Inflation, Inflation Uncertainty and Economic Growth Nexus in Pakistan: A Granger Causality Test

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Abstract

This study analyses the linkage among inflation, inflation uncertainty andeconomic growth for Pakistan using annual time series over the period of 1972-2012. The conditional volatility of inflation is captured by ARCH model and asymmetry of shocks is captured through EGARCH model. The results show that negative shocks to error term have larger impact on variance of inflation than positive shocks. The results of Granger Causality revealed that inflation Granger causes output growth negatively and output growth Granger causes inflation uncertainty positively. In order to achieve and maintain a reasonablegrowth rate, government of Pakistan must pay proper attention to achieve price stability in the country.

Key words: Inflation, inflation uncertainty, output growth, ARCH, E-GARCH and Grange Causality.

I. Introduction

Inflation impliesa sustained rise in the general price level in a country over longer periods. It affects various sectors of an economy in different ways. That is why,it affects production,balance of payments,distribution of income and wealth, governmentexpenditures and revenues just to name a few. Different classes of the people, such as, salaried class,debtors andcreditors, fixed income groups, and wage earners etc. are also significantly affected by inflation. Investors, shareholders, business people, and industrialists and farmers also feel severe effects of inflation. This study analysesthe impactof inflation and inflation uncertainty on output growth in Pakistan.Annual data forthe period 1972-2012 is used in this study. Conditional volatility of inflation is estimated through Exponential Generalised Autoregressive Conditional Heteroskedasticity (GARCH) model.

One of the most important objectives of monetary policy of a central bank is to maintain the price stability in the economy. Importance of price stability or in other words absence of inflation and deflation in the economy can

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be appreciated by the fact that stable prices greatly help the investors in optimally allocating the scarce economic resources to their best uses[1]. This point is further substantiated by Beaudry et al. (2001) who remarked that periods of low inflation uncertainty help the firm managers in channelising the funds into projects with higher returns because of accurate forecast of prices of goods and services. High inflation uncertainty also makes availability of external funds much expensive and resultantly, managers either delay or cancel fixed investment projects. Thus, reduced pace of investment hampers economic growth. In so far as empirical literature on the relationship of inflation uncertainty on economic growth is concerned, it has produced mixed results. Some studies present the evidence on negative impact of inflation uncertainty on economic growth. On the other side, some other studies have claimed this impact to be either positive or insignificant.

Inflation gives rise to uncertainty, particularly when it occurs unexpectedly. Itinduces individuals to protect themselves against it when it widely fluctuates month after month or year after year. It reducesthe power of money holdings to purchase goods and services. Milton Friedman claimed that inflation is always and everywhere a monetary phenomenon. However, this seems to be particularly true for inflation in the long run. But in the short run and medium run a number of other factors, such as, relative elasticities of prices, wages and interest rates also influence the rate of inflation. A mild rate of inflation seems to be beneficial to economic growth. Inflation gradually raises the price level over time. When prices start rising, consumers expect future prices to be still higher and theyincrease present purchases to avoid future inflation. This behaviouronthe part of purchasersleads to raised spending and borrowing in the short term period. This leads to higher aggregate demand which expands the profit margins and ultimately output growth rises. However, too much inflation is also considered as bad as it creates uncertainty which may hamper the growth rate in the economy. Whether inflation and uncertainty aregood or bad with respect to output growth is a question to be empirically investigated.

Motivation for the study

The relationship of inflation with output growth has been a point of controversy in economic literature. However, there hasbeen considerable debate on the inflation and growthrelationship(Gokal and Hanif, 2004, p. 1).This controversy about the relationship of inflation with economic growth has

1.See, for instance, Friedman (1977).

motivated us to undertake this study. The nature of this relation has peculiar implications in so far as the policy options are concerned. This is the very reason that we conducted this study to empirically analyse the relationship between inflation and output growth in Pakistan.

The rest of the paper is unfolded as follows: Section II presents a survey of relevant literature. Empirical methodology and sources of data are explained in section III. Section IV presents estimation and interpretation of empirical estimates of ARCH/GARCH models and section V presents results of Granger causality test. Finally, section VI concludes the study and gives policy implications.

II. Review of Relevant Literature

Judsonand Orphanides (1999) studied the relationship of growth with inflation and inflation volatility for a panel data for the last 30 years. They found a strong negative relationship between inflation and economic growth for all countries of the sample except low inflation countries. They estimated annual measure of inflation volatility by using intra year inflation rates. The results verified a robust negative correlation between economic growth and inflation volatility even when the inflation rate was controlled.Their recommendation was that in order to promote economic growth not only volatility of inflation should be controlled but also the inflation rate as well.

Khan and Senhadji (2001) used panel data for 140 industrial and developing countries over the period 1960-98 to test the threshold effect of inflation on economic growth. The impact of inflation on economic growth is of inverted U-shaped. Within the range of threshold level, inflation promotes economic growth but beyond the threshold range, it hampers economic growth. The estimated threshold levels of inflation for industrial countries ranged from 1 to 3 percent and for developing countries, they ranged from 11 to 12 percent per annum.

Using panel data for 84 countries over the time span 1960-1995, Rousseau and Wachtel (2002) ran rolling panel regressions on 5 years averages of financial development growth and inflation. Their results showed that finance-growth relationship is contingent on a threshold level of inflation ranging from 13 to 25 percent. At inflation rates of higher than this threshold level finance has no impact on growth. In low-inflation environments, financial depth and inflation rates were found the inversely related. Disinflation enhances positive impact of financial depth on economic growth.

Grier et al. (2004) applied multivariate GARCH-M model to post-war data for United States to estimate the impact of volatility of growth and inflation on average rate of growth of output and inflation. They reported four findings: First, uncertainty of inflation adversely affects output growth. Second,

accounting for the effect of uncertainty of inflation, output growth is not negatively affected by lagged inflation. Third, higher inflation causes higher inflation uncertainty. Last, output growth is negatively affected by inflation uncertainty.

Fountas et al.(2006) studied the interaction of inflation and inflation uncertainty for 6 countries of European Union using data over the 1966-1999 period. Inflation uncertainty was measured through EGARCH model. The causal relationship between inflation and inflation uncertainty was tested by Granger method. They found that inflation Granger caused inflation uncertainty in all countries included in the model except Germany. However, inflation uncertainty had no negative impact on output growth in all countries expect the UK.

Lee and Wong (2005) used data for Taiwan from 1965:q1 to 2002:q4 and for Japan from 1970:q1 to 2001:q4 to estimate the impact of financial development on economic growth contingent on threshold inflation rates. Their results revealed one threshold value of inflation for Taiwan but two values for Japan. The threshold level of inflation below which financial development promoted growth in Taiwan was estimated to be 7.25 per cent. For Japan, the threshold level of inflation was reported to be 9.65 per cent. The study further revealed that threshold levels of inflation for both countries occurred in 1970s when the world faced energy crisis.

Fountas et al.(2006) examined the Granger causality among nominal uncertainty, real uncertainty and macroeconomic performance proxied by rates of output growth and inflation. Their results showed that (i) inflation did cause negative welfare effects directly and indirectly, (ii)Central Banks used inflation uncertainty as an incentive to dodge the public by unexpectedly raising inflation in many countries. (iii) Variability of business cycle was positively related with economic growth rate.

Javed and Khan (2010) examined the interactionofinflation and inflation uncertainty for Pakistan.They used monthly data for the period of1957-2007. Inflation uncertainty was measured by ARMA-GARCH model. Their results showed high volatility persistence for inflation. Granger-causality test revealed that inflation had a positive impact on inflation uncertainty.

Rizvi and Naqvi (2010) tested Friedman-Ball and Cukierman-Meltzerhypotheses about asymmetric behaviour of inflation uncertainty using quarterly data for Pakistan over the period 1976:01-2008:02. Inflation uncertainty was modeled as time varying process in the GARCH perspective. To capture the asymmetric impact of inflation uncertainty, they used news impact curve of Pagan and Schwart (1990). According to their results, GJR-GARCH and EGARCH models gave better estimates of inflation uncertainty and its asymmetric behaviour. Furthermore, it was observed that Friedman-

Ball inflation uncertainty hypothesis was supported by Pakistani data and Cukierman-Meltzerhypothesis about inflation uncertainty did not hold true. Asghar et al. (2011) analysed the relationship between inflation and inflation uncertainty in selected SAARC countries.The countries included in the study were: Pakistan, India and Sri Lanka. The sample spanned over the period 1980-2009. Inflation uncertainty was measured as a time varying process in the EGARCH framework. Their results demonstrated that positive shocks to inflation created more uncertainty in Pakistan, India and Sri Lanka. The Granger-causality test indicated that inflation and inflation uncertainty Granger caused each other in SAARC region countries.

Mughal et al. (2012) studied inflation, inflation uncertainty and real output growth nexus for South East Asian Countries over the 1960-2010period. GARCH model was used for measuring volatility in inflation and the asymmetric behaviour of inflation was captured through E-GARCH model estimation. Inflation uncertainty was captured through Conditional variance of inflation.Granger-Causality was applied to estimate the relationship between inflation, inflationuncertainty, and output growth. The results showed that inflation uncertainty did not Granger cause output Growth.

Using quarterly data from 1977:q2 to 2009:q4 for American economy Caglayan et al. (2012) employed Markov regime switching approach to measure the impact of inflation uncertainty on output gap. Inflation uncertainty has a significant negative impact on output gap. But this impact is contingent on volatility regime. During high volatility regime, the aforementioned impact holds but not in low volatility regime. The impact of level of inflation on output gap is insignificant both in high volatility and low volatility regime. They used three different proxies for inflation uncertainty: standard deviation of inflation; conditional variance of inflation estimated through GARCH(1,1) model; and standard deviation of inflation forecasts. The results were robust for any measure of inflation uncertainty.

III. Methodology and Data Sources Methodology

This study has made use of autoregressive conditional Heteroskedasticity (ARCH) methodology and exponential generalisedautoregressive conditional Heteroskedasticity (EGARCH)methodology. The ARCH has proved very useful in cases where the error term is not homoscedastic and a variable is significantly affected by its past values. The structure of ARCH model is given as:

The mean equation is:

$$Inf_t = \mu + \Sigma_{j=1}^{\rho} \theta_j \, Inf_{t-j+} \varepsilon_t \qquad (1)$$

Whereas the variance equation for ARCH model is as:

$$Inf_t = \mu + \Sigma_{j=1}^{p} \theta_j \, Inf_{t-j} + \varepsilon_t \qquad (2)$$

The ARCH model has been criticised for its inability to capture persistence of shocks and presence of asymmetry of positive and negative shocks to the disturbance term. The EGARCH model overcomes these problems. The additional advantage of EGARCH model is that the estimated coefficients of the conditional variance are definitely non-negative. Further, it allows for asymmetric effects of positive and negative shocks to inflation. The following equation represents the estimation of uncertainty of inflation using conditional variance:

$$In(h_t) = \omega_0 + \Sigma_{j=1}^{p} \beta_i \, In(h_{t-1}) + \Sigma_{j=1}^{q} \alpha_j \left| \frac{\varepsilon_{t-j}}{\sqrt{h_{t-j}}} \right| + \Sigma_{j=1}^{q} \gamma_j \frac{\varepsilon_{t-j}}{\sqrt{h_{t-j}}} \qquad (3)$$

Where htis the conditional variance of inflation. The γjcoefficients measure asymmetric effect of shocks to inflation. If these coefficients have negative signs then negative shocks generate more volatility than positive shocks.

After estimating the volatility of inflation we then estimated the impact of inflation and inflation uncertainty on output growth with the help of the Granger Causality test.

The GARCH model is used to capture the difference in the impact of negative and positive shocks to error term on uncertainty of inflation.

Next, we applied Granger Causality method to test the relation between output growth and inflation and inflation uncertainty for Pakistan.

Granger (1969) causality test can be applied to two stationary variables Xt and Yt as:

$$y_t = \alpha_1 + \Sigma_{i=1}^{n} \beta_i x_{t-i} + \Sigma_{j=1}^{m} \gamma_j y_{t-j} \; e_{1t} \qquad (4)$$

$$x_t = \alpha_2 + \Sigma_{i=1}^{n} \theta_i x_{t-i} + \Sigma_{j=1}^{m} \delta_j y_{t-j} \; e_{2t} \qquad (5)$$

Now in equation (4) if all βi are not statistically equal to zero but all γj are statistically equal to zero then xt Granger causes yt. On the other hand, if all θiare statistically equal to zero and δj are statistically different from zero then yt Granger causes xt. Finally, if any βi in eq. (4) and any δj in eq. (5) are not statisticallyequal to zero then a bi-directional causality is said to exist between xt and yt.

Variables Description and Data Sources

This study used annual time series data on growth rate of GDP deflator and growth of real GDP for Pakistan. The sample spanned over 1972 to 2012. The data were extracted from various issues of Pakistan Economic Survey. The variables used in thestudy are explained in the following:

Growth=Annual percentage rate of change of GDP

Inf=Annual percentage rate of change of GDP deflator

Infunc= Uncertainty of inflation as measured by conditional Heteroskedasticity of inflation

IV. Estimation and Interpretation of Results

Before estimating any econometric model based on time series data the variables must be tested for stationarity. It is because a regression of one non-stationary series on other non-stationary variables does not reflect the existence of true relationship between these variables. Rather it gives a spurious relation absurd relation or meaningless relation. Different tests are available for test of unit roots in the series. However, most frequently used tests of unit root are Dickey-Fuller and Fillips –Perron tests.

The format of Dicky-Fuller (1979) is as follows:

$\Delta Y t = \delta Y t\text{-}1 + ut$

(Without drift and trend)

$\Delta Y t = \gamma 0 + \delta Y t\text{-}1 + ut$

(With only drift and no trend)

$\Delta Y t = \gamma 0 + \delta Y t\text{-}1 + \gamma 1\ t + ut$

(With drift and with trend)

The null hypothesis in each case of ADF test is that time series is not stationary:

H0: $\delta = 0$

H1: $\delta < 0$

However, Dickey-Fuller (1979) test is not applicable if error term suffers from serial correlation. In order to remove autocorrelation from error terms the Dickey-Fuller (1979) test is augmented by adding appropriate number of lagged terms of dependent variable.

The general format of augmented Dickey-Fuller (ADF) test is as:

$\Delta Y t = \delta Y_{t-1} + \alpha i \sum^{p}_{t-1} \Delta Y t\text{-}i + ut$

(Without drift and withouttrend)

$\Delta Y t = \gamma 0 + \delta Y_{t-1} + \alpha i \sum^{p}_{t-1} \Delta Y t\text{-}i + ut$

(With only drift and no trend)

$\Delta Y t = \gamma 0 + \delta Y_{t-1} + \alpha i \sum^{p}_{t-1} \Delta Y t\text{-}i + \gamma 1\ t + ut$

(With drift and trend)

The null and alternative hypotheses are the same as in Dickey-Fuller (1979) test.

The general format of Philips-Perron((1988) is as follows:

$Yt = \delta Yt\text{-}1 + vt$

(With no drift and no trend)

$Yt = \gamma + \delta Yt\text{-}1 + vt$

(With drift and no trend)

$Yt = \gamma + \delta Yt\text{-}1 + \sigma (t - T/2) + vt$

(With drift and trend)

We applied augmented Dickey-Fuller test and Phillips-Perrontest to assess

the order of integration of the variables of the model. The results of these testsare given in Table-1.It is clear from Table-1 that all variables are integrated of order 0. They are stationary at level at one percent significancelevel. This is what is exactly expected because economic growth and inflation are growth rates of real GDP and GDP deflator, respectively.

Table-1: Results of Unit Root Test

Variable	Augmented Dickey-Fuller Test		Phillips-Perron Test	
	At Level	At First Difference	At Level	At First Difference
Growth	-4.79*	-9.08*	-4.82*	-21.67*
Inf	-5.14*	-7.41*	-5.17*	-19.17*
Infunc	-6.22*	10.71*	-6.22*	-25.19*

Estimation of ARCH/EGARCH Models

The volatility of inflation is measured through the ARCH model and the asymmetric effect of shocks on variance of inflation is measured though EGARCH model. The results of estimation of mean and variance equations based on ARCH(1) and E-GARCH(1,1) are reported in Table 2. It is clear from Table-2 that current period inflation depends on its previous value as indicated by positive value of coefficient on lagged inflation i.e. 0.32. It indicates that inflation in Pakistan is self-enforcing. In the variance equation of ARCH(1) model the coefficient on auto-regression term is not statistically significant whereas in the E-GARCH(1,1) model it is significant at 5 percent level of significance. Of particular interest is the negative sign of the estimate of α in the estimation of E-GARCH(1,1) model. This is statistically significant at 5 percent level and indicates that negative shocks to the error term produce asymmetrically larger effects on variance of inflation as compared to positive shocks in case of Pakistan. The coefficient γ has a positive sign and is significant at 10 percent level of significance**.**

Table-2: Results of ARCH(1) and E-GARCH(1) Estimation

ARCH(1)					E-GARCH(1,1)			
Mean Equation								
Varable	Coefficient	Std. Error	Z-Statistic	Prob.	Coefficient	Std. Error	Z-Statistic	Prob.
C	7.252482	1.799495	4.030289	0.0001	7.368595	2.535798	2.905829	0.0037
Inf(-1)	0.320421	0.164584	1.946857	0.0516	0.305151	0.124833	2.444473	0.0192
Variance Equation								
ω	9.121259	6.667291	1.368061	0.1713	2.362114	1.956697	1.207195	0.2274
β	0.541714	0.539787	1.003570	0.3156	1.091126	0.494193	2.207894	0.0216
α					-0.033561	0.013643	-2.45994	0.0193
γ					0.054279	0.035877	1.512919	0.09156

V. Results of Granger Causality Test

After the analysis of inflation and inflation uncertainty we move to the analysis of Granger causality. The results of pairwise Granger test are reported in Tables-3.Firstly, we analyse the causality between inflation and economic growth in Pakistan. The null hypothesis that inflation does not Granger Cause Growth is rejected at 5 percent level of significance. The sign on the coefficient of inflation in the equation of growth is negative.Thus we conclude that inflation is a significant hampering factor for economic growth in Pakistan. The null hypothesis that Growth does not Granger Cause inflationcannot be rejected on the basis of F-statistic. It means thereexists a unidirectional causality running from inflation to economic growth in Pakistan. Given the negative sign, we can say that higher inflation lowers growth of GDP in Pakistan.

Secondly, we analyse the causality between growth and inflation uncertainty. As the p-values of F-statistic in Table 3 showsthat we can conclude that there is no Granger Causality between economic growth and inflation uncertainty in Pakistan. We can rest assured that uncertainty of inflation is not detrimental to economic growth. Last, a look at estimated values of F-statistic and their associated p-values reveal that the null hypothesis that inflation uncertainty does not Granger Cause inflation cannot be rejected at any acceptable significance level. On the other hand, the null hypothesis that inflation does not Granger Cause inflation uncertainty is rejected at 5 percent level of significance as the p-value is less than 0.05. The sign of coefficient of inflation in the equation of inflation uncertainty is positive. It

means that higher inflation leads to greater uncertainty about inflation. The nutshell of this analysis is that inflation affects economic growth negatively and inflation uncertainty positively in Pakistan. The negative impact of inflation on output growth has also been supported by Mughal et al. (2012) for four East Asian countries and by Gokal and Hanif(2004) for Fiji.

Table-3: Pairwise Granger Causality Results from E-views

Pairwise Granger Causality Tests
Date: 07/13/13 Time: 18:23
Sample: 1972 2012
Lags: 2

Null Hypothesis:	Obs.	Sign	F-Statistic	Probability
INF does not Granger Cause GROWTH	38	-	3.65116	0.03694
GROWTH does not Granger Cause INF		-	0.91905	0.40887
GROWTH does not Granger Cause INFUNC	38	-	0.94438	0.39918
INFUNC does not Granger Cause GROWTH		-	0.88222	0.42340
INF does not Granger Cause INFUNC	38	-	0.42456	0.65748
INFUNC does not Granger Cause INF		-	4.67705	0.01606

VI. Conclusion and Policy Implications

The nexus of inflation and inflation uncertainty has occupied the focus of researchers during the last two decades. In view of its importance, thispaperanalysed the interaction between inflation and uncertainty of inflation using ARCH and EGARCH methodology and annual time series data over the period 1972-2012 for Pakistan. According to results of this study, inflation in Pakistan is auto regressed, that is, it positively depends on its lagged values. Further, the estimates of EGARCH model revealed that negative shocks to the error term cast have larger impact on the conditional

variance as compared to positive shocks.

After calculating the volatility of inflation, this study conducted Granger Causality test to check the existence of causal relation among inflation, output growth and uncertainty of inflation. The results of Granger Causality test verified that inflation positively affected inflation uncertainty but it negatively affected output growth in Pakistan. No evidence has been found in favourof the causal effect running from growth to inflation, from INFUNC to Growth, from Growth to INFUNC or from INFUNC to inflation in Pakistan.

The policy implied by the results of this study is that since inflation negatively affects economic growth in Pakistan, therefore, government must take care of inflation and maintain price stability in the economy. Further, it has been empirically verified that higher inflation leads to aggravateuncertainty about future inflation rates. It is high time that government must pay proper attention to price stability in the economy so that a reasonable rate of economic growth could be achieved and sustained.

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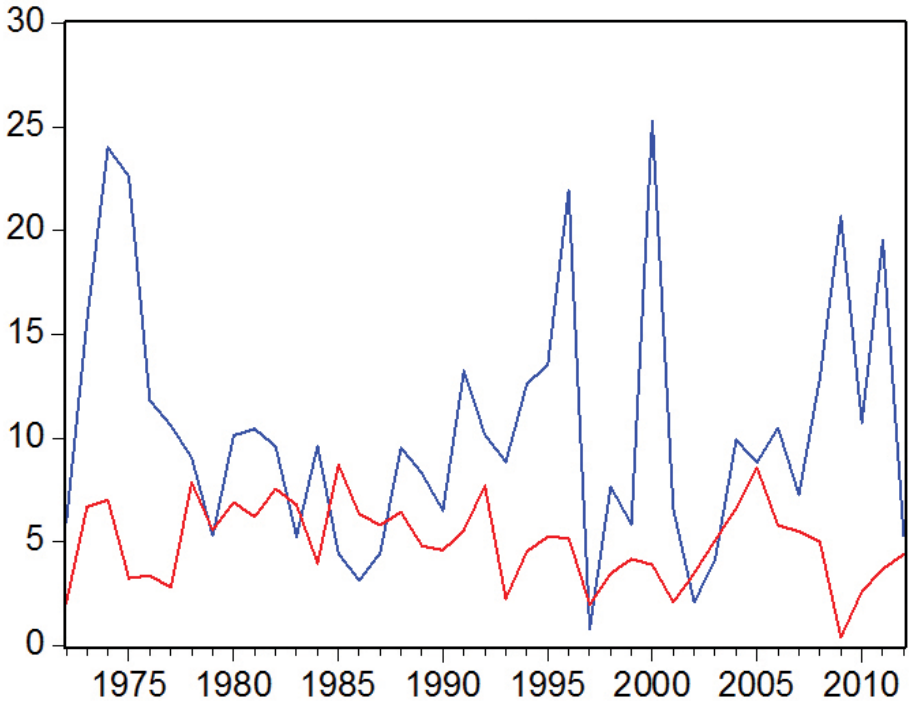
Appendix

Figure 1: Trends in Economic Growth and Inflation in Pakistan



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The Impact of Career Planning on Career Satisfaction: A Mediation Analysis of Career Development

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Abstract

Career planning plays a vital role in satisfying employees of the firm. Therefore, the purpose of this empirical research study is to examine the relationship of career planning and career satisfaction in banking sector of Pakistan. Furthermore, the mediation analysis has also been conducted through career development. A self-administered questionnaire is used for the collection of data from 301 banking employees. Principal component analysis and Regression technique have been used for the analysis of data. Results reveal that career planning has significant positive effect on career satisfaction. Further the mediation is also significantly confirmed from the data. The implication of the study has also been discussed in the research paper.

Key words: Career planning, career development, career satisfaction, banking sector, PCA.

Introduction

In this era of emerging economies, every organisation is trying to survive using different strategies such as cost minimisation, mergers and acquisitions and ameliorating the use of technology for its operations (Baruch, 2004; Appelbaum, Ayre and Shapiro, 2002; Greenhaus, Callanan and Godshalk, 2000). It is the employees of the firm who perform different activities for the success of organisational operations. So, organisations need to keep their focus in managing and developing their employees accordingly. The organisation key responsibility is to focus on their employee career planning and development (Baruch, 2004). The organisations can achieve competitive advantage through managing their human resource efficiently and effectively. This competitive advantage can be achieved by focusing on the HR capabilities that are imperfectly imitable (Qureshi, Kumar and Kumar, 2007). Career planning is considered as the most vibrant tool for getting such competitive advantage.

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Many studies have been conducted so far that discuss specific career issues such as career management and planning. But such research has been limited to only developed economies of the world; however, few research studies have discussed the role of career planning in the developing countries (Budhwar, 2003; Aryee, 1999; Rees et al,2005) and we could find only one study in the context of Pakistan such as Zealand et al. (2010) who conducted an exploratory study on career planning in Pakistan in which they highlighted the importance of career orientation for an individual and organisation as well but their study cannot be generalised in specific setting due to its methodology constrain.

The banking sector plays a significant role in the economic development of the country and more specifically the output of such industry is based on the quality of its human resources. Unfortunately, the banking industry put their core focus on enhancing their financial efficiency but the development of employee attitude, skills and knowledge is largely ignored in this area. It is evident that with the efficient use of human resources, an organisation can achieve its competitiveness in financial sector. So, it can be concluded that banks should pay more focus on developing such strategies that help in satisfying career concerns of existing employees. The primary purpose of current study is to examine the role of career planning on job satisfaction with the mediating role of career development in the banking sector of Pakistan.

LITERATURE REVIEW

Career planning

Hall and Associates (1986) defined career planning as long term process based on set of activities and related attitudes that play a significant role in individual professional life. Further, it is argued that career is not only based on long term process, it is basically a procedure of creating such attitudes and behaviours that shape one's work life for the achievement of career goals (Puah and Ananthram, 2006). Career planning is not the obligation of an individual employee, it is basically the responsibility of organisation to plan and manage their employees through balancing career needs and organisation demands (Brauch, 2004). Hence, career planning plays a pivotal role in enhancing employee's performance.

Career planning is a significant tool of getting necessary knowledge, skills, and abilities efficiently and effectively (Gray et al., 1990). In order to achieve this objective, an individual needs to find a best match of its abilities with its job to make a better career choice (Budhwar, 2003). The professionals around the globe always exploit those opportunities that

have specific skill development which ultimately helps in improving career satisfaction. Hence, each individual should develop such KSA (knowledge, skills and abilities) which is related to the nature of job and that ultimately helps in achieving personal and organisational goals.

Career development

It is discussed widely in the literature that organisation human resource is considered to be a source of competitive advantage for its firm (Brauch, 2004). It not only helps in developing the organisation but also gives opportunity to employees to develop their KSA according to organisation set objectives. Employees always preferred to work with the organisation for achieving long term benefit. The term career development is such tool that helps to develop skilled employees with relevant knowledge and expertise that are according to organisation objectives (Bridge, 1994).

Previously, it is considered that career development is individual responsibility but later on, it is concluded that career development is ongoing process which needs support from the organisation to develop employees over a span of time (Gutteridge, 1993). The career orientation is merely based on individual ability to find best match between job and KSA but now it is organisation personality to build a long term harmony between career and KSA relationship (Brauch, 2004). This paradigm shift of individuality to mutual accountability (employee as well as organisation) is a key source of creating a sense of commitment in employee and firm relationship (Brauch, 1998). Hence, the view of mutual accountability provides a sense of job security to employees which help in creating job satisfaction (Rousseau, 1995).

When organisation shows its interest in developing employees then employees become more concerned for the development of organisation by performing well. Hence, career development is a win-win situation for both the organisation and employee as well (Hall, 1976; Schein, 1978)

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Career Planning, Career Development and Career Satisfaction

Career planning and career development are widely interrelated with each other (Pazy, 1988; Gutteridge, 1986; Hall, 1976). Many studies have discussed that career planning has narrow scope, however, career development is more related with the long term success of organisation. Gutteridge (1986) explains that career development is such human resource activities that compare the employees KSA with objectives of the firm. It is also termed as a tool of developing the employees efficiently and effectively to meet their job requirements (Gray et al., 1990).

The key objective of career development is to create symmetry between

organisation goals and employees KSA and to motivate them to achieve the firm's objectives. It is also discussed widely that career planning ensures that an employee is able to achieve firm's long term objectives effectively (Zealand et al. 2010). Hence, efficient career planning helps in ameliorating employee's satisfaction which resultantly gives them confidence to work hard to achieve desire level of firm performance.

Data And Methodology

The purpose of this study is to determine the impact of career planning on career satisfaction in the banking sector of Pakistan. For the purpose of data collection we adopted a survey questionnaire with seven point Likert scale ranging from "strongly agree" to "strongly disagree". The instrument contains 27 questions out of which 4 are related to personal data defining the demographics of the respondents and 22 are related to the subject study. A rating and nominal type of variable has been used in questionnaire. Our instrument includes 11 questions on career planning, 5 questions on career development and 7 questions on career satisfaction which have been adapted from Puah and Ananthram (2006).

Our analysis is done in 3 different stages. First is the reliability of the questionnaire which was already given in the source but for the reconfirmation, the reliability of the instrument was reinsured through Cronbach's alpha value using SPSS 16.0. Second is principal component analysis that is done using varimax rotation method for the data reduction. Third is the regression analysis applied to find the total effect size of independent variable of the dependent variable.

The questionnaire was sent to 350 respondents and only 301 were received back. The valid percentage of response received was 60.2 %. Out of them, 274 were male and 27 were female which is 91% and 9% percent respectively. More about the demographics is the age group of the respondents that 24 (8.0%) of the respondents were less than 25 years of age, 231 (76.7%) respondents were aging from 25 to 35 years, 43 (14.3%) respondents were aging from 35 to 45 years and only 2 (0.7%) of the total respondents were more than 45 years of age. Out of the total respondents, only 6 (2.0%) of the respondents were doing their job as part time job where as remaining 295 (98.0%) of the respondents were working as their permanent job. In addition to this, 141 of the respondents were working in local banks where as 160 of the respondents were working in multinational banks. It is also shown in the Table 1.

TABLE 1
Demographic Profile of Respondents

Respondents' Demographics	Frequency	Percentage
Gender (N=301)		
Female	27	9.0%
Male	274	91.0%
Age (N=301)		
less than 25	24	8.0%
25 - 35	231	76.7%
35 - 45	43	14.3%
45 years plus	2	0.7%
Nature of Job (N=301)		
Permanant	295	98.0%
Part time	6	2.0%
Organisational Level (N=301)		
Local	241	46.8%
Multinational	160	53.2%

Methodology

Principal component analysis is a statistical tool for data reduction. It is basically a linear combination in which each observed variable is optimally weighted. If we have cluster of variables that are correlated then principal component is an effective way to reduce those correlated items up to minimum level where chances of error in measurement are lesser. Our study used principal component analysis in order to develop factors from different items on each construct i.e. career planning, career development and career satisfaction according to their reliable scales respectively. PCA develops a principal component in the following manner.

PC =b1 (X1) + b2(X2) + ... bn(Xn) eq. 1
Where
PC = Principal Component
bn=Regression weight for observed variable n
Xn= subject's corresponding score on observed variable
The study used PCA with Varimax rotation method to confirm the orthogo-

nal components. This is important to perform a test of Kaiser-Meyer-Olkin (KMO) to measure sample adequacy and Bartlett's test of sphericity before conducting factor analysis. These tests are used to retain the principal components criterion. The criterion is based on number of assumptions: 1) the Eigen value of components must be greater than 1.0 for each construct. 2) The value of factor loading must be greater than .40 for the loading of each item on its respective factor. Reliability test was also conducted in order to ensure the internal consistency of the items.

Present study also employs Regression analysis to examine the effect of career planning on job satisfaction of Pakistan. The regression equation of the study takes the form of

$$JSi = C + b(CPi) + Ui \quad \text{eq. 2}$$

Where, JS and CP represent job satisfaction and career planning respectively.

Empirical Findings

The present study used 11 items for career planning, 5 items for career development, and 7 items for career satisfaction. All the items were measured on a seven point Likert scale which ranges from 7 "strongly agree" to 1 "strongly disagree".

To ensure the reliability and inter-item consistency of the constructs (career planning, career development, and career satisfaction), present study computes the value of Cronbach's alpha of the data. The value of Cronbach's alpha for career planning, career development and career satisfaction are .955, .909, and .919 respectively (See Table 2). This shows that all the multi-item constructs internally consistent and reliable.

Table 2
Reliability of Measurement

Constructs	Valid N	Number of Items	Cronbach's Alpha
Career Planning	301	11	.955
Career Development	301	05	.909
Career Satisfaction	301	07	.919

In order to confirm the construct validity (both convergent and divergent), we apply factor analysis using Principal Component Analysis (PCA) with Varimax rotation method. The output of PCA is presented in Table 3, 4, 5 respectively. Kaiser-Meyer-Olkin measure of sample adequacy and Bartlett's

test of sphericity are used to check the sample adequacy of the data. The results of KMO are presented in Table 3 which shows strength of connection between variables. The value of KMO varies between 0 and 1. According to Hinton et al. (2004), the KMO value of 0.5 is considered poor, 0.6 is acceptable, and value closer to 1 is better. KMO values for career planning, career development and career satisfaction are .921, .848, .812 respectively. Bartlet's test of sphericity is applied to confirm the relationship among the items of each construct (see table 3). It is general rule of thumb, if the p value < 0.05 (indicates the existence of relationship among variables) then it is acceptable to go with factor analysis. The results show that the significance level of chi-square is less than .001 in the case of all three constructs so, null hypothesis of no co relation is rejected. Both test KMO and Bartletts confirm us that it is worth proceeding to go with factor analysis.

Table 3
KMO and Bartlett's Test

Constructs	Number of Items	KMO Measure of sample adequacy	Bartlett's test of Sphericity Chi-square	Bartlett's test of Sphericity Sig.
Career Planning	11	.921	.3162.24	.000
Career Development	05	.848	1057.06	.000
Career Satisfaction	07	.812	1841.21	.000

Table 4
Eigen Values and Total Variance Explained

Constructs	Components	Initial Eigen values		
		Total	% of Variance explained	Cumulative %
Career Planning	Comp 1	7.627	69.340	69.340
Career Development	Comp 1	3.687	73.733	73.733
Career Satisfaction	Comp 1	4.745	67.786	67.786

It is a general rule of thumb that only those components of the constructs

are retained as principal components for factor analysis which have Eigen value greater than 1 (Hinton et al., 2004). Table 4 summarises the Eigen values and explained total variance for the extracted components. Only one principal component was extracted from constructs of career planning, career development and career satisfaction explaining 69.34%, 73.73%, and 67.78 % of the total variance respectively.

Table 5
Factor Loadings

Variable	Item	Factor Loading
Career Planning	I have a plan for my career.	.660
	I know my career goals and objectives.	.764
	I know my career interests and how to apply these to my job.	.650
	I spend time reviewing my career plan.	.658
	I am able to analyse and assess my abilities, interests and values to determine my career options.	.671
	I have identified areas where I need to improve my skill and knowledge level.	.765
	I know about general economic and societal trends that affect my career.	.625
	My awareness of career alternatives has helped to clarify my career goals and means for achieving them.	.696
	Having an accurate view of my strengths, weaknesses and career direction helps me to have realistic expectations for career outcomes.	.726
	Using information about how well I am doing at work, I formulate plans to achieve specific career goals.	.705
	I have a strategy for achieving my career goals.	.707

Career Development	A formal process to attain career development is important to me.	.748
	Career development is important to me.	.901
	I understand the need for continuous career development.	.872
	Career planning tools are essential to support my career development.	.884
	Career management programs are essential to support my career development.	.879
Career Satisfaction	Generally speaking, I am very satisfied with my job.	.624
	Most of the things I do on this job are useful and important.	.703
	The work I do on this job is very meaningful to me.	.741
	I feel a very high degree of personal responsibility for the work I do on this job.	.724
	I feel a great sense of personal satisfaction when I do my job well.	.685
	I feel a sense of achievement in my career.	.786
	I feel satisfied and happy when I discover that I have performed well on this job.	.575

The factor loadings for all the constructs are presented in Table 5 which shows that how each item loads into its respective principal component. The results clearly show that we get one principal component for each construct and therefore, all the items are loaded into its relative principal component. It is believed that all the items related to one construct should be loaded above 0.40, a bare minimum suggested value by IS research. PCA extracts one component for each construct of career planning (consists of 11 items), career development (consists of 5 items), and career satisfaction (consists of 7 items). The extracted values of loadings of all the items used in the study vary from 0.57 to 0. 90. Hence, the overall results of the factor analysis satisfy the criteria of construct validity of the data.

Table 6
Career Development is Dependent Variable

Regressor	Coefficient	Standard Error	t - Ratio
Constant	8.471	0.045	0.000
Career Planning	0.620	0.045	13.658*

Note: "*" & "**" shows the level of significance at 0.01 and 0.05 respectively

Necessary Statistics

R^2	Adj. R^2	F - Statistic	Prob. (F – Statistic)
0.384	0.382	186.546	0.000

Table 6 represents the regression results for career development and career planning. Results show that career planning has positive significant ($p<0.01$) effect on career development. In Regression analysis, the value of R^2 (0.384) shows that career planning explains 38% of the variance regarding career development. However, this can also be confirmed through coefficient value of beta (ß = 0.620, Std.error = 0.045).

Table 7
Career Satisfaction is Dependent Variable

Regressor	Coefficient	Standard Error	t - Ratio
Constant	-0.004	0.048	-0.086
Career Planning	0.571	0.048	11.993*

Note: "*" & "**" shows the level of significance at 0.01 and 0.05 respectively

Necessary Statistics

R^2	Adj. R^2	F - Statistic	Prob. (F – Statistic)
0.326	0.324	143.825	0.000

Similarly, Table 7 shows the regression results for career development and career satisfaction. The results show that career development has significant effect on career satisfaction (t-ratio = 11.99, P<0.01). The output also shows that career development (R^2 = 0.326) explains 32% of variation in career satisfaction.

Table 8
Career Satisfaction is Dependent Variable

Regressor	Coefficient	Standard Error	t - Ratio
Constant	-0.002	0.049	-0.45
Career Planning	0.521	0.049	10.546*

Note: "*" & "**" shows the level of significance at 0.01 and 0.05 respectively

Necessary Statistics

R^2	Adj. R^2	F - Statistic	Prob. (F – Statistic)
.272	0.270	111.211	0.000

Furthermore, the results of Table 8 reveal that career planning has significant effect on career satisfaction. Principal component analysis extracted only one component each for career planning and career satisfaction. In the regression analysis, the value of R^2 (.272) shows that career planning explains 27% variation in career satisfaction. Though, both effects are positive and significant at less than one percent.

Table 9
Career Satisfaction is Dependent Variable

Regressor	Coefficient	Standard Error	t - Ratio
Constant	-.004	.046	-.088
Career Planning	.273	.059	4.660*
Career Development	.402	.059	6.863*

Note: "*" & "**" shows the level of significance at 0.01 and 0.05 respectively

Necessary Statistics

R^2	Adj. R^2	F - Statistic	Prob. (F – Statistic)
0.372	.368	87.789	.000[a]

Table 9 shows that mediation results of stated hypothesis that is career development mediate the relationship of career planning and career satisfaction. According to Baron and Kenny (1986), there are three assumptions that need to be fulfilled before conducting mediating analysis. These assumptions include i) the independent variable should have significant effect on mediating variable, ii) the mediating variable should have significant effect on dependent variable, and iii) independent variable should be significant associated with dependent variable. All the three assumption are meeting the criterion of mediation in our analysis which shows that the direct effect of career planning on career development, career development on career satisfaction and career development on career satisfaction is significant.

In Table 9, we entered both variables career planning and career development as independent variables to check the mediation. According to Baron and Kenny (1986), if both variables P values are significant then there is partial mediation exists in our model and if mediating variable P value is significant and the P value of independent variable turns into non-significant value then there is full mediating exists in our model. The results reveal that our both variables career planning (ß=0.273; $p < 0.001$) and career development (ß=0.402; $p < 0.001$) are significant which shows that career development partially mediated between career planning and career satisfaction.

Discussion And Conclusion

The focus of the current study was to determine tha role of career planning in career satisfactin with the mediating role of career development. In support to the literature, the individuals, who are very clear about their own self analysis, about what strengths and weakness they hold, plan their career goals accordingly. As the individual receives support from the external environment (organisations) in form of career development, career satisfaction is achieved.

The empirical findings of the study have showed the results that career planning has a positive significant relationship with career development which is consistent with the study of Puah and Ananthram (2006). The results have also shown that as the career development increases the level of career satisfaction also increases (Puah and Ananthram, 2006; Locke, 1976; Hall, 1976). Hence, it can be concluded that the career development is directly contributing to achieving job satisfaction. Overall, the findings have im-

plications in the field of career development and, more specifically for the banking industry of Pakistan. The study clearly demonstrates a significant positive effect of career planning on career development. The results of the study are consistent with previous literature of Hall and Associates (1986). The findings also show a strong relationship of job satisfaction with career development. Hence, the study is novel in exploring the mediation of career development between career planning and job satisfaction. Literature empirically investigates career stages and career paths (Jepsen and Dickson, 2003; Baruch, 2004) but least research has been found that studies the role of career development (Baruch, 1998). Correspondingly, least research has been found that pays attention on organisation and individual outcomes such as career development (Chen et al., 2004; Appelbaum et al., 2002).

Implication

This study is very helpful for the human resource managers for retaining their skilled employee with the organisation, increasing the satisfaction level of the employees especially in the banking sector of Pakistan. This study has emphasised the importance of planning individuals' career by analysing owns strengths, then analysing the environment for available opportunities and threats and in the end achieving career satisfaction. The study is also a gate way for future research for analysing job satisfaction and career achievement as an outcomes of career planning. These significant findings also have implications for the human resource management (HRM) and human resource development (HRD) departments of banking sector of Pakistan.

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