

Productivity Puzzling: A Study on Recent Behaviour of UK and Bangladesh

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Abstract

Productivity is a multi-faceted concept; no single definition can holistically describe it. However, in the simplest form, productivity signifies the ratio between the input and output. In achieving sustained economic growth of a country, increased productivity remains as the key component. Productivity signifies a continual striving towards the economically most efficient mode of production of goods, commodities, and services needed by a society. Prior to the mid-1980s, labour productivity growth was a useful barometer of the world economy: it was low when the economy was depressed and high when it was booming. In many larger advanced economies like UK labour productivity growth slowed sharply and remained subdued for years after the credit crisis of 2007/08. After the early 1980s productivity issues were considered as a priority area for action in Bangladesh: a small economic country, but Productivity has slowed down again significantly during the last decade (2001-2012) because of some reasons. In this paper, we tried to find out the reasons behind for productivity puzzling in UK as well as in Bangladesh. For UK productivity puzzle, this study considered that workforce composition, lower business investment, flexibility of labour market, Impaired resource allocation, and public sector productivity were the major factors that might have caused productivity to fall and in Bangladesh, insignificant role of allocative efficiency of resources within industry, poor performing public sector, inadequate public sector investment, labor union, firm size and productivity are inversely related were the major factors that might had caused low productivity. In light of these findings, it is found that there is a similarity between productivity puzzling factor of UK and Bangladesh. Performance and investment in public sector and improper resource allocation are common productivity puzzling factor for both the countries.

Keywords: Productivity Puzzling, UK, Bangladesh

1. Introduction

In the early 1980s and 1990s, there was very meager fall in productivity and then experienced substantial recovery. Productivity had risen by around 14 percent in both cases after sixteen quarters after the start of the recession (Grice,2012). Movement in the overall output and employment level in the UK have posed a productivity puzzle since the starting point of the financial crisis in 2008. Between the first quarter of year 2008 and the second quarter of 2009, the UK experienced 6.3 percent fall in GDP level but only 2 percent fall in employment. The third quarter of 2011 and the second quarter of 2012 confronted 1 percent fall in the GDP level with 1.4 percent growth in the employment level (Patterson,2012).

Labour productivity means the amount of output produced for a single unit of labour input. Accurate estimation of productivity bears great importance because it is used as an estimator of efficiency in the business and economic growth. Total factor productivity is a parameter of efficiency with which all inputs like capital and labour are combined to produce output (Disney and Miller, 2013). In UK Across the whole period, 2008Q1 to 2012Q2, output reduced by around 3 percent and employment increased by 0.2 percent thus output per worker is below its pre-recession level by 3.2% (Disney,Jin and Miller,2013). Apart from this behavior of companies, flexibility of labor market, structure of the labor market, structure of the economy, role of financial sector and behavior of the company might have played a role in idiosyncratic behavior of the productivity from the past trend (Patterson, 2012). Overall circumstances have puzzled many economists and policymakers and they are skeptical about the accuracy of the GDP estimates and the labour market statistics (Grice, 2012)

In Bangladesh, before the early 1980s productivity issues were never considered as a priority area for action. Productivity was neither theoretically nor practically understood in its real context. Bangladesh became a member of the APO (Asian Productivity Organization) after one decade of independence. The understanding of productivity depends on a better knowledge of the close relationship among labor, capital, and management and the impact of the human element on each of these factors. In a country like Bangladesh, where resources are limited and per capita income is low, productivity can be raised only by emphasizing labor, i.e., awareness of labor efficiency. The overall productivity to Bangladesh, to some extent, is reflected by the Gross Domestic Product (GDP). The growth of GDP has been slow in 1980s, but it accelerated to 3 percent in the 1990s. Productivity has slowed down again significantly in Bangladesh during the last decade (2001-2012) because of some reasons.

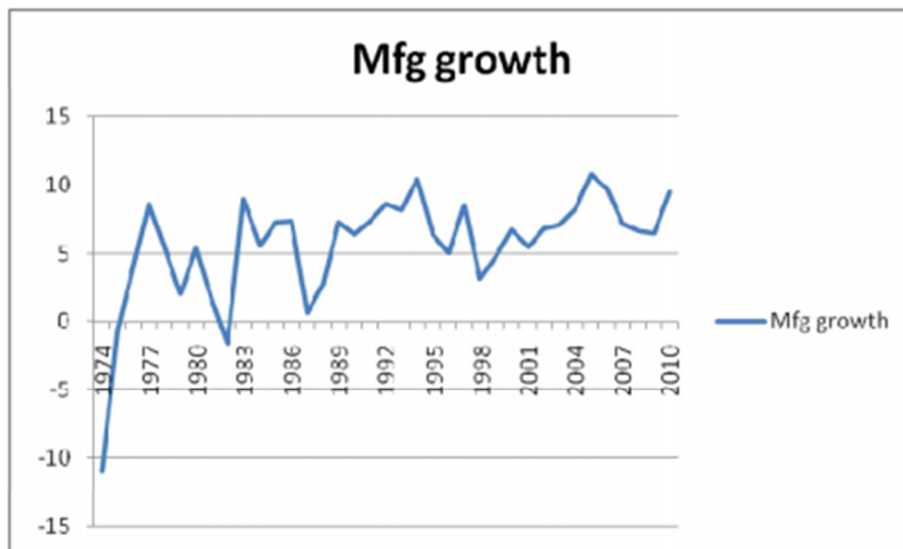


Fig: Growth of Manufacturing productivity of Bangladesh during 1976-2010 (Source: the data of Bangladesh Bureau of Statistics)

In this paper, we will try to find out the reasons behind for productivity puzzling in UK as well as in Bangladesh.

1.2 Strongest reasons for productivity puzzling in UK

1.2.1 Workforce composition

Increase in part-time and decrease in full-time workers are evident from various surveys and research. Such shift caused aggregate productivity to fall. There has been a significant rise in the proportion of workers who are not full time. From 2008 Q1 to 2012 Q3 the percentage increased from 25.5% to 27.5% in the part-time work group. Disney, Jin and Miller (2013) observed that moving towards part-time and self-employed workers caused fall in productivity because part-time workers are 30% less productive compared to the full time employees. Patterson(2012) showed the increased number of part-time workers who couldn't get full time job in figure 2. If this is the case, then 2% shift towards part-time labours or workers will result in fall in aggregate productivity (hourly) by approximately 0.4%. However, if continued increase in workers' length of experience and the shares of workers with degrees were being properly utilized, these would tend to increase output level. It has been argued by Disney, Jin and Miller (2013) that if self-employed are 40% less productive then there would be a fall of 0.46% on aggregate productivity. Currently self-employed workers differ from those who were self employed before the recession. Some of them became self-employed after losing the job are basically considered as less productive. It is obvious that these reasons might have created productivity gap.

Output gap is ascertained by the difference between potential level of output and actual level of output (Mishkin,2012).

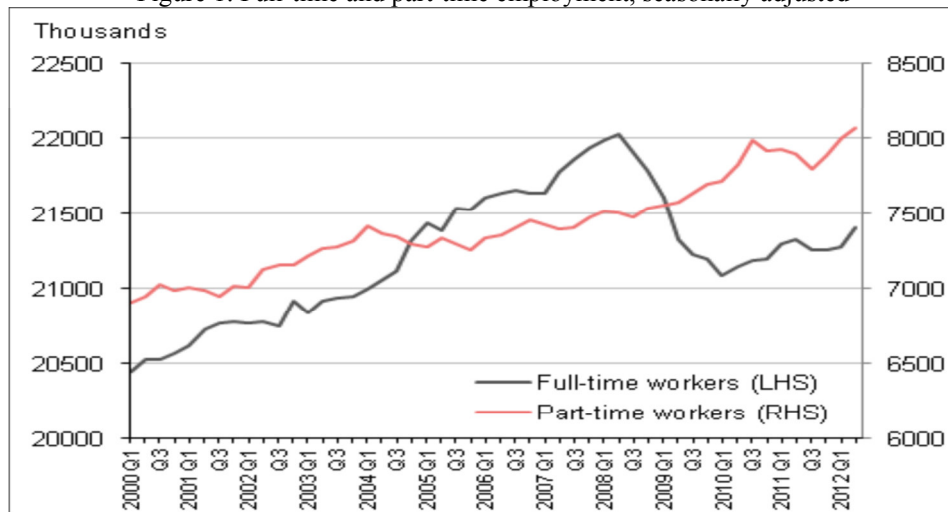
$$\text{Output Gap} = \text{Actual output } (Y_t) - \text{Potential output } (Y_e)$$

Average output gap in 2012 was around -2.9 % (OBR,2012). 30% less productivity among the part-time worker group along with the lack of utilization of skills has kept the potential output lower than the actual output resulting in increased output gap or less productivity.

$$\text{Employment Rate} = \frac{\text{Employed}}{\text{Labour Force}}$$

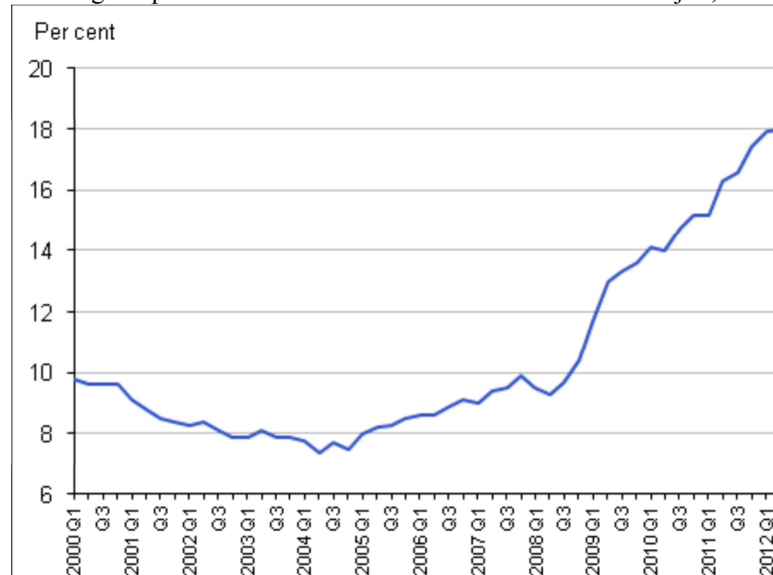
Here labour force consists of employed and unemployed workers and works as the input factor of productivity i.e.labour. Since increase in number of part-time and self-employed workers, which are less productive but increased employment rate might have created productivity puzzle.

Figure 1: Full-time and part-time employment, seasonally adjusted



(Source: Patterson, 2012)

Figure 2: Percentage of part-time workers who could not find a full-time job, seasonally adjusted

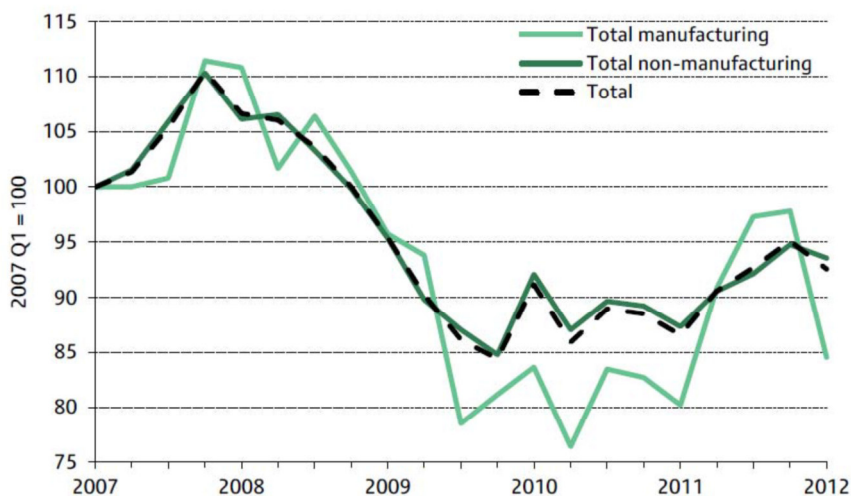


(Source: Patterson, 2012)

1.2.2 Low Business Investment:

As investment is a component of GDP, reduction in investment will lead directly to reduction in output. In the UK, construction and the distribution sector confronted 45% fall in investment from the start of 2008 to the post recession lows (Disney, Jin and Miller, 2013). They also revealed that investment in the manufacturing sector reduced by over 30% between the year 2008-2010. By 2012, total annual investment remained 16% below the previous peak. It has also been assumed that capital might have been reserved for investing to the sector for which demand is now relatively high. This can cause misallocation of capital, which results in reduction in TFP.

Figure 3: Business Investment



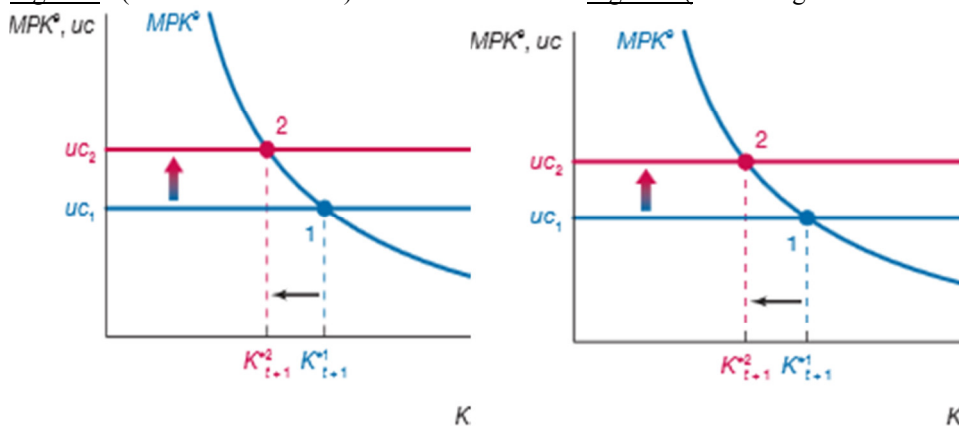
Source-(Disney, Jin and Miller, 2013,p-77)

Cost of capital is one of the determinants of investment that has risen over time. Brodbend(2012) stated that cost of capital has risen by around 4.2% between the year 2010-2012. This motivates firms to substitute towards labour because it is cheaper and reducing capital and output per worker. It is also evident that cost of capital is now higher than before the crisis time (BOE,2012).

If user cost of capital keep rising, investors will be less likely to borrow and make investment. This may lead reduction in investment results in less production. Consequently, aggregate productivity may fall and recession might be longer than expected. If the user cost of capital(UC) shifts upwards from UC1 to UC2, the capital stock(K*) and investment will be reduced. That means increased UC results in decreased investment level(Figure 4). SMEs are experiencing financing constraints. Such hindrances are resulting in low corporate births(Brodbend,2012). If financing constraints increases, Capital stock and level of investment from the small and medium enterprises in the economy will be reduced that will result in less output (Figure 5).

Figure 4 : (UC and Investment)

Figure 5:(Financing constraints& Investment)



Source: (Figure 4 & 5 , Mishkin,2012, page 496 & 497 respectively)

1.2.3 Flexibility of labour market

Gregg et.al(2013) showed that wages have become more responsible to local employment rates since early 2000. Substantial increase in labour supply resulted from combination of policy change and reduction in the value of household wealth can cause reduction in real wage(Blundell, Crawford and Jin,2013). Lower wages enables firms to hold more staffs given the fall in output demand. Output remains low and the number of labour is increasing leading to fall in productivity(Disney, Jin and Miller, 2013).

Pessoa and Reenen(2013), mentioned in their paper flexibility of real wage causes fall in productivity. Production function is

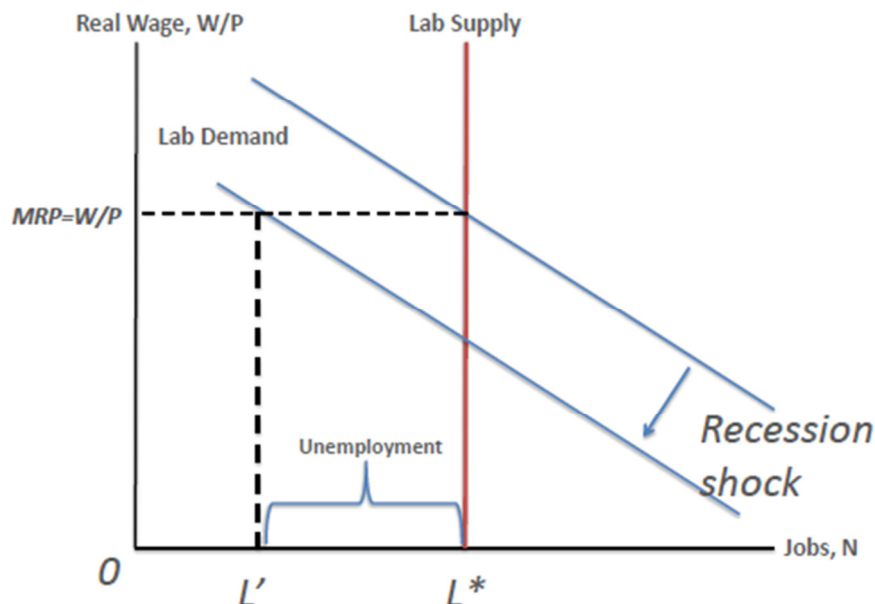
$$Q=A L^{\alpha} K^{1-\alpha}$$

Here Q is output, L is labour, K is capital, and A is TFP. If we consider the first order condition, labour productivity is related to real wage. In figure- 6, for simplicity, supply curve has been considered as inelastic. Generally, in a recession with negative output shock can shift the demand curve downward, hence employment

will move from L^* to L . The equation below (here w =wage and P =price) holds in a normal recession wages are rigid (downwardly). This holds that output and employment are lower, their ratio remains identical. Here both wages and labour productivity remains unchanged.

$$\frac{Q}{L} = \frac{1}{\alpha} \frac{W}{P}$$

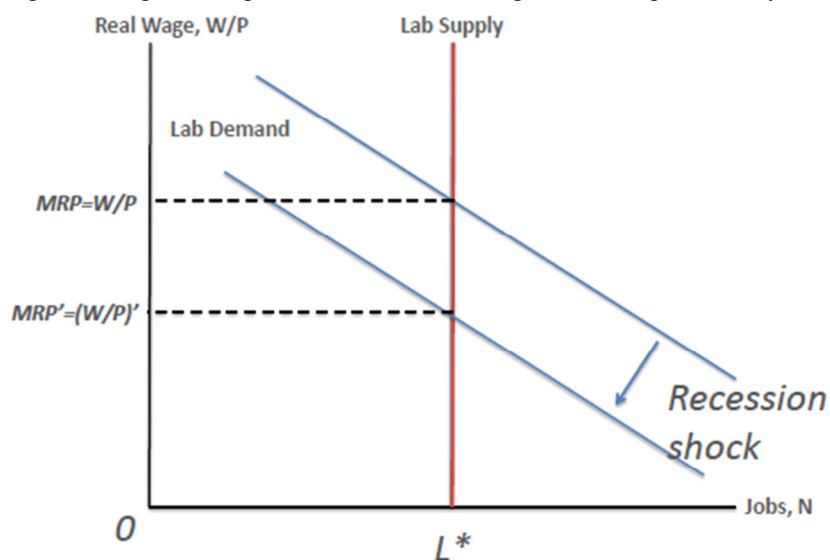
Figure 6: Negative output shock & rigid wages- Labour productivity Stable



Source: (Pessoa and Reenen, 2013)

It can be seen from the figure-8 that the flexible wages leads to fall in labour productivity. In this case real wages fall to guarantee full employment, but labour productivity has fallen $\frac{Q'}{L} = \frac{1}{\alpha} \frac{W'}{P} < \frac{Q}{L}$. The flexibility of real wages has sheltered jobs, but ascertained productivity is lower (Pessoa and Reenen, 2013). Due to recession shock, demand falls that lead to lower wages. Firms require same number of workers to operate machine which capacity has been reduced might have associated with lower productivity and created puzzling (Disney, Jin and Miller, 2013).

Figure 7: Negative output shocks & flexible wages –Labour productivity falls



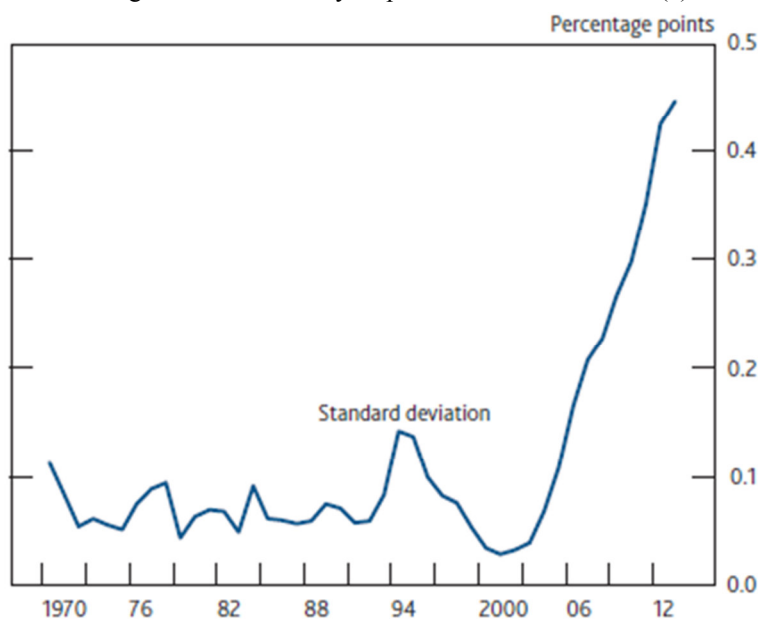
Source: (Pessoa & Reenen,2013)

1.2.4 Impaired resource allocation

Another important puzzles in productivity is the slowdown in the reallocation of resources — capital and labour — to more efficient and productive uses. Economic theory suggests that more efficient companies should be able to attract more inputs, be they capital or labour, relative to companies that are less efficient. Over time, the less

efficient companies are forced to become more efficient or go out of business. Caballero and Hammour (2000) depict that this process of ‘creative destruction’ drives a more efficient allocation of capital and labour across the economy and leads to higher productivity growth at the aggregate level. Several academics’ like Disney, Haskel and Heden (2003) studies have shown that resource reallocation was indeed an important driver of UK productivity growth prior to the 2007–08 crisis. However, if there are impediments to the free movement of these factors of production, then it is possible that differences in the level of efficiency across companies may persist, leading to slower productivity growth at the aggregate level. In practice, differentials in productivity levels across markets and sectors are likely to exist even in normal times(Bernard and Jones (1996). Some sectors are, by their nature, less labour intensive (hence more productive), and a healthy, dynamic economy requires such firms to coexist with others that may be more labour intensive, as both perform important economic functions. But if resource allocation is restricted, one would expect to see increased differences in productivity, prices and rates of return across firms and sectors relative to their levels before the crisis. Chart 8 shows that, since 2007 and up to 2013, the difference between trend and actual productivity across UK industry sectors has been significantly more dispersed than during the pre-crisis period, indicative of little reallocation having taken place since that time.

Figure 8: Productivity dispersions across industries(a)

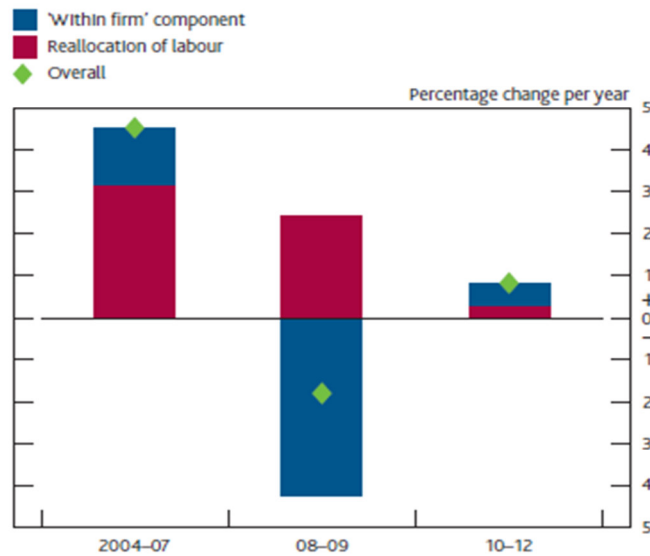


Sources: EUKlems, ONS and Bank calculations.

(a) The chart shows the standard deviation of productivity shortfalls (relative to a trend calculated between 1970 and 2006) across 1-digit Standard Industrial Classification (SIC) sectors.

It is possible to examine the role of reallocation in more detail using ONS firm-level data from the Annual Business Survey. Chart 9 decomposes private sector productivity growth into growth that can be attributed to changes in productivity within individual firms (the blue bars), and changes stemming from the reallocation of labour from less productive to more productive firms (the red bars). The reallocation of labour here includes the decisions by existing firms to expand or reduce their headcounts, hiring decisions associated with the creation of new firms, as well as the laying off of employees by failing companies.(Barnett et al (2014)

Figure 9: Decomposition of labour productivity(a)



Sources: ONS research data sets and Bank calculations.

(a) The chart includes UK private non-financial corporations, excluding those in the agriculture, mining and utilities sectors. Further details are provided in Barnett *et al* (2014a).

While the ‘within firm’ component accounts for the vast majority of the fall in productivity in 2008–09, the changes in the component that captures the reallocation of labour across UK firms are also striking. This component could explain more than half of labour productivity growth in the four years prior to the recession. At the beginning of the recession in 2008 and 2009, the contribution from reallocation fell slightly, rather than increasing significantly as a result of higher insolvencies or firing behaviour, as one might have expected (Riley, Rosazza Bondibene and Young (2014). Following this, the contribution from reallocation declined even further, becoming negligible between 2010 and 2012. This result is in line with Weale (2012), who finds evidence of reduced labour movement through fewer job changes. Specifically, he finds that an apparent change in the workings of the labour market has resulted in there being fewer opportunities for career advancement through changing occupation or industry of employment than there were in the few years before the crisis, and that this could explain about 0.3 percentage points per annum of the fall in labour productivity.

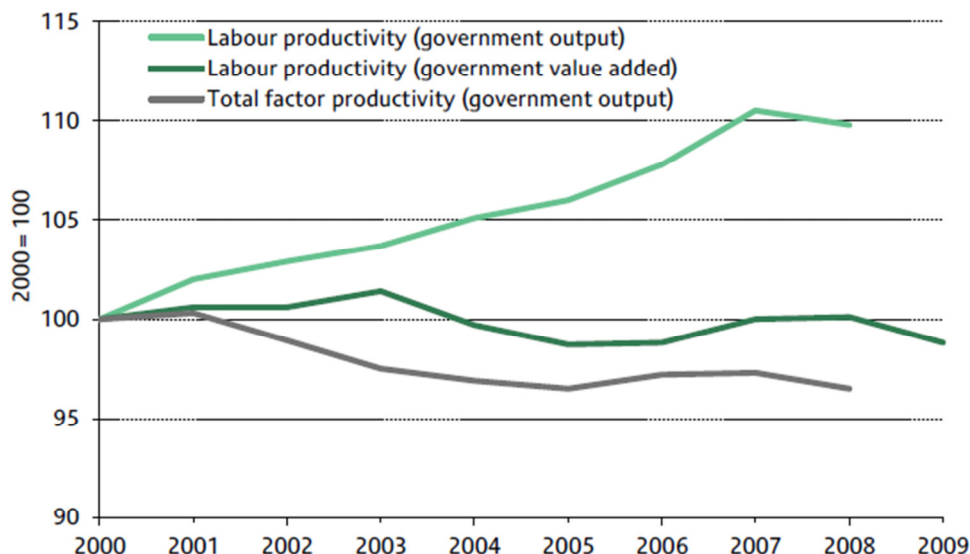
1.2.5 Public sector productivity

Public sector measured output growth was substantial in the decade up to 2009. From 2000Q3 to 2009Q3, output of ‘public administration and defence’ rose by 17%, ‘education’ by 11% and ‘human health and social activities’ by 44%.¹ However, this increase in output was accompanied by an increase in input volumes, notably in the employment of such groups as civil servants, police officers and staff, teachers and nurses.

The ONS has produced a number of alternative measures of productivity growth in the production of government services over this period. Some of these are illustrated in below Figure. The two green lines show measures of labour productivity. What differentiates them is the measure of output used. The dark green line uses a measure of value added – effectively, this is output excluding all spending on intermediate inputs that are not labour. The light green line uses a measure of gross output derived from an index of spending on all inputs (labour and capital). Under this measure, labour productivity can increase if there is additional spending on non-labour inputs. The grey line is a measure of total factor productivity, which is an index of gross output relative to an index of capital and labour inputs. Two of the three measures show declining productivity, while one measure reports an increase over the period. Table also showed a small increase in output per hour in total government services in the decade before the recession.

¹ ONS tale ‘GDP(O) low level aggregates at constant and current prices’ (<http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hocdata/economy/december-2012/gdp-o--low-level-aggregates-at-constant-and-current-prices.xls>).

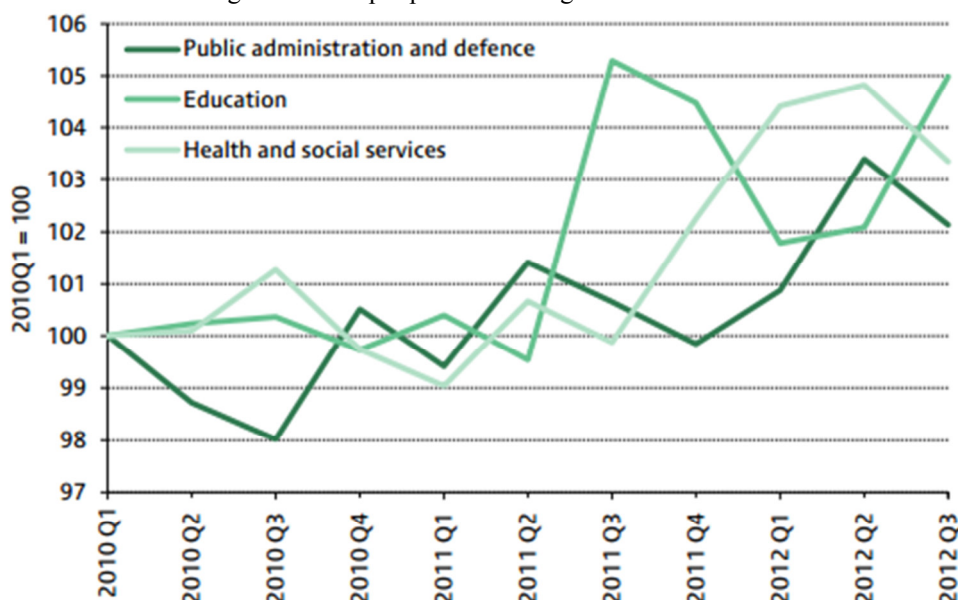
Figure 10: Measures of public sector productivity



Notes: The ‘government output’ measure of labour productivity is an index of total spending on public services divided by an index of total employment. The ‘government value added’ measure is similarly an index of value added (i.e. output excluding intermediate inputs) relative to an index of employment for a selection of government-dominated activities. The ‘government output’ measure of total factor productivity is an index of output relative to a range of inputs, including capital and labour, weighted by their relative contributions. Source: Office for National Statistics, ‘Public sector labour productivity’, January 2011.

There are important differences across different parts of the ‘government services’ sector. Between 2009Q3 and 2012Q3, output fell by 5% in ‘public administration and defence’ (this should not be surprising given that measured output in these sectors is heavily dependent on the volume of inputs), fell very slightly in the education sector and actually rose by 8% in ‘human health and social work activities’. A priori, a larger fall in employment relative to outputs suggests that, in the short run, measured labour productivity (and probably total factor productivity also) has increased in the public sector.

Figure 11: Output per worker in government sectors



Source: Office for National Statistics, ‘GDP(O) low level aggregates at constant and current prices’, December 2012; *Labour Market Statistics*, several issues between August 2011 and December 2012.

Figure 11 shows indices of the volume of output in the three subsectors defined in the National Accounts as ‘government services’ – public administration and defence, education, and human health and social work activities – relative to indices of employment in these sectors derived from recent editions of ONS Labour

Market Statistics, which contain broadly consistent time series of employment.

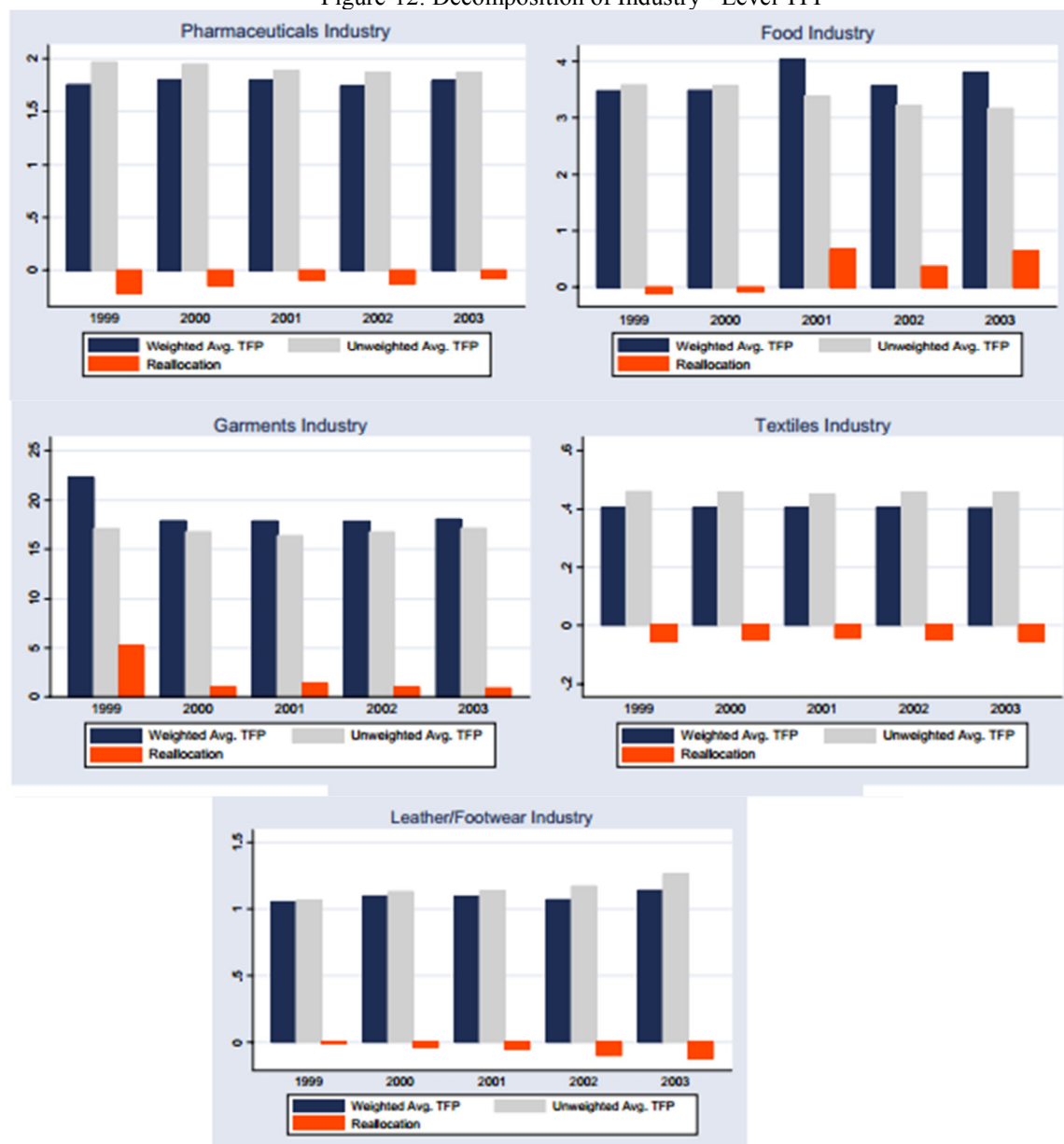
The figure shows a broad upward trend in output per worker in all three sectors of government services since 2012, which is slowest in ‘public administration’ and with a high degree of year-to-year variation in all the sectors.

1.3 Strongest reasons for productivity puzzling in Bangladesh

1.3.1 Insignificant role of allocative efficiency of resources within Industry

Productivity in any given industry in any given year may grow/ decline because its firms become more/ less productive and/or because output is reallocated towards the more/less productive firms. In fact, industry level productivity (weighted-average TFP of all firms in the industry) can be broken into two components: (i) industry- level unweighted-average TFP and (ii) a term measuring the covariance between firms’ shares in total sales and firms’ TFP. The covariance term measures allocative efficiency: if it is positive, then the more productive firms in the industry have higher market shares and the allocation of resources is efficient.

Figure-12: Decomposition of Industry - Level TFP



Source: Firm-level data collected for this report and staff calculations

As seen in above figure, the industry-level TFP patterns of Bangladesh are explained mostly by the firm-level TFP performance, not by the allocative efficiency of output across firms in any of the industries. In the garments industry over the entire period, and in the food industry since 2001, the allocative efficiency has made a positive contribution to industry-level productivity.

In the pharmaceuticals, textiles, and leather/footwear industries of Bangladesh, allocative efficiency has made a negative contribution to industry level productivity. This in efficiency in these three industries may be related to the lack of competition – including import completion- or to ineffective bankruptcy rules and the lack of markets for used capital that prevent the exit of less productive firms.

1.3.2 Poor performing public sector

National Productivity Organization in Bangladesh estimated that in the 90s, there was hardly any difference between the public and private sector regarding productivity of employee. While Base: 1990-91=100, the productivity in public sector was 104.41 in 1991-92, which become 116.80 in 1996-97 where average in that decade was 113.43. The average productivity of employee in private sector in that same decade was 118.48 (114.31 in 1991-92 and 122.35 in 1996-97).

Table: Comparative trends of productivity and salaries paid to the employees both under public and private sector management in Bangladesh.

Sector	Years	Trend of productivity	Trends of wages and salaries
Public Sector	2003-04	163.39	105.46
	2004-05	58.70	105.31
	2005-06	134.53	106.69
	2006-07	121.12	134.19
	2007-08	98.60	144.44
	2008-09	75.05	140.42
Private Sector	2003-04	72.82	110.41
	2004-05	94.66	134.69
	2005-06	75.78	141.39
	2006-07	99.80	130.36
	2007-08	143.46	166.68
	2008-09	94.11	194.51

Source: Secondary data of national productivity organization

While Base: 2002-03=100, the productivity of employee in public sector in 2008-09 was 75.5 and the wages and salary was 140.42; the same for private sector are accordingly 94.11 and 194.51- which indicates decrease in productivity in public sector . It can be seen in above figure, the productivity trends of public sector employees decreasing than the employees' of private sector of Bangladesh.

1.3.3 Inadequate public sector investment

Investment is a prerequisite for creation of new firms and expansion of the existing ones, thus increase in productivity. According to Barkat (2006) development without investment is improbable. According to Bangladesh Economic Review (2011) in FY 2009 -10, investment was 24.41 per cent of GDP and the shares of public and private sector were 5.01 per cent and 19.40 per cent respectively. In Fiscal year 2010-11, the investment is 24.73 per cost of GDP and the shares of public and private sector are 5.28 per cost and 19.46 per respectively. According to Barkat (2006) in 1990's the real GDP wroth averaged 4.8 per cent (with declined volatility) credited to increased private investment and further integration with global economy reflected in the increased export, especially in the RMG sector. According to Bangladesh Economic review (2010), the share of private investment in total investment was about 60 percent, which stood over 80 per cent in FY 2009-10. An analysis if the investment data reveals that while the contribution of public sector in total investment is gradually decreasing, where as the contribution of private sector investment is increasing steadily. Inadequate private sector investment might have created productivity puzzle.

1.3.4 Labor Union

There is lot of debate on the relationship of labor union and productivity- some argue that, labor union increase productivity, some argue that it hinders productivity. According to the Economist (2007) there are some areas where unions will produce higher productivity.

1. There are opportunities for deploying capital to replace low skilled labor
2. There are significant transaction costs to finding and retaining labor.
3. The work easily lends itself to classification and regularization and
4. Productivity is easily measured.

However, labor union is indeed an effective tool to protect the interest of the workers. Which is one of their

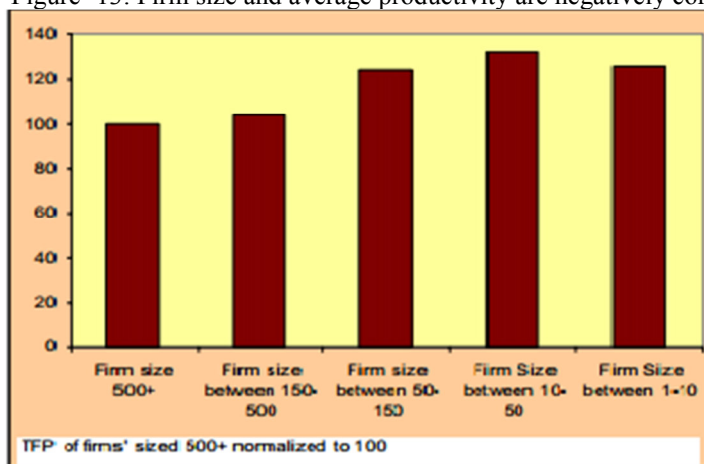
rights too.

But unfortunately, real labor union has not been formed in Bangladesh which could be instrumental to have positive impact on the benefits for the labor as well as on the increase of productivity. According to Rahman (2009) labor union in Bangladesh could not develop independently because of their overwhelming dependency on the political parties and leaders. The political affiliation of trade unions is the root of many other formidable problems faced by organization (Akkas, 1998). At this back drop, where common worker are not adequately protected by their unions as well as productivity is not directly been influenced positively by the activities of unions. The relationship between Owners and workers also have create puzzle in productivity of the organization.

1.3.5 Firm size and productivity are inversely related

Here, the size classification made according to Bangladesh census of Manufacturing Industries (CMI), which are : small firms have less than 10 workers, medium firms have between 10 and 50 workers and large firms have less 50 workers. We further divide the large firm category into 3 sub-categories: relatively large firms have between 50 and 150 workers, very large firms have between 150 and 500 workers and extremely large firms have more than 500 workers. As seen in the below Figure relative to the extremely large size firms firms of smaller sizes are more productive. Medium sized firms are the most productive firms – in average 32 percent more productive than extremely large sized firms. Thus contrary to finding for developed economics in Bangladesh the large firms are not the most productive. Although it is not possible to verify at this point, this may be because of the serve corporate management deficiencies and the resulting dearth of qualified middle manager in Bangladesh which become increasingly binding as the firm size increases, preventing exploitation of available economies of scale.

Figure- 13: Firm size and average productivity are negatively correlated



Source: Firm-level data collected for this report and staff calculations

1.4 Conclusion

Labour productivity behavior in the UK has been puzzling and it has been persistently weak (Hughes and Saleheen,2012), labour productivity behavior in the Bangladesh also been puzzling; as employment was resilient, the productivity fell between 2008 and 2012 in both UK and Bangladesh. However, having discussed the UK productivity puzzle, this study considers that workforce composition, lower business investment, flexibility of labour market, Impaired resource allocation, and public sector productivity are the major factors that might have caused productivity to fall and in Bangladesh, insignificant role of allocative efficiency of resources within industry, poor performing public sector, inadequate public sector investment, labor union, firm size and productivity are inversely related are the major factors that might have caused low productivity. From the above discussion , it is found that there is a similiarity between productivity puzzling factor of UK and Bangladesh. Performance and investment in public sector and improper resource allocation are common productivity puzzling factor for both the countries.

Along side of this,there might be some other latent factors which may influence on the productivity to decline.

References

- Blundel, R., Crawford,C and Jin,W (2013). What can wages and employment tell us about the UK's productivity puzzle? *UCL Working Paper*, May
http://www.ucl.ac.uk/~uctp39a/Blundell_Crawford_Jin_IFSwp201311.pdf
Broadbent, B (2012). Productivity and the allocation of resources, Speech given at Durham Business School, 12 September

- <http://www.bankofengland.co.uk/publications/Documents/speeches/2012/speech599.pdf>
Carney, M(2014). Speech Given at Davos CBI British Business Leaders Lunch, 24 January
<http://www.bankofengland.co.uk/publications/Documents/speeches/2014/speech705.pdf>
Corrado,C., Hukten,C. and Sichel,D.(2005) Measuring Capital and Technology: A Expanded Framework,inC.Corrado,J.Haliwanger,andD.Sichel(eds),Measuring Capital in the New Economy, *National Bureau of Economic Research Studies in Income and Wealth*,65,pp.11-45,The University of Chicago press,2005.
- Crawford, C., Jin, W and Simpson, H. (2013). Productivity, Investment and Profits during the Great Recession: Evidence from UK Firms and Workers, forthcoming in *Fiscal Studies*.
- Cribb, J., Emmerson, C and Tetlow, G.(2013). Incentives, shocks or signals: labour supply effects of increasing the female state pension age in the UK, *IFS Working Paper* W13/03
- Disney,R., Jin,W and Miller,H(2013).The productivity puzzles, Ch3 on IFS Green Budget, February.
http://www.ifs.org.uk/budgets/gb2013/GB2013_Ch3.pdf
- Goodridge,P., Haskel,J and Wallis,G.(2013). Can Intangible investment explain the UK productivity puzzle? *National Institute Economic Review*, May<http://ner.sagepub.com/content/224/1/R48>
- Gregg,P.,M and Saldago,M.(2013). *Real Wages and Unemployment in the Big Squeeze*,mimeo.
- Grice,J.(2012). The productivity Conundrum, Interpreting the Recent Behaviour of The Economy, *Office For National Statistics*, August
- Huges,A and Saleheen,J.(2012). UK labour productivity since the onset of the crisis-an international and historical perspective, *Bank of England Quarterly Bulletin* (http://www.ons.gov.uk/ons/dcp171766_277262.pdf)
- Martin,B. and Rowthorn,R.(2012). Is the British economy supply constrained? A renewed critique of productivity pessimism.
- Mishkin, F. S. (2012). *Macroeconomics: Policy and Practice*. Boston: Pearson Education, Inc. Office for Budget Responsibility.(2012). *Economic and fiscal outlook*.Office for Budget Responsibility
- Patterson,P.(2012). The Productivity Conundrum, Explanations and preliminary Analysis, *Office for National Statistics*, Octoberhttp://www.ons.gov.uk/ons/dcp171766_283259.pdf
- Pessoa,P. and Reenen, V.J.(2013). The UK productivity and Job Puzzle: Does the Answer Lie in Labour Market Flexibility? Center for Economic Performance, *Special paper* No.31
- Van Reenen,J.(2013), *Reflection on the UK productivity and jobs mystery*, mimeo. Capital misallocation would affect labour productivity by affecting TFP.
- Broadbent, B (2013). Conditional guidance as a response to supply uncertainty, available at www.bankofengland.co.uk/publications/Documents/speeches/2013/speech678.pdf.
- Simpson, H. (2009). 'Productivity in public services', *Journal of Economic Surveys*, 23, 250–76.
Why the productivity gap? By Jonty Bloom, Business correspondent, BBC News, 21 May 2015
- ONS table 'GDP(O) low level aggregates at constant and current prices' (<http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hoc-data/economy/december-2012/gdp-o--low-level-aggregates-at-constant-and-current-prices.xls>).
- Multifactor productivity growth for the public sector – is calculated for the period 1994–2008 by K. Long and M. Franklin, 'Multi-factor productivity: estimates for 1994–2008', *Economic & Labour Market Review*, 2010, 4, September, 69–72.
- Office for National Statistics, 'Public service productivity estimates – education 2010', March 2012 (<http://www.ons.gov.uk/ons/rel/psa/public-sector-productivity-estimates--education/2010/index.html>).
- Office for National Statistics, 'Public service output, inputs and productivity: health care', March 2010 (<http://www.ons.gov.uk/ons/rel/psa/public-service-productivity/public-service-output--input-and-productivity--healthcare/index.html>).
- Caballero, R. J., & Hammour, M. L. (2000). *Creative destruction and development: Institutions, crises, and restructuring* (No. w7849). National bureau of economic research.
- Disney, R., Haskel, J., & Heden, Y. (2003). Restructuring and productivity growth in UK manufacturing. *The Economic Journal*, 113(489), 666-694.
- Bernard, A. B., & Jones, C. I. (1996). Technology and convergence. *The Economic Journal*, 1037-1044.
- Riley, R., Rosazza Bondibene, C., & Young, G. (2014). Productivity dynamics in the Great Stagnation: evidence from British businesses.
- ONS table 'GDP(O) low level aggregates at constant and current prices' (<http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hocdata/economy/december-2012/gdp-o--low-level-aggregates-at-constant-and-current-prices.xls>).
- Barnett, A., Batten, S., Chiu, A., Franklin, J.,and Sebastián, M.(2014). *The UK productivity puzzle*. Barriol of the Bank's Monetary Analysis Directorate, Quarterly Bulletin 2014 Q2.
- Dewan Zakir H. APO Director for Bangladesh and Secretary, Ministry of Industries, Government of the

- People's Republic of Bangladesh, http://www.apo-tokyo.org/productivity/105_prod.htm
Manufacturing Sector of Bangladesh-Growth, Structure and Strategies for Future Development, Dr. N. C.Nath,
Paper for Presentation at the Biennial Conference “ Global Economy and Vision 2021” during 12-14
July,2012, to be held at the Institution of Engineers, Dhaka
Secondary data of National Productivity Organization, Ministry of Industries, Government of Bangladesh.
APO, http://www.apo-tokyo.org/productivity/105_prod.htm
Rebecca, R., Chiara, Rosazza-B., and Garry, Y., (2015). The UK productivity puzzle 2008-13: evidence from
British businesses, Bank of England, Staff working Paper No.531.
Abul, B.,(2006). Political Economy of Investment, The Daliy Star, September 20, 2011.
Zia, R., (2009). South Asia Citizen Web.
Abul, B.,(2011). Productivity Movement in Bangladesh: Strategy for 2021, Multilateral Conference on
Productivity Movement in Bangladesh: Strategy for 2021.
<http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/Publications/448813-1185396961095/4030558-1185396985915/ch1.pdf>
Akkas, M., A., (2016). *Contemporary Issues in HRM*. Dhaka: A.S. Publication.