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Linkages between inflation, economic growth and terrorism in Pakistan

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ABSTRACT

This paper investigates the linkages between inflation, economic growth and terrorism using annual frequency data over the period of 1971–2010, the maximum time period for which consistent data is available for Pakistan. The ARDL bounds testing approach to cointegration has been applied while robustness of long run relationship is established by using rolling window approach. The empirical evidence confirms the cointegration between inflation, economic growth and terrorism in Pakistan. An increase in inflation raises terrorist attacks while economic growth is also a major contributor to terrorism. Moreover, bidirectional causality is found between inflation and terrorism as investigated by the VECM Granger-causality approach while variance decomposition approach also supports the findings by the VECM Granger causality analysis. Our results therefore points to benefits of pursuing sustainability of low inflation in reducing terrorism. However, it also implies some difficulties for policy-makers in Pakistan in their pursuit for economic growth as latter would result in an increase in terrorism activities crowding out some of the benefits of economic growth.

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1. Introduction

A variety of definitions on terrorism are available in defense economics literature, but the most frequently used definition is a combination of three elements (i) use of extreme violence (Enders and Sandler, 2006), (ii) nature of terrorist acts by individuals and organizations (Nasir et al., 2011), and (iii) publicity (Llussá and Tavares, 2007). Terrorism is said to be known as an intentional exercise of peril and warning to practice violence by an entity versus opponents in order to achieve personal, social, economic and political gains by pressure of a significant addressee ahead of the actual and direct sufferers (Enders and Sandler, 2006). The components of terrorism comprise of bullying, violence and social, political and ideological aims. The terrorist attacks tend to be hit and miss as well as arbitrary to create strain in the atmosphere along with the addressees. This, in turn, leads the government representatives to connect with the terrorists and make a settlement (Yildirim et al., 2007). Pakistan has faced the most horrible terrorist activities in the world after 9/11. Despite the consideration of many aspects of terrorism in defense economics, the influence of terrorism in Pakistan has not been seen in terms of inflation and economic growth.

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The main objective of this study is to investigate the impact of inflation on terrorism in the presence of economic growth in case of Pakistan. The study contributes in five ways to existing defense economics literature: (i) It is a unique effort to fill the gap on defense economics in case of Pakistan, (ii) Clemente et al. (1998) and Zivot and Andrews (1992) structural break unit tests are used to test the order of integration of the variables, (iii) the ARDL bounds testing approach is applied to investigate long run relationship; (iv) the rolling window approach is used to test the robustness of long run relationship, and (v) direction of causal relation is investigated by applying the VECM Granger causality approach. Our findings show that a rise in inflation raises terrorist attacks and economic growth also contributes to increase in terrorism. The VECM Granger causality analysis indicates the bidirectional causal relationship between inflation and terrorism in Pakistan.

1.1. Backdrop of Pakistan's economy

Terrorism is a plausible course of action for the poor to achieve necessary resources. In fact many people of poor class will tradeoff their own lives to generate financial resources for their families, which pursue them for terrorist acts. Many researchers have debated over the economic impacts of terrorism in defense economics [for example, Berman, 2003; Epstein and Gang, 2004; Glaeser, 2005; Charney and Yakatan, 2005; Berman and Laitin, 2005; Ferrero, 2006; Llussá and Tavares, 2007] but this particular issue i.e. effect of inflation on terrorism is ignored by all the researchers of

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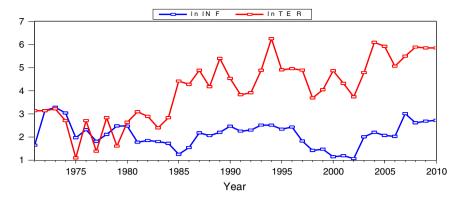


Fig. 1. Trends in inflation and terrorist attacks in Pakistan.

the field of defense economics.¹ This study is a unique effort to fill the gap in the field of defense economics in case of Pakistan (Fig. 1).

Improper planning and implementation of economic policies, deteriorating law & order and governance situation, deficit in balance of payments, high levels of nonproductive military spending, rising external and internal debts and, high debt services on external debt have inversely affected economic growth.² The high unemployment rate in the country is due to backwardness of agriculture (more than 90% population of village economy is involved in agriculture sector and related activities). The demand for unskilled labor in industrial as well as agro-related sectors has decreased due to the adoption of advanced technology (capital intensive techniques) which reduced the job opportunities for unskilled labor. This situation has increased income inequality and hence poverty in the country.³ Governments did not pay due attention towards establishment of technical institutions to train this bulk of unskilled labor. Government expenditures on security have been increasing since 2001 at the expense of development expenditures due to hike in terrorism. Industrial sector has not been able to contribute much to absorb the increasing rate of labor force due to electricity shortfall for the last five to eight years. In fact, electricity shortfall has already affected established industries, which increased the unemployment rate and decreased the domestic production. Moreover, low quality and high cost of products by agriculture and industrial sectors have reduced the demand for goods due to hike in general price level. This further contributed to increase unemployment and no attempt was initiated to overcome this crucial issue.

Power shortages not only affected the industrial sector but also distressed the economy as a whole. The corrupt tax system adds to problems by not collecting sufficient revenue to spend on developmental projects. Historically, the government has tried to fill the budget deficit by increasing indirect taxes rather than direct taxes, which declined investment and employment opportunities. Such an environment affected local investment and international financial crisis further increased unemployment due to insufficient foreign direct investment in Pakistan.⁴

The population growth rate of Pakistan is considered the highest in the region and is putting pressure on household income through increased demand. Inefficient legal system has allowed for hoarding and smuggling practices that has furthered accelerated the inflationary pressure in Pakistan. The rising prices of electricity, gas and oil also played their role to increase the cost of production that further increased inflation. The coalition of Pakistan with USA to fight against terrorism affected fiscal policy and major chunk of resources. These resources have been diverted away from developmental pool and are wasted due to security threats. These security threats reduced the production in the country and speed up the wave of consumer inflation. Rising inflation in Pakistan is attributed to insufficient investment, lack of industrial estates, adverse shocks in supply, capital shortage and market imperfections and low foreign direct investment etc.

2. Literature review

Existing literature provides various determinants of rising terrorist incidents in developed as well as in developing economies. One school of thought lead by Gurr (1970) identified poverty; income inequality and political violence are the main determinants of terrorism. Other school lead by Tilly (1978) revealed that terrorism is increased due to rising violence and political opportunistic structure. Muller and Seligson (1987) extended the models of Gurr (1970) and Tilly (1978) by incorporating income and land inequality and, reported that high land inequality tends to cause political violence which increases terrorists' activities. London and Robinson (1989) explored that investment by multinational companies in developing economies has created high

¹ Inflation plays a vital role in macroeconomics management. In classical economic theories, it is argued that money supply has no impact on real variables of an economy. In real term, inflation has no impact on resource allocations and economic efficiency under perfect competition as economy works at full employment level. Johan Maynard Keynes discussed the influence of inflation under, over and above national income equilibrium due to monopolistic behavior of the producer. High inflation in an economy may cause un-equalized allocation of resources. Theories of inflation discuss the relationship between unemployment and wage rate. Friedman, (1960) argued that inflation is a monetary phenomenon and has no real impact on the macroeconomic variables. Furthermore, Mankiw and Reis, (2003) pointed out that "most people earn their income by selling their services and labor costs rise with inflation therefore inflation does not reduce people's purchasing power" itself. The real income of the people is determined by their productivity, which in turn depends upon the availability of physical capital stock, human capital, natural resources and production technology to be used for production process. On other hand, nominal income is determined by inflation which depends on the growth of money supply. Inflation is caused by growth of money supply, taxes through shoe-leather costs, anticipated inflation costs, and menu costs which may cause to macroeconomic inefficiency in resources allocation. Theory of rational expectations by Lucas, (1972) reveals that people may be temporarily confused in decision making regarding savings, investments, wages and income in real terms. This situation may put pressure on the poor segments of population by reducing their purchasing power and as a result, they are further forced down into poverty trap. In such an environment, the poor are more vulnerable to rising inflation compared to the elite class of population. This creates problems for the entire population but leaves the poor struggling to meet ends. Furthermore, inflation affects more to unskilled labor who has little or no access to financial resources in order to protect its savings from inflation. As a result inflation increases income inequality and hence poverty (Shahbaz et al., 2010).

² Pakistan's economy is characterized by low economic growth (4.1%), high unemployment (15.2%) (Pakistan Affairs, 2011) and high inflation rate (13.4%) in 2009–10 (WDI, 2011).

³ More than 40% of the population is living below the poverty line.

⁴ Fiscal and monetary policies have not been working properly in Pakistan. These policies fail to encourage the domestic investment and attract the foreign direct investment in Pakistan. Monetary policy has played its adverse role by increasing interest rates which raised the cost of loans in the country. Similarly fiscal policy has been unable to mobilize the economic resources to create employment opportunities for the labor force.

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