctuations around optimal growth. However, the fluctuations became volatile in 1977-78, 1983-84, 1984-85 1992-93 and 2004-05. The potential output growth was the highest in 1984-85 and 2004-05 and lowest in 1996-97 and 2004-05.

6.1 Contribution to Potential Growth

The production function framework allows us to estimate the contribution of each factor of production to potential GDP growth (see appendix for summary table). Changes in these contributions can be assessed as a signal for making structural changes in Pakistan economy. In Fig. 9 labor and capital contributions are plotted, accounting for their respective factor shares. Labor contribution has fluctuated; its contribution was at its lowest level in 1990-91, negative at -1.4 percent. The contribution was at its highest level in 2005-06. The contribution of capital has steadily increased from 2002-03 to 2005-06 and then it started decreasing from

2006-07 to 2007-08. The contribution of total factor productivity increased from 2000-01 to 2005-06 and then it started to decrease from 2006-07 to 2007-08.

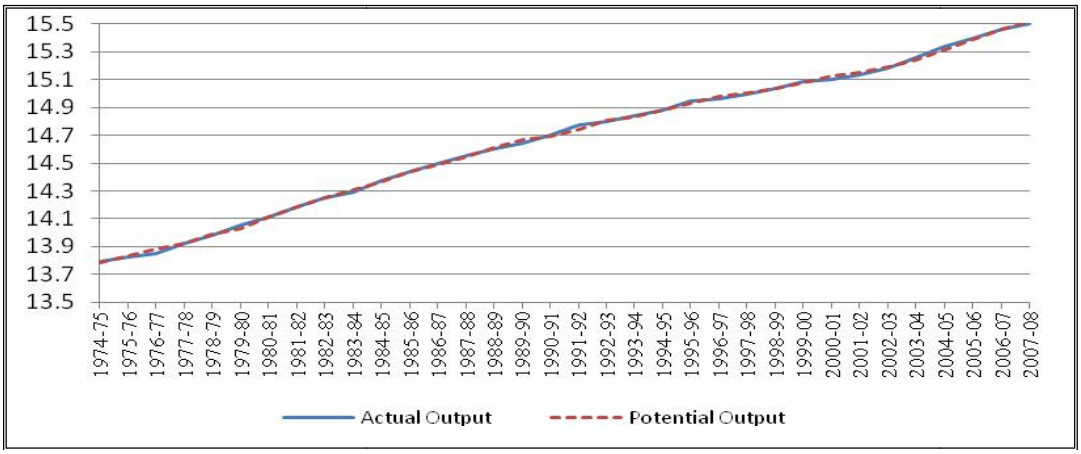

Fig. 6. Actual and potential output of Pakistan economy (1974-75 to 2007-08)

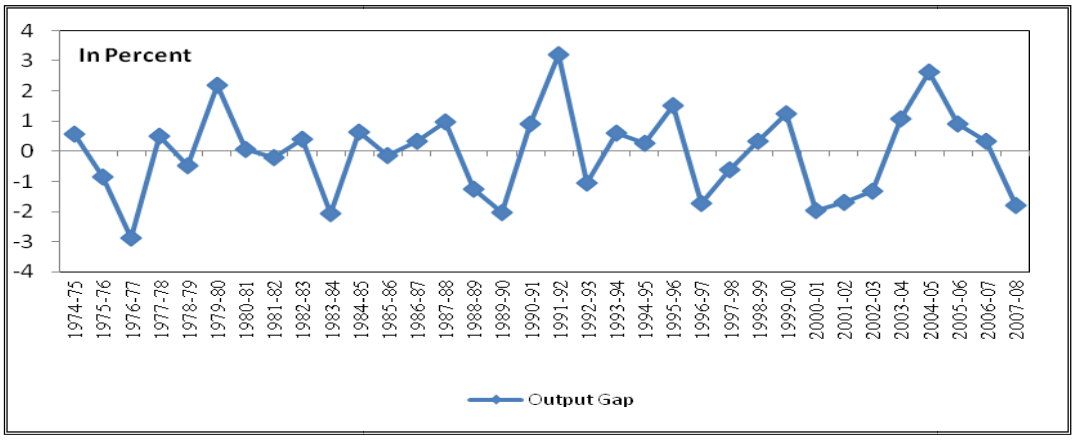

Fig. 7. Output gap of Pakistan economy (1974-75 to 2007-08)

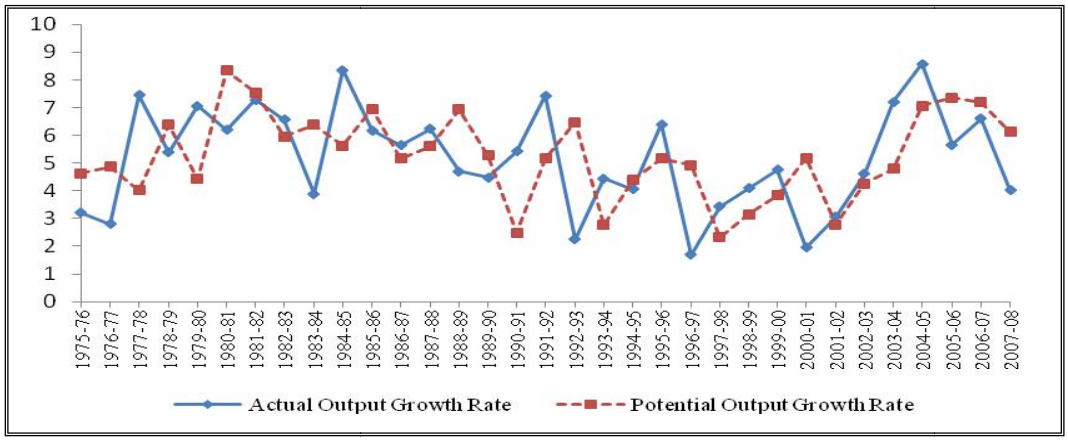

Fig. 8. Growth of actual and potential output of Pakistan economy

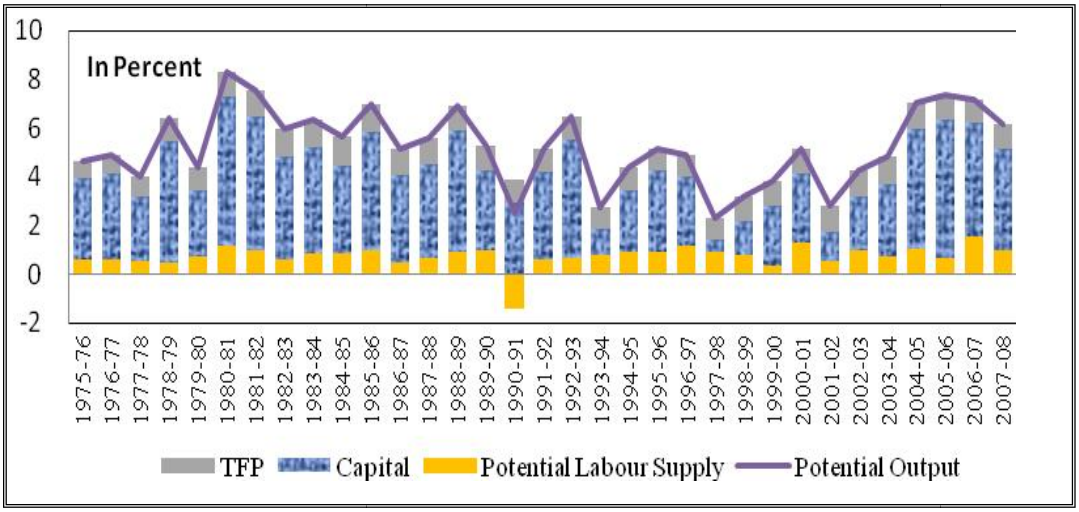

Fig. 9. Factors contributing to potential output growth in Pakistan

Note: *Contributions are computed as year-on-year percentage changes. Total factor productivity, capital, and potential labour supply contributions sum up is to potential output growth rates. Any discrepancy is due to rounding*

7. CONCLUSION

This paper estimates the potential output for Pakistan from the production function approach. The estimates follow the movement of the actual output closely in most periods. A wider gap of 3.16 percent was observed in Pakistan's economy in 1991-92. The economy was overheated in 2003-07 so that growth could not be sustained in 2007-08. This observation is also consistent with the behavior of NAIRU given in [30] in which NAIRU declined from 2004-05 to 2007-08 from 8.12 percent to 6.17 percent. Indeed, at the end of sample period actual employment was less than potential employment. This paper points out that actual output of the Pakistan economy has been both above and below potential output at different stage of the cycle. It means that there is room for relaxing or tightening the monetary policy to stimulate growth without causing inflationary pressures to build and or letting them to drag down growth in the pursuit of price stability in latter case. Hence, an investment in research on this topic will lead to a higher pay off in the conduct of monetary policy.

The findings of this paper have also important implications for fiscal policy. It is that, on average, the economy has seen as many periods of excess demand as of excess capacity, so there is room for expansionary fiscal policy when excess capacity exists to stimulate growth without causing inflationary pressures. Indeed, an expansionary fiscal policy will be helpful in stimulating potential output growth as well in such circumstances. Thus, as a general rule, when output is below its potential, it would be counterproductive in indulge in severe deficit-cutting exercises; and the reverse should be the case when output is above its potential. And at the time of declining potential growth the focus of fiscal expansion should be on those expenditure that would lead to increase long term potential growth.

In conclusion, the use of expansionary (tight) monetary and fiscal policies to stimulate growth has limited scope because the production processes tend to be capital-intensive. As shown above, the share of capital is two times larger than labor force, now in a labor-surplus economy there is need for more labor-intensive techniques of production to avoid the possibility of jobless growth. In addition, there is strong need for labor market reforms that would contribute towards increasing labor productivity.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX

Table 1. Actual output, potential output and factors contributing to potential output growth in Pakistan

Years	Actual output	Potential output	Potential labour supply growth	Capital growth	TFP growth	Potential output growth
1974-75	13.792	13.783	-	-	-	-
1975-76	13.824	13.827	0.445	3.320	0.706	4.472
1976-77	13.852	13.875	0.471	3.514	0.761	4.745
1977-78	13.926	13.914	0.432	2.653	0.843	3.928
1978-79	13.980	13.978	0.424	4.996	0.922	6.342
1979-80	14.051	14.022	0.739	2.727	0.992	4.458
1980-81	14.113	14.106	1.270	6.122	1.046	8.439
1981-82	14.186	14.184	1.176	5.465	1.094	7.735
1982-83	14.251	14.245	0.744	4.250	1.128	6.123
1983-84	14.290	14.311	1.057	4.387	1.147	6.591
1984-85	14.374	14.369	1.095	3.599	1.157	5.851
1985-86	14.436	14.441	1.169	4.844	1.138	7.150
1986-87	14.492	14.495	0.684	3.585	1.100	5.369
1987-88	14.555	14.552	0.778	3.896	1.056	5.729
1988-89	14.601	14.622	1.030	4.986	1.017	7.033
1989-90	14.646	14.676	1.059	3.299	0.997	5.355
1990-91	14.701	14.699	-1.554	2.911	0.986	2.342
1991-92	14.775	14.752	0.690	3.572	0.970	5.231
1992-93	14.797	14.817	0.726	4.900	0.941	6.567
1993-94	14.842	14.845	0.772	1.062	0.932	2.767
1994-95	14.882	14.888	0.896	2.520	0.924	4.340
1995-96	14.946	14.940	0.904	3.305	0.920	5.129
1996-97	14.963	14.988	1.035	2.845	0.917	4.797
1997-98	14.997	15.010	0.801	0.492	0.933	2.227
1998-99	15.038	15.040	0.626	1.439	0.961	3.026
1999-00	15.086	15.076	0.070	2.494	0.997	3.560
2000-01	15.105	15.126	1.135	2.844	1.033	5.011
2001-02	15.136	15.151	0.322	1.171	1.072	2.564
2002-03	15.182	15.192	0.764	2.186	1.099	4.049
2003-04	15.254	15.238	0.543	2.952	1.103	4.598
2004-05	15.340	15.306	0.790	4.932	1.074	6.796
2005-06	15.397	15.378	0.483	5.664	1.026	7.173
2006-07	15.463	15.447	1.322	4.656	0.987	6.964
2007-08	15.503	15.506	0.677	4.204	0.970	5.851

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