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Lahore School of Economics

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Performance of Pakistan

*Pervez Tahir*  
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## Foreign Capital and Economic Performance of Pakistan

Minh Hang Le and Ali Ataulloh\*

### Abstract

*This paper reviews the trends of two types of foreign capital inflows, namely foreign aid and foreign private investment, to Pakistan. Like other developing countries, the volume of foreign aid to Pakistan has been decreasing. Meanwhile foreign private investment to Pakistan has increased, though not as sharply as that to other developing Asian countries. The study finds that the impacts of foreign capital, aid and private investment on the economic performance of Pakistan have been insignificant. This paper suggests that these consequences are due to the inadequate development of domestic institutional structure, human capital, and indigenous entrepreneurship.*

### 1. Introduction

If you want to build a factory, or fix a motorcycle, or set a nation right without getting stuck, then classical, structured, dualistic subject-object knowledge although necessary, isn't enough. You have to have some feeling for the quality of the work. You have to have a sense of what's good. That's what carries you forward. This sense isn't just something you're born with, although you are born with it. It's also something you can develop. It's not just 'intuition', not just unexplainable 'skill' or 'talent'. It's the direct result of contact with basic reality.<sup>1</sup>

Most of the contemporary economic growth literature emphasises the positive impacts of foreign capital, especially that of foreign private investment, in the process of economic growth. Foreign capital, it is claimed, influences the process of economic growth by *filling up the saving-investment gap, increasing productivity, transferring advanced technology*, and so on. These conceived benefits have encouraged the authorities in the developing world to liberalise domestic economies to attract foreign capital. Nevertheless, theories and empirics appear to provide ambiguous evidence regarding the impacts of foreign capital on developing economies; there may

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<sup>1</sup> Pirsig (1974, pp.287-88)

be costs associated with foreign capital that may prove to be noxious for developing countries.

Like many other governments, the Government of Pakistan (GOP) has been striving to magnetise foreign capital. However, unlike some other developing countries, Pakistan has not been successful in obtaining substantial and consistent foreign capital inflows. Furthermore, the meagre inflows that the country has received have not been appropriately utilised to enhance the economic performance of Pakistan. This paper is a modest attempt to review trends of foreign capital inflows to Pakistan and compare with those of other developing countries in Asia. This paper also reviews the policy measures that the GOP has undertaken to attract foreign capital and compares these policies with those of other Asian countries. Furthermore, the paper tries to evaluate the impacts of foreign capital inflows on the economic performance of the country. Section 2 highlights the recent trends, determinants and role of foreign capital inflows in developing economies. Sections 3 and 4 present a very brief overview of the Pakistani economy and trends of foreign capital inflows to Pakistan, respectively. Section 5 compares the policies adopted by GOP and by other developing countries in Asia. Section 6 tries to briefly evaluate the impacts of foreign capital inflows to Pakistan. Section 7 concludes the paper.

## **2. Foreign Capital Inflows to the Developing World:**

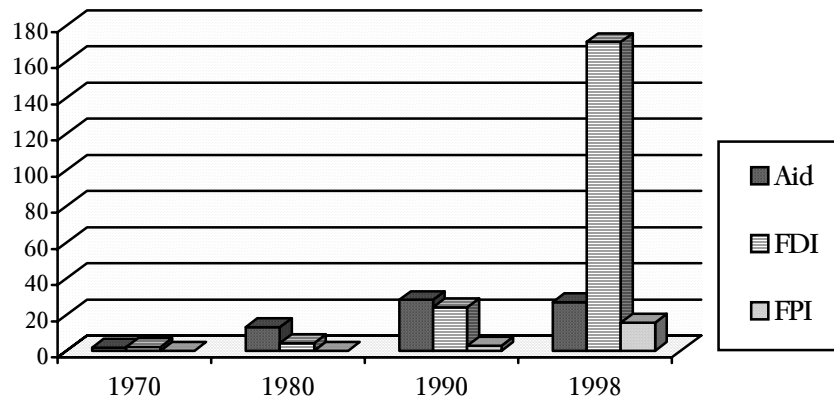
Foreign aid and foreign private investment are two important sources of capital for developing countries. The former could be broadly categorised into grants and low interest rate loans, and the latter into foreign portfolio investment (FPI) and foreign direct investment (FDI). The last three decades have witnessed significant changes in patterns and trends of these foreign capital flows to developing countries. Although all categories of foreign capital have increased considerably, their growth rates are substantially different<sup>2</sup>. Foreign aid to developing countries increased from US\$1.9 billion in 1970 to US\$27.1 billion in 1998. This increase, however, is rather modest when compared with the expansion in FDI and FPI (see Chart 2.1). FDI flows increased from US\$2.2 billion in 1970 to US\$24 billion in 1990, and more than US\$170 billion in 1998. FPI, which was negligible until the early eighties, increased to US\$2.8 billion in 1990 and to US\$15.6 billion in 1998.

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<sup>2</sup> Other forms of foreign capital inflows, like commercial loans and workers' remittances, are not considered in this paper.



**Chart 2.1: Net Resource Flows to Developing Countries in billion US\$ (1970-1998)**



**Source:** Global Development Finance (2000)  
 - FDI is net flows of Foreign Direct Investment  
 - FPI is net flows of Portfolio Equity Flows  
 - Aid is net flows of Grants (excluding technical cooperation)

## 2.1. Foreign Aid

Foreign aid has been the major source of foreign capital for many developing countries, especially during the 1960s, 1970s, and 1980s. The end of the Cold War, which has diminished the strategic importance of foreign aid and aroused sceptical public opinion about its efficacy, has led to a decline in foreign aid during the 1990s. Although the volume of aid has declined, the number of aid agencies has increased from about 7 in 1960 to about 50 in the 1990s (see Todaro, 1992). The international nongovernmental organisations, such as the World Bank (WB) or the International Monetary Fund (IMF), have assumed eminent authority over the economic policies of developing countries. These agencies usually impose strict conditions on the recipient countries and threaten to withdraw this aid if the conditions are not met.

Foreign aid, to some extent, has helped to promote growth and structural transformation in the recipient countries, particularly at the time of post-war reconstruction and natural disasters. It is, however, widely argued that the impacts of foreign aid on development are rather limited because foreign aid is usually *directed* towards military and political fields instead of human development. Also, the conditions imposed by aid agencies

may lead to limitations on policy autonomy. Some studies suggest that foreign aid can play a critical role in economic stabilisation by defusing distributional conflict, while others suggest that aid could lead to a delay in necessary reforms by providing additional resources to vested interests that encourage authorities “to resist adjustments and delay the day of reckoning (Casella and Eichengreen 1996, p.605)”<sup>3</sup>. Empirical evidence suggests that foreign aid has not contributed profoundly to the economic growth and development of recipient countries and it has even increased inequalities among different groups<sup>4</sup>. Moreover, the increasing tendency toward providing loan-type aid instead of grant-type aid and toward tying aid to the exports of donor countries has left many Third World nations with a phenomenal debt burden. Given the equivocal effects of foreign aid and limited control over the quantity of aid received, policy makers in developing countries have started seeking alternative sources of foreign capital i.e. foreign private investment (FDI and FPI).

## 2.2. Foreign private investment:

### *a) Foreign direct investment:*

FDI, besides filling the saving-investment gap, may bring advanced technologies and new entrepreneurial skills, which enhance production and export composition of host economies. Foreign firms operating in host countries are also expected to diffuse ideas and technology to domestic enterprises that, in turn, will improve domestic management capabilities and the export performance of host countries. It is, therefore, believed that inward FDI accelerates the stagnant growth process of the underdeveloped countries<sup>5</sup>. These inflows of FDI, however, are unevenly distributed among the developing countries. Since the 1970s, more than two thirds of the total FDI inflows have been concentrated in a few countries, many of which have now become middle-income and newly industrialised countries (see Table 2.1). The literature suggests that FDI inflows largely depend on the size and/or growth of the domestic market, labour cost and quality, trade regime, and above all the attitude of host governments toward foreign investment<sup>6</sup>. With the increasing emphasis on the role of FDI in the process of economic growth, the competition among developing countries has become fierce, leading to more open and liberalised policies to attract foreign investors. Between 1991 and 2000, there were 1185 national

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<sup>3</sup> See Sachs (1994) and Eberstadt (1992) for the positive and negative role of foreign aid.

<sup>4</sup> For details, see Bornschier et al. (1987), Rana and Dowling (1988), and Griffin (1991).

<sup>5</sup> For details, review of the potential benefits of FDI, see World Investment Report (1992).

<sup>6</sup> For the vast literature on the FDI determinants in developing countries see e.g. Root and Ahmed (1979), Lucas (1993) and Loree and Guisinger (1995).

regulatory changes, of which 1121 were aimed to create a more favourable environment for FDI. In 1996, for example, out of 114 new changes in investment regimes introduced by 10 developed and 55 developing countries, 98 were toward liberalisation or the promotion of FDI (see Table 2.2). Generous financial and fiscal incentives have been offered with the hope to attract more investment. It is however not likely that liberalisation and incentives are enough for a country to attract foreign investors<sup>7</sup>.

**Table 2.1 - The ten largest recipients of FDI in the developing world  
(Average annual inflows, Billions of US\$)**

	Host economic s	1970 - 1979	Host economies	1980- 1990	Host economies	1991- 1995 <sup>a</sup>	Host economic s	1996- 2000 <sup>a</sup>
1	Brazil	1.3	Singapore	2.3	China	22.5	China	41.8
2	Mexico	0.6	Mexico	1.9	Mexico	6.3	HongKong	25.1
3	Malaysia	0.3	Brazil	1.8	Singapore	4.8	Brazil	24.5
4	Nigeria	0.3	China	1.7	Malaysia	4.5	Mexico	12.1
5	Singapore	0.3	HongKong	1.1	Brazil	2.5	Argentina	11.7
6	Egypt	0.3	Malaysia	1.1	Indonesia	2.3	Singapore	8.6
7	Indonesia	0.2	Egypt	0.9	Hungary	2.2	Poland	6.6
8	Hong Kong	0.1	Argentina	0.7	Bermuda	2.1	S. Korea	6.3
9	Iran	0.1	Thailand	0.7	Argentina	2.0	Colombia	5.5
10	Uruguay	0.1	Taiwan	0.5	Thailand	1.8	Malaysia	5.1
	Share of flows to developing countries (%)	66	Share of flows to developing countries (%)	68	Share of flows to developing countries (%)	73	Share of flows to developing countries (%)	74

**Sources:** World Investment Report (various issues)

<sup>a</sup> Calculated by the authors

<sup>7</sup> For an extensive discussion about the effects of incentives and other policies on the FDI inflows see Oman (2000)

**Table 2.2 – National Regulatory Changes, 1991-2000**

<b>Item</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
Number of countries that introduced changes in their investment regimes <sup>a</sup>	35	43	57	49	64	65 <sup>b</sup>	76	60	63	69
Number of regulatory changes of which:										
More favourable to FDI <sup>c</sup>	80	79	101	108	106	98	135	136	131	147
Less favourable to FDI <sup>d</sup>	2	-	1	2	6	16	16	9	9	3

**Sources:** World Investment Report 2001

<sup>a</sup> Including developed and developing countries

<sup>b</sup> 10 developed and 55 developing countries

<sup>c</sup> Including measures aimed at strengthening market supervision, as well as incentives

<sup>d</sup> Including measures aimed at reducing incentives

Despite their efforts, only a few developing countries have succeeded in attracting FDI, and there is little evidence that this FDI has fostered growth and development in these countries. This is because transnational companies (TNCs) might just exploit natural resources, cheap labour and lax regulations in host countries, and crowd out indigenous entrepreneurs. Some cross-country comparative analyses show no systematic evidence regarding the link between growth and FDI<sup>8</sup>. The contemporary empirical studies insinuate that there are some prerequisites, such as a threshold level

<sup>8</sup> See e.g. Blomstrom and Kokko (1996) and Saggi (2000).

of human capital endowment and an outward-oriented strategy, which host countries must possess in order to gain from FDI<sup>9,10</sup>.

***b) Foreign portfolio investment (FPI):***

The financial liberalisation programmes adopted by developing countries from the early 1980s onward have played a key role in attracting a huge amount of FPI inflows. These liberalisation policies followed the creation of new financial markets and institutions, and the emergence of new financial instruments and regulation. These policy measures helped in attracting a huge influx of FPI and the emerging stock market capitalisation grew more than tenfold between 1986-1995, which is claimed to be mainly due to the trend of institutionalisation of savings and investments in developed countries and liberalisation of financial markets in developing countries (see, World Investment Report, 1997). According to the International Financial Corporation, in 1988 only three countries were categorised as *free* [from barriers] for foreign investors to invest in stocks listed locally. But, in 1995, twenty-six were classified as free, eleven were relatively free and only one was classified as closed for foreign investment (World Investment Report, 1997). It is claimed that FPI contributes to the financing of local firms in the primary and secondary market<sup>11</sup> by increasing the liquidity of local security markets and strengthening the local financial infrastructure. These developments may also facilitate the operations of TNCs, which, in turn, could help the country attract more FDI. FPI flows are dependent on the development of local stock markets, degree of market liquidity, and the level of regulation regarding information disclosure and accounting standards.

FPI may also entail negative consequences for the developing countries. First, FPI inflows are usually more unstable and volatile than FDI because the former does not involve long-term commitment by foreign investors and investors can easily pull out of the developing countries when their “animal spirits” are low. For example, the recent Asian financial crisis

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<sup>9</sup> See Blomstrom et al. (1994); Borenzstein et al. (1998); and Balasubmaranyam et al. (1999).

<sup>10</sup> The surge of FDI flows in the form of Merger and Acquisition (M&A) to East Asian countries, which have been severely affected by the 1997 crisis, has raised further doubts on the benefits of FDI. This form of FDI is criticised for its possible adverse effects on economic development as it may hamper domestic industries (see, Zhan and Ozawa, 2001). Hausmann and Fernandez-Arias (2000) even argues that the rise of FDI flow is an indication that markets are working poorly, institutions are inadequate and risks are high. However this study covers the data of a very recent period, i.e. 1996-1998 and mainly for Latin American countries, thus the long-run implications for FDI flows to developing countries seem limited.

<sup>11</sup> See, for example, WIDER (1990) for potential positive impacts of foreign portfolio investment.

shows how easily capital can fly away from a country and it also shows quite clearly the troubles that FPI may bring to the host countries. It is widely argued that the recent Asian financial crisis is partly due to the problem of speculation, moral hazard and asymmetric information in inappropriately structured domestic financial markets (see, for example, Mishkin, 1999). Secondly, building on the post-Keynesian framework, Grabel (1996) suggests that foreign portfolio investment has two negative, mutually reinforcing effects: 1) exacerbation of constraints on policy autonomy, and 2) increased vulnerability of the economy to risk, financial volatility, and crisis.

To sum up, foreign private investment could play a vital role in the economic growth of developing countries, provided that governments play an active role in attracting and accelerating the benefits of foreign investment. The authorities not only need to pursue policies to attract foreign private investment, they must initially create a sound environment to gain from such investment. Policies may range extensively from offering financial and fiscal incentives to improving the institutional and legal framework and investing in infrastructure and human resources to meet the requirements of foreign investors as well as to distribute the benefits of foreign investment to the overall society.

### **3. Pakistan's Economy**

During the last five decades, Pakistan has witnessed a vivid change in its economic structure<sup>12</sup>. The share of the agriculture sector, the emblem of Pakistan, in Gross Domestic Product (GDP) has decreased from 60% in 1950 to 26.3% in 1998. Gross domestic investment (GDI) per GDP has increased three-fold from 5% in 1950 to 17.1% in 1998. In 1950 there were no manufacturing products in merchandise exports, but in 1998 they accounted for 84%. Share of agriculture value added in GDP has dropped significantly from 46% in 1960 to 26% in 1998, while that of industry and services has increased from 15% and 38% to 24% and 48%, respectively. Regardless of these structural changes, agriculture still plays an important role in the Pakistani economy. Value added is highest in agro-industries i.e. industries that have linkages to agriculture. The small-scale industrial sector, although often neglected by the government, has been the mainstay of Pakistan's economy. The public sector, which is usually criticised for being inefficient, constitutes a major portion of industrial production and provides a major source of employment<sup>13</sup>. Industrial diversification is still poor with too much concentration in some industries – textiles, for instance. The share of

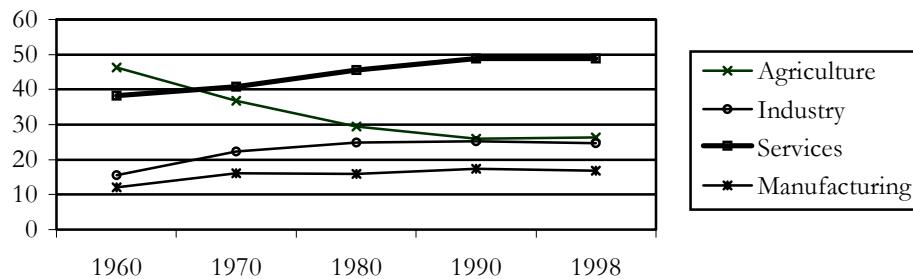
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<sup>12</sup> For an excellent overview of the Pakistani economy, see Husain (1999) and Zaidi (1999).

<sup>13</sup> See, Zaidi (1999, chapters 6, 7 and 8) for a comprehensive review of the process of industrialisation in Pakistan and role and efficiency of the Public sector.

manufacturing in industry is still low and its technological level, represented by the share of manufacturing added value in GDP, has only increased by a few percents after nearly 50 years (see Chart 3.1).

**Chart 3.1 Sectoral value added as percentage of GDP**



**Source:** World Development Indicators 2001

Initially, the main source of foreign capital for Pakistan was official foreign aid, which still overshadows foreign private investment. Foreign private investment was not widely encouraged until the issuance of the Foreign Private Investment Act 1976. Despite the government's attempts, the amount of foreign private investment inflows to Pakistan is meagre compared with that to other developing countries.

#### 4. Foreign Capital Inflows to Pakistan

##### 4.1. Foreign aid to Pakistan

Foreign aid has always been an important source of capital for Pakistan, especially during the 1960s and 1970s (see, for example, Papanek, 1967). During this period, Pakistan was one of the largest aid recipients in Asia (see Table 4.1). In the 1980s, Pakistan would again receive large foreign aid flows due to its front-line role in the American-Russian conflict over Afghanistan. These aid inflows, which reached US\$2 billion annually by the mid-1980s, are claimed to have supplemented meagre domestic savings and foreign remittances, and enhanced the credit worthiness of Pakistan (see Husain, 1999). Nonetheless, foreign aid flows to Pakistan have also been moving in parallel with the world trend. It has been decreasing over time and moving towards loan-type aid. According to *Pakistan Economic Surveys* (various issues), the share of grant-type aid in total aid commitment reduced sharply from 80% in the 1<sup>st</sup> Plan to 12% in 1970-1978 and to less than 9% since 1993. Also, the aid agencies, such as IMF and WB, have become more influential in dictating the GOP. In section 6.1, we will try to evaluate the impact of this foreign aid on the process of economic development in Pakistan.

**Table 4.1 Foreign aid to Pakistan and selected Asian countries**

	Aid per GNP		Aid per capita (current US\$)	
	1960	1970	1960	1970
<b>Pakistan</b>	<b>6.8</b>	<b>4.2</b>	<b>5.5</b>	<b>7</b>
Bangladesh	N/A <sup>a</sup>	N/A	N/A	N/A
India	2.3	1.3	1.6	1.5
Indonesia	N/A	4.7	0.9	4
Mauritius	0.3	2.7	0.7	7.3
Nepal	1.6	2.7	0.9	2.1
Philippines	0.7	0.7	1.8	1.2
Malaysia	0.6	0.6	1.6	2.4
Korea, Rep.	6.3	3.0	10	8.6
Hong Kong	0.4	0.03	1.9	0.4
Singapore	-0.04	1.5	-0.2	15
Sri Lanka	0.7	2.1	1.1	3.9
Thailand	1.5	1.04	1.6	2

**Source:** World Development Indicators 2001

<sup>a</sup> Not available

#### 4.2. FDI to Pakistan:

##### *Trends of FDI inflows to Pakistan*

Increase in FDI to Pakistan during the last two decades, though not as sharp as in the other developing countries as a whole or in East Asia, justifies the assertion *supra* that foreign private investment may be a substitute for the aid flows (Chart 4.1). Like other developing countries, the main determinants of FDI flows to Pakistan are domestic market size, availability of cheap labour (skilled and un-skilled), macroeconomic stability, and the structural reform process<sup>14</sup>.

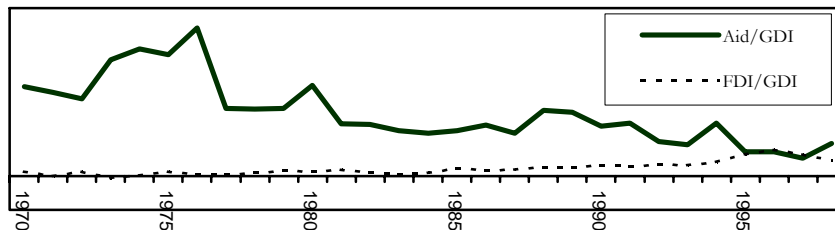
The history of FDI inflows to Pakistan can be broadly divided in two phases. The first phase is characterised by the attempt of the government to attract foreign direct investment through the Foreign Private Investment Act 1976. Before this Act, private foreign investment was regulated by the government's statement of industrial policy issued in 1959. The 1976 Act provided security against expropriation and assured adequate compensation in case of acquisition. It also guaranteed the remittance of profit, capital, and up to 50% of net income. Priority was given to projects that were

<sup>14</sup> For determinants of FDI in Pakistan, see Buckley (2000), Khan (1996), or Akhtar (2000).



capital-intensive, technologically advanced, or supposed to strengthen the Balance of Payments position. Several channels, like the One Window facility and the establishment of the Board of Investment, were brought to light to promote the inflows of FDI.

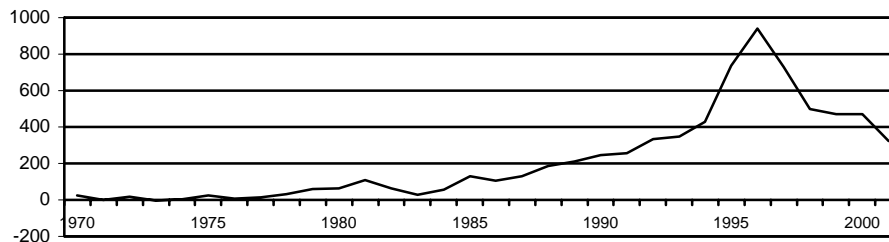
**Chart 4.1 Foreign aid and FDI as percentage of GDI (1970-1998)**



**Source:** World Development Indicators 2001

As discussed in section 2.2, the incentives provided by host governments are not a mere decisive determinant to stimulate foreign direct investments in developing countries; therefore, the effects of incentives provided by the GOP alone were not overwhelming enough to make Pakistan an optimal destination for FDI. Chart 4.2 suggests that from 1970 until the mid-1980s, the annual inflow of FDI was still modest. The low level of FDI inflows could be attributed to political instability, threats due to Bhutto's nationalisation process, and the lack of the government's commitment to improve physical infrastructure and human capital. During this period, some other East Asian economies like Hong Kong and Singapore, proved to be relatively more successful in improving the domestic economic infrastructure and, therefore, were able to attract a number of foreign investors.

**Chart 4.2 FDI inflows to Pakistan at current million US\$ (1970-2001)**



**Source:** Data from 1970-1998 is from World Development Indicators, 2001; Data from 1999-2001 is from State Bank of Pakistan Annual Report, 2001.

The second phase started in the late 1980s with the abolition of controls on capital flows, income remittances and transfer, and ownership. Tax holidays and tariff concessions were granted to foreign investors. The post-1988 period is characterised by the process of liberalisation and privatisation (see Husain, 1999), which is claimed to have helped accelerating the inflow of foreign investment from US\$185.6 million in 1988 to US\$939 million in 1996. These FDI inflows then dropped to US\$500 million in 1998. On the domestic front, the decline in FDI after 1996 could be attributed to a number of problems like economic sanctions after the nuclear tests, freezing of foreign currency accounts, the Independent Power Producers (IPPs) controversy, and so on. On the external front, the decreasing trend was exacerbated by deterioration in foreign investors' confidence due to the Asian crisis. To restore foreign investors' confidence, a number of policy measures, such as the New Investment Policy 1997 and the Corrupt Business Practices Ordinance 1998, have been implemented.

The post-1988 period not only offers incentives to investors but also represents a shift in the government's focus: agriculture and services are among the new sectors open to foreign investors. During 1997-98, policy documents highlighted the objective level of at least US\$2 billion per year of foreign investment (see, *Pakistan Economic Survey*, 1997-1998) to expand the industrial base to value-added, export-oriented, hi-tech and agro-based industries. These targets, however, have not been met. On a positive note, the government has been able to resolve the HUBCO issue almost completely, but it may take some time to restore investors' shaken confidence due to this prolonged scandal. The problem may be worsened due to the event of September 11, but it is expected that western aid and debt rescheduling due to Pakistan's role in the so-called "war against terrorism" may, in the long run, help to attract foreign investors. However, due to the possibility of expansion in the American war against terrorism to other countries, particularly Iran, TNCs [may] find it highly risky to engage in long-term commitments in Pakistan. According to the Mid year summary of the Ministry of Finance, the FDI position slightly improved as it stands at US\$205.1 million in 2001 (Jul-Dec) as against US\$142.1 million in the same period in 2000.

### ***Which industries receive FDI?***

Table 4.2 presents the percentage share of industries receiving FDI during 1996 and 2001. It is interesting to note that, despite the GOP's efforts to increase FDI in export-oriented industries, the industries that exploit natural resources and target the domestic market have received the highest FDI. The power sector, which received around one third of the total FDI inflows until 1998-1999, received only 10% of the total FDI in 2000-2001 due to saturation

and the HUBCO conflict<sup>15</sup>. Investment flows to food, beverages and tobacco resumed again after reaching a low level in 1997. Mining and quarrying, especially oil exploration has increased significantly. The share of other industries remained almost unchanged in the 1990s. The textile industry, which is the backbone of Pakistan's exports and which is significantly competitive in international markets, has not been able to attract considerable foreign investment. Other industries – which require a skilled or semi-skilled labour force and are crucial to upgrade the industrial technological level and enhance exports such as electronics, electrical machinery and petrochemicals – receive less than 5% of total foreign investment. The share of foreign investment in services, such as trading and financial business, is also insignificant. The opening up of the stock market to foreign investors and the launching of the Pakistan Fund in the early 1990s has attracted several projects in securities market institutions, credit rating agencies and investment banks. However, the investment in financial business decreased sharply after 1997 and in 2000-2001 there was even a large divestment flow, which accounted for one-fifth of the total flows that year. Overall, despite various policy measures *infra*, Pakistan's performance in attracting FDI in services, export-enhancing, technology-upgrading, and labour-intensive industries to create jobs for the increasing population, has been quite unimpressive.

**Table 4.2 Selected indicators for FDI shares by sector**

	1996-7	1997-8	1998-9	1999-0	2000-1
Power	35.9%	39.8%	27.8%	14.3%	9.9%
Mining & quarrying – oil exp.	5.5%	16.5%	23.9%	17.0%	26.7%
Food, beverages & tobacco	7.6%	3.2%	1.6%	10.6%	22.2%
Textiles	1.8%	4.5%	0.4%	0.9%	1.9%
Transport, Storage & Com.	0.9%	1.7%	7.1%	6.6%	25.6%
Machinery other than electrical	0.3%	0.0%	0.2%	0.7%	0.1%
Electronics	0.0%	0.4%	0.3%	0.5%	1.1%
Electrical machinery	0.6%	1.4%	0.4%	0.3%	0.5%
Financial business	15.6%	3.4%	5.2%	6.3%	-20.4%
Trade	0.0%	2.1%	1.2%	1.6%	4.3%
Petrochemicals & refining	0.2%	0.3%	8.2%	2.6%	3.7%

**Source:** Investment indicators – Board of Investment, Pakistan

<sup>15</sup> See *Pakistan Economic Survey* (2000).

***Comparison with other developing countries in Asia***

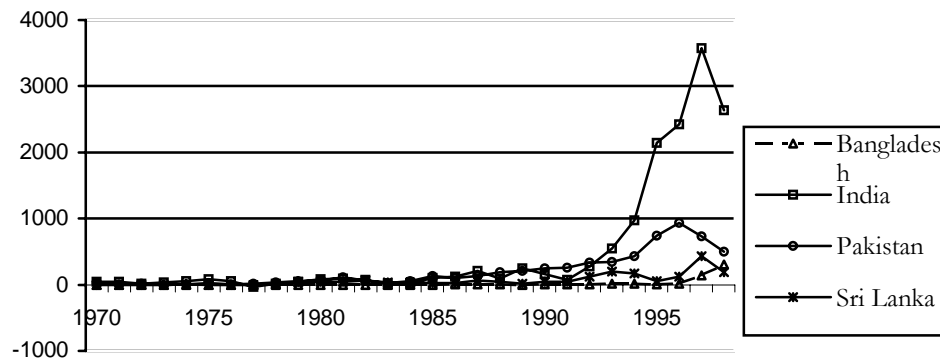
Pakistan's performance is even more unimpressive when we compare its FDI inflows with that of other developing countries. Table 4.3 shows that in 1999, the average stock of inward FDI as a percentage of GDP in developing countries is 28% while that of Pakistan is only 17%. The inward FDI stock of Pakistan is much lower than those of East Asian countries, like Singapore and Malaysia. It could be argued that these East Asian economies have a long history of opening and hosting FDI. But the recent FDI inflows in Pakistan are also lower than that of newly opened economies, such as China and Vietnam. In South Asia, though Pakistan has a higher ratio of FDI inward stock per GDP than India and Bangladesh, it is lower than that of Sri Lanka, which started promoting FDI nearly at the same time as Pakistan. In terms of annual inflows, since the early 1990s India has attracted far more FDI than Pakistan or any other countries in the region (see Chart 4.3). This is, to some extent, related to government policies, which will be discussed in the next section.

**Table 4.3 FDI inward stock by host region and economy  
(in million US\$ and as percentage of GDP)**

<b>Host region/Year</b>	<b>1980</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>	<b>1999</b>
Developing countries	240 837 <b>10.2</b>	347 237 <b>14.1</b>	487 694 <b>13.4</b>	849 376 <b>15.6</b>	1 740 377 <b>28.0</b>
Pakistan	688 <b>2.9</b>	1 079 <b>3.5</b>	1 928 <b>4.8</b>	5 552 <b>9.1</b>	10 303 <b>17.2</b>
Bangladesh	63 <b>0.4</b>	112 <b>0.5</b>	147 <b>0.5</b>	180 <b>0.5</b>	703 <b>1.5</b>
India	1 177 <b>0.7</b>	1 075 <b>0.5</b>	1 667 <b>0.6</b>	5 684 <b>1.7</b>	16 656 <b>3.6</b>
Sri Lanka	231 <b>5.7</b>	517 <b>8.7</b>	681 <b>8.5</b>	1 297 <b>10.0</b>	2 248 <b>14.2</b>
China	6 251 <b>3.1</b>	10 499 <b>3.4</b>	24 762 <b>7.0</b>	137 435 <b>19.6</b>	305 922 <b>30.9</b>
Indonesia	10 274 <b>14.2</b>	24 971 <b>28.6</b>	38 883 <b>34.0</b>	50 601 <b>25.0</b>	65 188 <b>46.2</b>
Malaysia	5 169 <b>21.1</b>	7 388 <b>23.7</b>	10 318 <b>24.1</b>	28 732 <b>32.9</b>	48 773 <b>65.3</b>
Singapore	6 203 <b>52.9</b>	13 016 <b>73.6</b>	28 565 <b>76.3</b>	59 582 <b>70.0</b>	82 859 <b>97.5</b>
Thailand	981 <b>3.0</b>	1 999 <b>5.1</b>	8 209 <b>9.6</b>	17 452 <b>10.4</b>	21 717 <b>17.5</b>
Vietnam	7 <b>0.2</b>	38 <b>0.6</b>	230 <b>3.6</b>	6286 <b>31.1</b>	15 875 <b>55.6</b>

Source: World Investment Report 2001

**Chart 4.3 FDI inflows to South Asia  
(1970-1998)**



**Source:** World Development Indicators 2001

#### 4.3. FPI to Pakistan

Like other developing countries, FPI is a relatively recent phenomenon in Pakistan<sup>16</sup>. Initially Pakistan participated in external financial markets by offering instruments like foreign exchange bearer certificates issued by the Federal Government, Sovereign Bonds, and dollar bearer certificates (see, Khan, 1996). Later on, the government started opening up the domestic financial market to attract foreign investors. FPI increased significantly after the government opened the entry as well as the exit (expatriation) for foreign investment in the financial market in the early 1990s. The development of the securities market in the 1990s includes the establishment of the Central Depository Company, credit rating agencies, corporate brokerage houses, some of which were partially funded by the International Financial Corporation (IFC), coupled with the updated Company Law and Securities and Exchange Law.

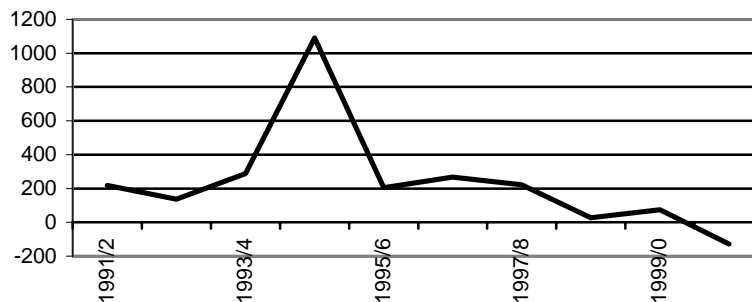
Foreign portfolio investment inflows have jumped to a peak level of more than US\$1000 million in 1994<sup>17</sup>, more than double the inflow of FDI in the same year. This flow of capital however has proved to be highly volatile, especially after the Asian financial crisis (Chart 4.4). Some studies suggest that FPI is highly volatile in Pakistan "... since portfolio investment

<sup>16</sup> The lack of consistent and comparable data prevents a more thorough analytical comparison of FPI to Pakistan and to other Asian countries.

<sup>17</sup> However, Khan (1996) suggests that "this impressive increase does not reflect the true picture of the trends in portfolio investment" because of US\$ 862 million sale of PTC vouchers "which was a one time phenomenon".

in Pakistan is directed mainly toward short-term and some medium-term public debt instruments and the stock exchanges, while access to capital markets through the use of external instruments has been limited” (Khan, 1996, p.864). According to the mid-year review of the Ministry of Finance, FPI has witnessed an outflow of US\$57.1 million during 2001 (Jul-Dec) as against an outflow of US\$67.4 million in the same period of the preceding year.

**Chart 4.4 FPI in the 1990s (million US\$)**



**Source:** *Pakistan Economic Survey* (various issues)

## 5. Policies toward Foreign Capital Inflows

Given that the developing countries have little control on foreign aid inflows, this section attempts to review the policies pursued by the GOP toward foreign private investment, particularly toward FDI. Comparisons with the macroeconomic policies adopted by the governments of several other Asian countries provide some insights into why the amount of foreign capital inflows to Pakistan has been relatively meagre.

The huge inflows of foreign private investments in Southeast Asian countries, such as Singapore and Malaysia, are usually attributed to the macroeconomic policies pursued by the authorities in these countries<sup>18</sup>. The governments of Singapore and Malaysia in the mid 1960s and the early 1970s, respectively, were among the earliest in the developing world that adopted the export-oriented strategy and opened the economy to foreign investors. Both countries received massive FDI inflows, especially in electronics and electrical industries, and became leading exporters of these products. In the mid-1980s, the favourable external environment created by the appreciation of the Japanese Yen and the surge in international production of TNCs brought new

<sup>18</sup> See Chia (1999)

opportunities as well as challenges. Some latecomer Southeast Asian countries such as Indonesia and Thailand introduced extensive liberalisation, FDI-led and export-led strategies and became competitors of Singapore, Malaysia and other Newly Industrialised Economies (NIEs) in providing cheaper unskilled labour. In 1986 the Indonesian government started deregulating FDI and encouraged investment by small and medium-enterprises in the electronic industry. At the same time the Thai government introduced policies to promote exports and export-oriented foreign investment. Moreover, both countries embarked on a series of macroeconomic reforms and adjustments such as a general programme of reduced protection, improvements in the duty-exemption scheme for imported inputs used in export production in Indonesia, policies toward a more balanced structure of protection, a structural shift in the public sector finances and industrial policies in Thailand. Meanwhile Singapore and Malaysia were facing increasing labour cost, labour shortages and infrastructure inadequacy. To tackle such problems the two governments launched new policies, which were different from the previous period, to promote high-technology, high value-added and skill-intensive investment. The post-1986 period of the Singaporean and Malaysian economies was marked by efforts to enhance the business environment, invest in infrastructure and, more importantly, to develop human capital. Ever since, the development of manpower and local suppliers have been stressed as key issues for sustainable development in these countries.

The policies toward foreign investment pursued by the GOP, in contrast, have been inconsistent and rather rigid. Although the Investment Act was issued in 1976, no further serious policies were adopted to improve the human resources, infrastructure and business environment, which are essential determinants of FDI inflows. The provision of generous financial incentives to foreign investors has been overstressed. Very little attention has been paid to the legal system in Pakistan to efficiently handle the problems faced by foreign investors. The prolonged controversy of the Independent Power Projects (IPPs) is the classic example. Despite having a large and low-cost labour force, and being specialised in the textile industry, Pakistan has failed to attract foreign investment in this sector. Meanwhile, Sri Lanka successfully attracted foreign investment in textile and garments although this country opened the economy in 1977, i.e. one year after Pakistan's 1976 Investment Act was issued.

Although the post-1988 liberalisation policies have been claimed as successful in attracting huge foreign private investment to Pakistan in the 1990s, it should be noted that this is the period when the international production of TNCs flourished (see Chart 2.1) and the flows of foreign investment to most of the developing countries increased substantially. The



speed and amount of FDI inflows to Pakistan in fact is not as high as that to many other developing countries that concentrated more on strengthening domestic human and physical infrastructures. During the 1990s, although both the Sharif and Bhutto governments followed liberalisation policies, they were highly inconsistent with their approaches<sup>19</sup> and were not able to signal the willingness of the government to protect the interests of foreign investors. It can be argued that by failing to update its macroeconomic policies, especially toward investment in the mid-1980s, Pakistan has lost a golden chance to promote foreign investment.

While the 1990s are marked by the government emphasis on high-technology and skill-intensive over and against low-skill manufacturing, Pakistan has done far from enough to be able to compete in the more fierce competition for foreign investment. It might not be necessary to mention the experience of Southeast Asian countries, which have taken actions as early as in the 1960s, but it might be interesting to know that India and Sri Lanka have also started progressing. These countries have embarked on the two most fundamental issues in accelerating economic growth through foreign investment: *human capital* and *linkages between foreign and domestic firms*<sup>20</sup>. In terms of human capital, India has the world's third-largest pool of scientific and technical personnel (The US State Department Country Commercial Guides, 2001); and Sri Lanka's illiteracy rate in 1998 was only 8.9%, compared with 59% in Pakistan (World Development Indicators, 2001).

In India, a government initiative has been implemented through the UNIDO Partnership Programme since 1999.<sup>21</sup> The programme is jointly implemented by UNIDO, the government of India, selected TNCs and other large corporations, research institutions, and civil society organisations, to form strong linkages between foreign affiliates and domestic suppliers in the automotive industry. This programme targets SMEs that are second and third-tier suppliers in the industry to create a pool of competent and internationally competitive domestic automotive components suppliers in India. Training is a major component of the programme, including enterprise-oriented shop-floor training in world-class manufacturing methods and training of junior engineers, technical and managerial staff. Software for financial planning and business performance assessment is also provided by UNIDO. A UNIDO survey of participating companies revealed significant improvements in productivity. Sri Lanka has also recognised its constraints in receiving FDI in technology and skills-intensive industries such as lack of

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<sup>19</sup> Some refer to it as a “muddle-through” scenario (Husain, 1999).

<sup>20</sup> See World Investment Report (2001) for an extensive review of linkage programmes and their potential impacts.

<sup>21</sup> See World Investment Report (2001)

technical manpower and especially reliable local suppliers since the early 1990s. Policy measures have been introduced to create linkages between local suppliers and foreign firms such as promoting local small and medium enterprises (SMEs) to be suppliers for foreign firms<sup>22</sup>.

This brief overview of policy measures undertaken by Pakistan suggests that, in contrast with some other Asian countries, the GOP has not pursued concrete and consistent policies to attract foreign private investment. Too much stress has been given to financial and fiscal incentives, while the importance of macroeconomic infrastructure, human capital, domestic enterprises development and linkages between foreign and domestic firms, has been undermined. Although the policy documents stress the development of institutions, little has materialised in this regard. The experience of other developing countries shows that dynamism and flexibility of the government policies is of paramount importance in accelerating inflows of foreign private investment.

## **6. Impact of Foreign Capital on Pakistan's Economy**

'How far can you bear me?', I said to Gwaihir. 'Many leagues', said he, 'but not to the ends of the earth. I was sent to bear tidings not burdens.' 'Then I must have a steed on land', I said, 'and a steed surpassingly swift, for I have never had such need for haste before.'<sup>23</sup>

To evaluate the impacts of the three types of foreign capital inflows *supra* on a developing country, it is imperative to understand the overall development strategy of that country. In the case of Pakistan, the development strategy pursued by the GOP is not clear. Each government adopted policies that were inconsistent with that of its predecessor. These inconsistencies in policies have not only signalled the GOP's lack of commitment in protecting the interest of foreign investors, but also have undermined the benefits that could be attained from foreign capital inflows. Given the lack of reliable data, this section briefly highlights the impacts of these foreign capital inflows on the economic performance of Pakistan.

### ***Foreign Aid***

As discussed in section 4.1, during the 1960s, 70s, and 80s Pakistan was among the largest aid recipient countries. But, as most of us might agree, the benefits of this aid have not stretched to the whole society.

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<sup>22</sup> Ministry of Industries of Sri Lanka (1989); Ministry of Industrial Development of Sri Lanka (1995); Wignaraja G. (1998)

<sup>23</sup> Tolkien (1954, p.255)

Although one of the “explicit aims” of the Pakistan Perspective Plan for the period 1965-85 was “elimination of dependence on foreign assistance,” foreign assistance increased substantially. This, however, does not seem to lead to socio-economic development. For example, during the 1960s and 1970s, when Pakistan was the largest aid recipient among Asian countries, the average percentage of population living under poverty declined only marginally from 43% to around 39% (see, *Pakistan Economic Survey*, 1997-98). This foreign aid also could not induce the government to improve the education standards of the country. Although the country received huge foreign aid inflows during the 1960s and 1970s, the illiteracy rate in Pakistan remained almost unchanged (around 59-65%) in the last three decades. In contrast, other Asian countries, like Malaysia or Sri Lanka that received only US\$2.4 and US\$3.9 per head of aid in 1970, respectively (compared with US\$7 per head of Pakistan), were able to improve the literacy rates significantly (see Table 4.2). Other social indicators, like health, employment and so on, present the same picture. Econometric studies also suggest that aid has not had any positive influence on economic growth. For example, Khan (1997) finds a negative causal effect of aid on GDP and a statistically robust negative impact of aid on economic growth. Besides the ambiguous impacts of foreign aid on the development process, aid agencies and donor countries have assumed a more eminent position in the policy configuration and have left the GOP with little liberty to formulate its own policy framework.

To sum up, it could be argued that the huge inflows of foreign capital in the shape of foreign aid have not been utilised for the development of the economy. Rather, this aid has served the vested interest of a small group of individuals and has “delayed the day of reckoning”. Furthermore, the increase in loan-type aid during the 1990s has exacerbated the foreign debt problem of the country.

### ***Foreign Portfolio Investment***

Whether FPI contributes to the process of economic growth and development of a country depends on the configuration of the domestic financial system and the importance of different financial institutions in providing funds and reducing information asymmetries. In a monetary production economy, availability of money is vital for an entrepreneur when he/she decides to invest in capital goods for future production. This money could be generated either from previous profits (retained earnings) or could be raised from external sources by issuing debt/equity in the security market or borrowing from banks. The importance of the security market of a country in providing funds depends on the effectiveness of

different types of the financial system, which, in turn, largely depends on its socio-economic structure. For example, the economic growth of Japan and Germany has been largely dependent on the bank-based financial system, while that of the US relies heavily on the security market-based system (see, for example, Levine *et al.*, 1997). This paper follows the post-Keynesian economic framework that suggests that no universal financial policy is suitable for all countries at all times.<sup>24</sup> It implies that if the stock market (and FPI) is vital for the US, then it does not necessarily mean that it is also vital for the Pakistani economy. It is argued here that FPI can only have significant positive impacts on the process of economic growth if the socio-economic structure of a country allows the security market to perform its functions effectively, i.e. to provide funds to entrepreneurs and reduce information asymmetries. In the case of Pakistan, where the security market is not very important and not well developed, FPI has not played, and is not expected to play a vital role in economic growth and development unless the overall socio-economic environment is adjusted appropriately.

The first stock exchange of Pakistan, i.e. Karachi Stock Exchange, came into existence in September 1947.<sup>25</sup> Although it was developed gradually afterwards, the security market has played a relatively minor role in the industrialisation process in Pakistan. This could be attributed to the guided industrialisation policies of the GOP, particularly during the 1950s and 1960s. The government did not pay much attention to developing the stock market because it was relatively difficult to influence this financial market and its development could undermine the industrialisation policies of the authorities. Banks, by contrast, are much easier to influence and the GOP, with its interventionist policies, has utilised the bank-based system to pursue its guided industrialisation policies. The stock market in Pakistan has provided meagre funds for capital formation. For example, “on average, between 1980-90, only 5 to 6 percent of private funds have been mobilised through the stock market, and even in the 1990s, the average amount raised through new issues was only Rs7 to 9 billion, compared to Rs75 to 80 billion from deposit mobilisation by the commercial banking system alone (Khan, 1999, pp.231-2)”. During the 1990s, when the authorities started following liberalisation policies, huge FPI entered Pakistani stock exchanges especially through the Commonwealth Equity Fund, the Pakistan Fund, and the Credit Lyonnais Pakistan Growth Fund. After reaching its peak level and making sufficient capital gains, foreign portfolio investors pulled out of the Pakistani stock market. Due to the

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<sup>24</sup> See Arestis (1992) for an excellent review of Post-Keynesian economics.

<sup>25</sup> See Husain and Qasim (1997) for a brief review of history of Pakistani stock markets.

underdevelopment of the overall financial system,<sup>26</sup> the lack of liquidity in the security market, and the presence of enormous information asymmetries, the participation of the general public in the stock market is negligible as most of the people hold bank deposits or Government's saving schemes as a preferred means of store of value.

For the last five decades, Pakistan has not had a stable democratic government. Even in the coming future, growing suspicions regarding Presidential Referendum and the shape of future governments, coupled with the American war against terrorism (possibly against Iran), has substantiated the uncertainties in the Pakistani market. This political instability has created huge uncertainties not only in the minds of foreign investors but also in the minds of the local public. The benefits of FPI depend on the economic and political environment of the host country. In the case of Pakistan, the environment has been highly unstable and, therefore, it is unlikely to have benefits from the security market in general, and FPI in particular. Given the uncertainties in Pakistan's economic environment and short-term commitment of portfolio investors, firms that seek stable sources of external funds rely on internal finance or borrow from banks. Also, due to a lack of public participation in the stock market, the benefits of FPI, if any, would go to a small group of individuals. This, however, does not imply that the stock market is completely unimportant for the development process of Pakistan. These markets are "compensating" institutions,<sup>27</sup> to benefit from the stock market (especially from FPI), however the GOP needs to attract domestic investors to create depth and liquidity in the market, before it starts marketing the Pakistani security market to foreign investors. In other words, before attempting to attract foreign investors, GOP needs to promote the security market to the Pakistani public.

### ***Foreign Direct Investment***

The theoretical and empirical literature on the contributions of FDI to the economic growth of host countries suggests that such effects are neither automatic nor analogous in all host countries. In some countries inward FDI may contribute to the growth of host economies; in others it may not, or it may even have negative consequences. Several cross-country comparative analyses suggest that to gain from inward FDI, there are certain prerequisites that host economies must possess, for example, a certain level of economic development (Blomstrom *et al.*, 1994), a minimum threshold stock of human capital (Borensztein *et al.*, 1998; Hermes and Lensink, 2000), some level of

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<sup>26</sup> See, however, Haque (1997) for financial system reforms in Pakistan.

<sup>27</sup> See Studart (1995)

domestic financial system (Hermes and Lensink, 2000) and an outward-oriented trade policy (Bhagwati, 1978; Balasubmaranyam *et al.*, 1999). Host countries receive different benefits also because they receive different types of FDI (Dutt, 1997). In order to evaluate the impacts of inward FDI on the economic performance of Pakistan, first we examine whether the Pakistani economy is able to benefit from inward FDI, i.e. whether it meets the above-mentioned prerequisites for FDI to contribute to its economic growth. Secondly, we discuss whether the industry pattern of FDI inflows is favourable to the economic growth of Pakistan. We then evaluate the impacts of inward FDI on the economic performance of Pakistan in the last two decades.

Borensztein *et al.* (1998) find that FDI will contribute to economic growth if a country has a male population above 25 years with an average of half a year (0.52) of secondary schooling, i.e. a sufficient absorptive capability of the advanced technologies is available. Pakistan possessed this threshold level in 1980,<sup>28</sup> with a male population with an average of more than one year (1.146) of secondary schooling. According to another study by Hermes and Lensink (2000), the secondary enrolment rate of 12.8% in Pakistan in 1970 also satisfies the minimum human capital threshold of 8.5% for FDI to have positive impacts on economic growth. Does this mean that Pakistan has sufficient capacity in terms of human capital to benefit from inward FDI? If so, has FDI contributed to the economic growth in Pakistan? The measurement on secondary schooling used in the study of Borensztein *et al.* (1998) and Hermes and Lensink (2000) may not reveal the quality of education. For instance one year of secondary education in Pakistan is expected to be different from that in the UK or even in India. According to the above mentioned indicator, and the available data, there is little difference between the human capital of Pakistan and that of the UK in 1980 – Pakistan has a male population above 25 years with average of 1.146 years of secondary schooling and the UK has only 1.994 years! Table 6.1 compares the rate of secondary school enrolment, a proxy for human capital, in Pakistan with that in other Asian countries.

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<sup>28</sup> The data on school attainment is from Barro and Lee (1993) and on enrolment is from World Development Indicators 2001

**Table 6.1: Secondary School Enrolment in selected Asian countries (% of Gross)**

Country	1970	1980	1990
<b>Pakistan</b>	<b>12.8</b>	<b>14.2</b>	<b>22.7</b>
Bangladesh	N/A	17.5	19
Hong Kong	35.8	64.1	79.6
Indonesia	16.1	29	44
India	24.2	29.9	44.4
S. Korea	41.6	78.1	89.8
Malaysia	34.2	47.7	56.3
Mauritius	30.7	50	52.9
Singapore	46	59.9	68.1
Sri Lanka	47	54.6	73.8

**Source:** World Development Indicators 2001

The findings suggest that different aspects of education, which are of paramount importance for a country to gain from inward FDI, have not improved in Pakistan during the last three decades.

Pakistan also satisfies the criterion suggested in Hermes and Lensink's (2000) study that the domestic financial market should reach a certain level of development for inward FDI to contribute to economic growth. Since 1964, the private sector credit to GDP ratio, a measure for financial market development, of Pakistan has always been above 23%, i.e. much higher than the minimum threshold of 12% found in Hermes and Lensink's study. Given the high cost of financial intermediation and huge non-performing loans, this indicator does not imply that the financial sector in Pakistan is well developed. The inefficiency of the domestic financial market has obstructed inward FDI to contribute to the economic growth of Pakistan. One of the most crucial (and most difficult to attain) impacts of inward FDI that can lead to sustainable economic growth is technology spillovers to domestic firms, especially through linkages with foreign firms. In the case of Pakistan, it could be argued that the inefficient financial sector has deterred local firms from upgrading, imitating or adopting new technologies to compete and/or become local suppliers for foreign firms. The reform of the financial market as well as the government's support may eventually improve the indigenous technological capacity and build up a sound domestic entrepreneurial environment.

According to the studies of Bhagwati (1978) and Balasubramanyam *et al.* (1999), inward FDI would exert no significant influence upon the growth

of Pakistan because this country follows an inward-oriented trade strategy, not an outward-oriented strategy.<sup>29</sup> The adoption of an inward-oriented strategy creates inefficiencies and prevents the country from providing a sound economic climate to get benefits from inward FDI. Also unlike Sri Lanka and India, which have already embarked on promoting linkages between domestic and foreign firms, Pakistan has not yet actively initiated any policy measures in this regard.

The previous discussion shows that Pakistan has not yet equipped itself sufficiently to benefit from inward FDI, and thus the impacts of FDI inflows on the economic performance could be expected to be rather modest. The limited contribution of FDI to economic growth may also result from the pattern of FDI inflows. Dutt (1997) argues that the sectoral pattern of FDI is also an important determinant for the growth consequences of inward FDI. Following this theme we can see that the positive impacts of inward FDI is insignificant because FDI projects do not flow to sectors, such as textiles, electronics and machinery, which could enhance technology level and exports. The patterns of FDI inflows are, however, partly dependent on the country's technological capacity. When Pakistan lacks a skilled labour force, it is unlikely to host skill-intensive FDI projects. The same argument may be applied to the linkages between foreign and domestic firms. When domestic firms are unable to become suppliers for foreign firms, it is unrealistic to expect FDI to create backward linkages and technology spillovers. Also, the labour productivity in Pakistan, measured by manufacturing value added (MVA) per worker, is much lower than those of other Asian countries and similar to that of Sri Lanka. For example, in 1997 the products that an average Pakistani worker produced in the manufacturing sector was worth around US\$ 2584, while an Indian could produce US\$ 9564, a Malaysian US\$ 14823 and a Singaporean US\$ 58039 (Table 6.2). The proposition that the significant increase in FDI inflows in the 1990s could improve the technological level and thus enhance the economic growth rate is rejected because the labour productivity of the 1990s has not improved significantly from that of the 1980s. The average levels of MVA per worker in the 1980s and 1990s are US\$ 1439 and 2475, respectively.

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<sup>29</sup> The ranking in Balasubramanyam *et al.* (1999) study is based on the World Bank Classification of Countries and the CUSUMSQ test.



**Table 6.2 Manufacturing Value Added per worker in selected Asian countries (in constant 1995 US\$)**

	<b>Pakistan</b>	<b>India</b>	<b>Sri Lanka</b>	<b>Indonesia</b>	<b>Malaysia</b>	<b>Singapore</b>	<b>Thailand</b>
1982	1066	3655	N/A	1687	8424	24547	5436
1983	1232	4065	N/A	2481	8909	26139	6088
1984	1296	4318	N/A	2920	9660	28281	6471
1985	1371	4452	1336	2954	9171	28756	6125
1986	1528	4784	1330	3338	9804	31539	6670
1987	1462	5134	N/A	3557	10382	31683	7301
1988	1758	5596	N/A	3865	11100	33379	8530
1989	1793	6167	N/A	3516	10965	34421	8793
1990	1846	6550	1792	3753	11146	34007	8992
1991	2099	6214	1705	4018	11512	37332	9084
1992	2194	6500	2144	4482	11409	37788	9731
1993	2531	7043	2252	4460	12119	41871	9835
1994	2831	7728	2222	4061	12799	48011	11059
1995	2825	8455	2327	4816	13512	54082	10820
1996	2890	9103	2421	5056	14284	56603	11686
1997	2584	9564	2316	5111	14823	58039	12101

**Source:** Data compiled from World Development Indicators 2001 and ADB Key Indicators: Growth and Change in Asia and the Pacific 2001

This brief analysis suggests that FDI inflows have not contributed much to the process of economic growth and development in Pakistan because its inadequate level of human capital and domestic entrepreneur capability has neither enabled Pakistan to benefit from inward FDI nor attracted the type of FDI that could possibly contribute to the economy.

## 7. Conclusion

This paper reviews the trends of two types of foreign capital inflows, namely foreign aid and foreign private investment, to Pakistan. It suggests that, like other developing countries, the volume of foreign aid to Pakistan has been decreasing. Also the aid agencies and donor countries have assumed an eminent position in dictating the policies and left the GOP with little autonomy. A comparison with other Asian countries suggests that Pakistan has been quite unsuccessful in attracting foreign investors. The slow growth rate of foreign private investment, including FDI and FPI, could be attributed to the inconsistencies in successive government's policies and poor socio-economic infrastructure. The policies pursued by the GOP lay too much stress on financial and fiscal incentives, while the development of

domestic infrastructure, human capital, and institutional structure has been undermined. The problem has been exacerbated due to high political instability in Pakistan.

Given the amount of foreign capital that it has attracted, Pakistan has not been able to reap the benefits of such inflows. The impact of foreign aid is negligible. Also, foreign private investment, especially FDI, has a minimal impact on the Pakistani economy due to lack of sufficient human capital, domestic enterprises development and institutional framework, and the absence of linkages between foreign and domestic firms. To gain from foreign private investment, authorities need to concentrate on the development of human capital and domestic entrepreneurs. Although this paper provides some insights on the impact of foreign capital on the economic performance of Pakistan, more research is required in this area, and economic researchers are called upon for further research on the role of foreign capital inflows, especially on the linkages between foreign and domestic firms, the influence of foreign firms on the human capital development in Pakistan, and on the influence of foreign investment on the domestic financial system.

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## **Tax Treatment of Interest**

**Pervez Tahir\***

### **Introduction**

Income taxes treat interest either as cost or as income. It is a cost when borrowed funds are used to generate a taxable stream of income, justifying deductibility. When it is an accretion to income, interest is liable to taxation. Interest income, it may be pointed out, has been viewed as unearned income compared with earned, wage income right from the days of Adam Smith, furnishing the basis for higher taxation of the former. However, the cost and income concepts are not strictly adhered to. In the United States, the so-called tax expenditures have resulted from these departures, first, by allowing tax deductibility without interest being a cost of producing taxable income and, secondly, by exempting interest income from state-local securities despite accretion to taxable income. All these interest categories have interesting implications for efficiency, equity, investment pattern and corporate financial structure. The present paper seeks to spell out some of these in the context the United States insofar as there are lessons for the debate on *riba*.

Section I deals with tax expenditures such as consumer debt and state-local securities. The declining role of unearned income is the subject matter of Section II. The most important part of the paper is Section III, which analyses why the standard public finance theory makes the wrong prediction that tax structure favours debt finance vis-a-vis non-debt finance. The rudiments of an alternative theory are also presented in the same section. Section IV sums up the paper with some sundry conclusions.

### **I. Interest as Tax Expenditure**

Tax Expenditures comprise deduction of normally non-deductible items and exclusion of includable items. Interest cost on consumer debt belongs to the former category and interest income from state-local securities to the latter.

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### **(a) Consumer Debt**

Interest on mortgages and loans for consumer durables are itemised deductions for the purposes of individual income tax. Business interest is deductible against investment to avoid abuse (21, Musgrave and Musgrave, 1980, pp.357-61).

The deductibility of interest on mortgage loans for housing raises many questions. It violates the principle underlying interest deduction i.e. production of a taxable income stream. The only reason for deductibility can be to give an incentive to low-cost housing. This is a laudable objective, given the housing crunch and soaring rents in the United States. But then the incentive has to be generalised for housing expenditure, and not restricted to house owners, as most low-cost housing is in rental form. As it exists, deductibility makes house owners triple gainers: imputed rents are exempted and mortgage interest and property tax are deductible. Not only do the renters not get any compensating benefit, they also pay higher rents to the extent property tax is shifted. At one extreme, not an insignificant number of low-income renters lies outside the tax net, leaving them unaffected by any fiscal deductibility as owner-occupants. In addition, Pechman maintains that owners are better able to itemise deductions than the renters: the former are the major beneficiaries of new and old deductions, while the latter have to be content with standard deductions (23, 1977, pp. 85-6).

Such is the enormity of issues involved, perplexing the choice of criteria. Equity could be achieved between the alternatives of mortgage ownership, equity ownership and renting if imputed rental is made liable to tax or rentals are made deductible. However, the former eliminates the incentive, while the latter preserves equity and incentives. The former faces organised political opposition and the latter lacks organised political support. Small wonder, income tax snatched the position of being the worst tax from property tax after the passage of proposition 9 and 13 in California in an opinion poll (3, 1980, pp. 1-2). Even if rentals become deductible, groups below the threshold income level will still be left out. This will cast in doubt the objective of incentive provision of housing. Direct subsidy will be the next best.

What will be the effect of abolishing interest deductibility? In that case, the equity owner will be the only gainer, taking up a mortgage and paying interest out of dividend income. As White and White contend (34, 1977, p..5): "Conformity of taxable income to Simons income implies a tax law that is not neutral in its treatment of consumption and savings but



rather is biased against the latter. But to disallow the deduction of interest cost on consumer debt would not remove this unneutrality since it is inherent in the definition of income. Instead, the disallowance would introduce another unneutrality, a tax law bias favouring asset finance over debt finance.”

There is nothing wrong with the "bias favouring asset finance over debt finance" if direct subsidisation is resorted to. However, to continue with the White and White argument, the discontinuation of deductibility will only be a second-best solution insofar as the law departs from Simons' definition of income by ignoring imputed rentals. It will reduce understatement by owners, leaving the inequity between clear owners and mortgage owners unimpaired. Neither the existing law, nor the modified version will be in conformity with Simons' definition, with the result that modification will reduce inequity insignificantly (33, White and White, 1965). In any case, the tenant-owner issue requires fuller consideration of accelerated depreciation of rental housing and overall response of housing market to taxes (1, Aaron, 1970).

The problem of deductibility is complicated by the difficulty of identifying the purpose of a loan. A mismatching of expenses is caused when the rich deduct interest on investment yielding no current income. Tax shelters are the inevitable result. Pechman proposes that the deduction should be limited to the amount of reported property or business income. This would reduce interest deduction by 75 per cent. The current provision is too inadequate to make good the revenue loss from interest deductions in excess of property income (23, 1977, pp. 86, 89-90, 119-22). Goode also recommends limitation of interest deduction as about 25 percent of interest deductions are claimed by wage and salary earners, and the bulk of the remainder by those with interest deductions exceeding income from sources other than salaries and wages. But he finds Pechman's matching proceeds formula less satisfactory and suggests pooling of property income and interest payments, with averaging to allow for fluctuations (12, 1976, pp. 151-3).

As political constraints make pooling hard to introduce, Dixon proposed a second-best solution of (8, 1970, p. 176) "removing the taxpayer's ability to deduct interest payments on debt which can be considered as financing the holding of assets yielding non-taxable income from the tax base." This sounds equitable in theory, but its operation in practice requires information which either does not exist or is difficult to translate into empirical meaningfulness.

In case of consumer durables, some measure of vertical equity is achieved as low-income debtors benefit. To White and White, the relatively small number of non-owners in this case rules out even a second-best modification of the law (34. 1977, p. 6).

### **(b) State-Local Securities**

Politically, tax-exempt state-local securities have been one of the most controversial issues ever since the introduction of income tax in the United States. Basically, it is a problem of states jealously guarding their fiscal autonomy. The more the discussion of economic pros and cons, the more the hardening of political stands.

Those in favour of terminating the exemption argue that it is iniquitous, discourages risk investment, misallocates resources within the private sector and between public and private sectors and, most important, it is an inefficient subsidy as the loss of federal revenue exceeds interest cost to states. The nature of the debate can be judged by the tendency of the proponents to present a counter case rather than rebut the case against. According to them, state-local securities are not as attractive as other securities and the removal of exemption would sharply raise their cost of borrowing. This will necessitate additional state-local taxation, making the overall tax structure more regressive. In addition, the inability to incur costlier borrowing may lead to slashing crucial capital outlays (22. Ott and Meltzer, 1963.pp.9-23).

The antagonists also propound a "trickle-up" theory. Thus if bonds must be sold to tax payers with a 50 per cent marginal rate to clear the market, the tax benefit will be competed away for the group. But the benefit will "trickle-up" to those paying 70 per cent marginal rate by the excess of interest rate on tax-exempt bonds over the after-tax yield on bonds liable to tax (2, Ackennan and Ott. 1970). Bittker finds the theory paradoxical in that (5, 1980, p. 28) "vertical inequity *increases* (emphasis original) in proportion to the tax allowance's popularity with low-income tax payers ..... For the rich, therefore, the best tax shelters are those that are patronised by the poor; on the other hand, the more exclusive the club, the less reason to join."

This paradoxical club theory is nothing more than logical hair-splitting. For, Bittker would like to wait for the behavioural consequences of the exemption to be correctly mapped before the equity (or efficiency) issues can be settled (5, 1980, p. 31). For one thing, there does not exist a single type of economic behaviour which has been correctly mapped. For another,

the facts speak for themselves: in 1979, 80 per cent of the individual returns of over 2 billion dollar revenue loss constituted AGI above 100,000 dollar and the remaining 4 billion dollar loss was due to institutional sources, also largely benefiting the same class (2, Musgrave and Musgrave, 1980, p. 348).

Later on the area of tax-exempt bonds was widened to include industrial development bonds, pollution control bonds and, in some cases, even mortgage bonds. Underlying this, of course, is the expression of fiscal self-determination by the state and local governments. As Pechman admits rather helplessly (23, 1977, p. 116): “The major problem is political. If the tax exemption is replaced by a generous subsidy, many people fear there will be an unhealthy increase in federal control over state and local fiscal affairs. Even the possibility of it is often sufficient to arouse opposition to removal of the exemption.”

## **II. Interest as Income**

The distinction between earned and unearned income is as old as economics itself. The unearned interest receipts constitute an accretion to income and its taxation is said to be new tax on new income (20, Musgrave, 1959, p. 162). While substantial disagreement has never existed among economists on treating earned income more favourably than unearned income for tax purposes, the business classes have always viewed it more than a little askance. The *Wall Street Journal* faithfully represented this sentiment when it commented on Brodhead's bill to reduce the maximum tax rate on unearned income from 70 percent to 50 percent thus (6): “We have been railing in these columns for years about the fact that taxes are higher on so-called “unearned income” than on wages and salaries, a distinction which we recently called an economic obscenity. Every time conservatives who understand the principles at stake have proposed to do something to repair the problem, the liberals rose up and accused them of giving a gift to the rich.”

What are “the principles at stake”? Doubtless, interest has historically been a basic institution of capitalism. Yet the economic explanation for its existence, the allocative role, whether it is the price of money, or capital or reward for saving are issues that have been the hotbed of controversy, yielding no clear-cut answers (31; Tahir, 2000). What is relevant in the present context is the saving aspect. Compared to an expenditure tax, income tax is said to distort the saving-consumption choice. However, how interest-elastic is saving is an open-ended question.

The underlying argument of *The Wall Street Journal* editorial seems to be what can be described as “widows' capitalism”. The “jest among continental Socialists concerning Baron Rothschild's sweaty sacrifices” (25, Samuelson, 1980, pp. 560-1, n.4) is now a bad joke: it is the hard-earned savings of widows, retirees and the old that is at stake. As Seltzer (26,1955, P. 1248) put it: “A once popular belief was that the bulk of interest goes to a class of wealthy investors who are enabled to live by clipping bond interest coupons and receiving interest on mortgages rather than by more direct contribution to production.”

This belief, as he went on to show, was unfounded for a number of reasons. First, interest income as a proportion of personal income declined to 2.8 percent in 1953, after having risen from 4.4 per cent in 1913 to 10 per cent in 1933. Second, the decline was more pronounced in upper income brackets, with the share of the top one percent falling from 13.4 percent in 1919 to 4.6 per cent in 1948. Third, during 1940-50, an Annual Gross Income dollar of incomes above 25,000 dollars contained an average of 3 cents of taxable interest (26, Seltzer, 1955, pp.1249-58).

Now these estimates did not include tax-exempt interest which, as noted in Section I, concentrates in upper income brackets. Further, “Baron Rothschild” has been replaced, over the years, by financial corporations. Further still, those were the days of low, often declining, interest rates. Even in the days of high interest rate and inflation, interest income as a proportion of personal income again touched the 10-per cent mark in 1979 (9, 1980, p. 227, Table B-20). A most significant development, to be considered in Section III, is the increasing reliance by corporations on internally generated finance. This indicates that the cleavage between savers and investors may not, after all, exist for a large sector of the economy. It is true that the share of interest income in Annual Gross Income has come down.

*The Wall Street Journal* calls the distinction between earned and unearned income “obscene” not just because it distorts the price system. In the framework of supply-side economics, the provident-aged have to learn to live on interest income alone and not on Social Security: it paves the way for phasing out Social Security spending.

It may be of interest to note two extreme cases. One relates to total, as opposed to existing partial, discrimination against interest (in keeping with the Christian tenets) through confiscatory taxation. According to Conard, the consequences will be so “pervasive” that “outright socialism would be a more likely development” (7, 1963, pp. 103-4). The other

consists in extending the logic of higher taxation of interest to the taxation of capital in general. Kalecki (15, 1971, pp. 41-2) reasoned that capital taxation is far superior to income tax in terms of effects on employment and business activity. As it would undermine the very principle of private property, he doubted its practicability by quoting Joan Robinson (24, 1936, p. 693); "..... any government which had both the power and the will to remedy the major defects of the capitalist system would have the will and the power to abolish it altogether."

### **III. Interest as Cost**

As noted in the preceding sections, the justification given for deductibility of interest as cost is that it leads to a taxable stream of income. It ensures the optimal equality of marginal rate of substitution between present and future consumption with marginal rate of transformation between present and future goods. The economic effect of this standard public finance proposition in the case of corporate income tax is discrimination in favour of debt-financed investment and against non-debt, risk investment financing (20, Musgrave, 1959, pp. 152-3, 345). In practice, however, the story is different. According to the same theorist (21, Musgrave and Musgrave, 1980, p. 418), "the share of equity finance (mainly from internal sources) has increased rather than decreased in recent decades, and there is little evidence that the differential tax treatment has been a significant factor in retarding this decrease."

The purpose here is to analyse this glaring contradiction between fact and theory. Also it will be examined how a theory with such a bad prediction continued to hold sway. More fundamentally, an alternative theory will be presented to explain the corporate preference for internally generated finance for investment.

Pechman offers a nontheory by saying that financial experts advise corporations not to prefer debt finance despite its relative attractiveness (23, 1977, p. 140). The traditional (financial manager's) view is of a U-shaped cost of capital curve, movement along which is governed by leverage, (i.e., the ability of the firm to increase its value over some range of debt-equity ratio). Thus the firms may use debt finance advantageously until the optimal debt-equity ratio is reached. Beyond the optimum, the risks of debt finance outweigh its advantages (29, Solomon, 1963, pp. 91-119). Modigliani and Miller contend that leverage is neutralised by arbitraging in a perfect market. As a result, stockholder's gain from interest-deductible debt finance turns out to be minimal. After adjustment for tax, the required rate of return for a firm is 20 per cent from equity finance, 16 percent for debt

finance and 15 per cent for internal finance. Under these assumptions, the corporate tax discrimination in favour of debt finance has no significance (18, 1958, pp. 293-6). However, Modigliani and Miller did not work out a tax-adjusted model in all its ramifications. If the assumption of perfect information is relaxed, debt finance regains its advantage over equity finance (29, Solomon, 1963, pp. 114-6).

Attempts have also been made to explain the “puzzle” of interest deductibility failing to encourage debt finance in the framework of the neoclassical theory of the firm by incorporating risk elements. The “puzzle”, it is stated, arises due to the error of comparing average cost of equity with average cost of debt, the former estimated to be twice as high as the latter during the 1950s and 1960s. However, the neoclassic category of marginal costs, defined as a function of financial structure and adjusted for tax, is supposed to have resolved the “puzzle”: relevant marginal cost of equity finance lies below stock yields while the marginal cost of debt finance lies above bond yields, and the optimal point is reached when marginal cost is equal to marginal return. The proposition was subjected to empirical testing to show that corporations were in fact in financial equilibrium for 5 benchmark years and that they tend to correct disequilibrium by responding to variations between marginal cost of debt or equity and the marginal rate of return (32, Tambini 1967, pp. 185-222). The model, like all neoclassical models, is too neat to be true. The well-behaved corporations of the model are hard to find in the matter-of-fact world. Finally, it misses the observed tendency of corporations to prefer retained earnings to debt and debt to equity finance.

Stiglitz (30, 1973, pp. 1-32) argued that the effect of interest deductibility could not be analysed in isolation. A full analysis must take into account all the relevant provisions of personal as well as corporate income tax. The extent of the tax advantage depends on the relative tax saving on personal as well as corporate income tax. So viewed, the actual debt-equity ratio turns out to be the “fortuitous outcome of the profit and investment history” (p. 32). Hence Stiglitz's assertion that, for optimal investment decisions, financial structure is relevant neither in the absence of tax nor in its presence. Interest deductibility causes no misallocation and, in its overall efficiency effect, corporate income tax is no different from a lump sum tax.

Except for the traditional view which recognised the problem, models referred to so far ignore what in the real world is a critical factor in corporate financial decision-making - the fear of bankruptcy and insolvency. More than anything else, it is this fear that makes debt finance, despite tax

deducibility, more expensive than non-debt finance. Keynes understood the problem when he talked of duplication of lender's risk and borrower's risk (16, 1964, pp. 144-5). However, the seminal contribution was made by Kalecki in his enunciation of the "principle of increasing risk" (14, 1937, pp. 98-106). Relying on the Keynes-Kalecki formulation, Goode derived an important conclusion (11, 1951, p. 139): "It seems likely that the reduction in the anticipated return will be more discouraging to investment that must be externally financed to that which can be financed from internal sources. Ordinarily a higher prospective reward is necessary to induce externally financed investment."

Another problem with the standard analysis is the ambivalent attitude towards the shifting of corporate income tax. With no shifting, a rise in the tax increases the cost of equity finance but leaves the cost of debt finance unchanged. Full shifting does not matter because the effect will be neutral (28, Smith, 1952, p. 98), although Miller and Shelton maintain that debt finance will still be more attractive (17, 1955, p. 13). However, in the modern oligopolistic corporate structure, mark-up pricing is the rule rather than the exception, geared largely towards the requirements of raising finance for investment (10, Eichner, 1980). The implication in our context is that corporate income tax is treated as cost, and shifted forward as marked-up cost. The effect is no different from an excise tax (27- Shoup, 1948).

It should be evident from the foregoing that tax-shiftability places internal finance roughly at par with interest-deductible external finance. But this merely specifies the level of indifference between the two sources of finance. To explain the preference for internally generated finance, Kalecki's principle of increasing risk has to be invoked. Indeed, mark-up pricing and increasing risk furnish the basic elements of an alternative model. Mott (19, 1980) constructed a Post-Keynesian model of investment behaviour in this spirit. Although he does not specifically incorporate the influence of taxation, the conclusions of his model are unlikely to be significantly different even after tax adjustment. According to his model, marginal risk increases with increased investment in fixed capital owing to the rising danger of bankruptcy and declining liquidity. The risk is larger, the greater the reliance on debt finance as the risk of the lender and the borrower is combined, the variance of return on equity increases with rising proportion of debt on the balance sheet and the danger of bankruptcy magnifies. Hence the reluctance of the firms to borrow, despite tax deductibility. The firms are generally disinclined to issue new stock as dividends are generally higher than the interest rate. Indeed, dividends are almost treated as a fixed charge. The reluctance to borrow itself is a function of the ability to generate

internal finance. This ability is gained and sustained, given the level of the required finance for investment, by a target rate of profit. Profits are propped up by mark-ups, which include forward shifting of corporate tax as marked-up cost.

This is what explains the fact that 60-80 per cent of corporate investment is financed internally, as also the maintenance of a stable debt-equity ratio of around 30 per cent, a result which is in stark contrast with the standard conclusion of the public finance theory that the interest-deductibility of corporate income tax discriminates in favour of debt finance.

#### **IV. Sundry Conclusions**

The preceding analysis leads to a startling conclusion: interest does not matter. But it may not be so startling if we take a careful look at facts. Income taxes in a democratic society, due to heavy weight in overall tax structure and comprehensive coverage, broadly reflect society's income distribution preferences and related policy choice. Tax treatment of various categories is merely a mirror image of these preferences.

Individual income tax recognises the old adage that interest receipts are in the nature of unearned income. This is not an ideological stance, but an empirical derivation from the fact that, over the years, the classes living off interest have reduced to a small segment of the social strata. Here, it may be argued that interest-earners largely comprise those incapable of offering labour or venturing enterprise - the old, widows, handicapped and temporarily handicapped (unemployed). This is where the role of Social Security as a natural adjunct of fiscal policy comes in. Social Security, indeed, is the best means to protect these groups against the machinations of the market and inflation. Not the least important, tax discrimination against interest is a way of discouraging richer classes to thrive in the name of socially disabled. That is why the deductibility of interest on state-local securities is undesirable, its constitutionality notwithstanding. Institutionally, capitalism has come a long way from (11, Goode, 1951, p. 130). "descriptions of a rather idealized securities market in which venturesome individuals of wealth and well-advised widows combine their resources to finance new firms and to expand old businesses."

Interest is not only unearned income, it is also an undesirable burden as a cost. Individual income tax recognises the responsibility of the society to deal with this burden. It is ill-conceived to presume that interest cost has to be related to the production of a taxable stream of income and, therefore, consumer debt, particularly housing loans, should not be out of



the tax net. It is the responsibility of a democratic society to provide shelter to its people. Tax deductibility is an admission of the fact that society does not possess the resources to do that, but is willing to share some burden. What can be debated is whether a direct subsidy will be more efficient than the present implicit subsidy, and not the very basis of aid to housing. Ergo, the rectification of discrimination lies not in discontinuing the subsidy to owners, but to provide that to the tenants also. However, some method will have to be worked out to restrict it to low-income groups. This will remove, to some extent, the bias in individual income tax towards the propertied classes by allowing the latter greater opportunities to understate income.

The argument of relating interest cost to taxable income does not apply to corporate income tax either. Here, "interest paid ... is just as much a part of income as ... profits (13, Harberger, 1965. p 117). If earned corporate and dividend income is "double-taxed", the unearned interest income has a more logical basis for "double taxation". Corporate income tax must also reflect the earned-income bias of the individual income tax. As was seen in Section III, interest deductibility is irrelevant to corporate financial choice. The predictions of standard public finance theory in this regard are plain wrong. Corporate financial choice is governed by the propensity to avoid increasing risk. Goode (11, 1951, p. 140) merits an extensive quotation here: "Although some reckless management groups may be willing to gamble freely with funds of gullible creditors, usually the self-restraint of the management and the imposed restraints of the capital market combine to make for greater caution in use of outside funds. Management groups are often reluctant to assume the fixed or semi-fixed obligations involved in issuing bonds or preferred stock and can be induced to do so only by the expectation of large returns. Management or old stock holders may hesitate to bring outsiders into the business by the issuance of additional common stock. Floating securities is expensive, especially for medium-sized corporations, and is often impossible for small corporations. Management can often use retained net earnings, and usually depreciation and depletion accruals, without actually consulting stockholders, sometimes for purposes that the stockholders would actively disapprove if they were fully informed. Usually a stronger case must be made to get outside capital than to forestall stockholder discontent over reinvestment of internal funds."

In sum, interest matters neither as a source of income nor as cost. This by no means implies that money does not matter and, therefore, monetary policy does not matter and that only fiscal policy matters.

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## **Using Theatre as a Research Tool: Troubleshooting and Benchmarking Pakistan's Devolution Plan<sup>1</sup>**

**Shahrukh Rafi Khan and Aasim Sajjad Akhtar\***

### **Background and Objective**

One of the most key initiatives of the military government that assumed power in Pakistan in October 1999 is devolving power to the grassroots level.<sup>2</sup> The elections for the lower three tiers, (Union, Tehsil and District) have taken place as has the elections for the pivotal post of the District *Nazim* (governor). Notwithstanding expressed reservations about the suspension of democracy, many civil society groups and donors, who had been advocating devolution or decentralisation in the past, hoped for the success of this initiative as one possible way for making effective the delivery of public service to the grassroots level. While others have undertaken benchmarking exercises to evaluate this initiative, it was thought that using theatre as a tool would be a unique method for complementing these other initiatives.<sup>3</sup>

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<sup>1</sup> Feedback from Dr. Glyn Berry of DFAIT (Department of Foreign Affairs and International Trade) at the conceptual stage and financial support from DFAIT is gratefully acknowledged, as are the helpful comments in Farzana Bari's peer review for the SDPI working paper series. In addition, this exercise would not have been possible without the field support of The Asia Foundation Supported DRCEP (Democratic Rights and Citizen's Education Program) partners including the Institute of Development Studies and Practice, (IDSP) in Balochistan, Sungi Development Foundation in the NWFP, South Asia Partnership (SAP) in the Punjab and Pakistan Institute of Labour Education and Research (PILER) in Sindh. Naturally, the role of the theatre group, Interactive Resource Centre (IRC), was pivotal. Rashida Dohad of TAF and Waseem Mohammad and Mohammad Tariq of IRC deserve special mention in respectively helping with the organisation meetings, providing feedback and in very creatively conceiving the theatre skits tailored to the particular locality.

<sup>2</sup> For a detailed analysis and critique of the government's devolution plan refer to Khan (2001).

<sup>3</sup> In this regard, all the numerous evaluations of the government's social action plan and research on the social sector service delivery prior to instituting local government institutions on August 14, 2001, could be viewed as benchmarks. More targeted exercises include the NRB's video documentary, a UNDP/CIDA supported study in several districts, a DFID supported poverty appraisal, a World Bank study conducted by PIDE (Pakistan Institute of Development Economics) and SDPI for the Bank's poverty appraisal and a UNDP supported study on the dispensation of justice by SDPI. The DFID and Bank study are also extensively reviewing the state of social sector service delivery.

Thus the goal of this particular exercise was to use theatre as a tool to identify where bottlenecks and problems in service delivery and dispensation of justice arise under the current system and to solicit feedback on how things may be improved in the future. As the government works towards improving the local government law, on the basis of which rules of business are framed, it was anticipated that timely feedback would be valuable.<sup>4</sup>

While, as indicated above, much benchmarking activity is underway, none of this is actually focused on soliciting feedback on how things could be improved. In this regard, the use of theatre provides a unique opportunity to draw out and solicit feedback from the stakeholders. We thought that this report would complement other sources on the current situation, but also go beyond them in providing suggestions to policy makers on how things should and should not be done in the future.

In general, the objectives of this exercise were to get insights into the shortcomings of the existing system from a grassroots perspective and use those to provide suggestions for improvement. More specifically, we hoped to find out how local bodies' powers, bureaucratic accountability and allocation of fiscal resources should be improved, as perceived at the grassroots level. In addition, we planned to assess the training needs of elected local government representatives in the new operating environment. Finally, we planned to get insights into the problems of specific groups such as women and the very poor.

Another way of stating our objective in a broad sense was that we hoped to have an impact on the formulation and revision of local government rules of business, based on findings reported, and hence on the welfare and quality of life of the majority of Pakistan's population. In the second section of this paper, we outline the method used. In the third section, we critically evaluate the use of theatre as a research tool and in the fourth section, we provide a brief outline of the theatre skits. In the fifth section, we summarise the process and report the findings based on the theatre exercises and we end with a summary and recommendations.

### **Method and Concept**

The following two specific cases were selected for developing theatre skits around:

- i. Delivery of public schooling at the grassroots level.

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<sup>4</sup> Government of Pakistan, 2001.

- ii. Handling of a public safety case of village women reporting sexual harassment.

The reason for this selection was that it would address public service issues, for the most marginalised, both for social sector delivery as well as for the dispensation of justice. Theatre skits were developed to depict public service delivery pre-devolution. The idea was to be balanced but provocative enough to generate a discussion. The skits were altered to suit each specific location.

The urban and rural union councils were selected in each province based on contacts. Each skit was followed by a discussion skilfully guided by a facilitator to solicit feedback. The stakeholders for the schooling discussion were citizens, elected union or *Tehsil* Councilors, teachers and members of the education administration. For the discussion on justice, an attempt was made to include lawyers and district level police officers.

Conceptually, the commonality in the two cases is that we were dealing with a **power** issue. In education, it is the power of teachers relative to parents, communities, and the education establishment. In the sexual harassment case, it is the lack of power of the poor relative to the large landlord and district justice establishment. This imbalance of power as a source of problem in local governance is the conceptual framework that earlier research suggested to us.<sup>5</sup> Hence we sought confirmation for this in the pre-test and having confirmed its value, cast our findings in this framework.

We focused on the union council level because, institutionally, that is as close as the devolution plan gets to the grassroots level.

### **Use of Theater as a Research Tool**

Theatre was used as a tool to ascertain how well the devolution plan was working in practice. Initially, the use of theatre was meant to simply present a situation on which to build a discussion. However, in the testing phase, it became apparent that the qualitative responses, that a visual performance generated, were substantive and richer than those that otherwise might have been generated from a focus group discussion (FGD). Hence, we began to view theatre as a research tool because of the detailed observations and analysis that it induced based on participant discussions.

Thus, we view this research methodology is an extension of the focus group technique. In addition to generating qualitative information

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<sup>5</sup> Khan (2001).

beyond the scope of a FGD, the use of theatre had a great awareness-raising impact. It enhanced the understanding of the participants concerning the research goal and therefore the theatre induced, as mentioned above, very rich feedback.

For example, the depiction of a rape or honour killing in the skits on dispensation of justice facilitated a discussion on the issues that might not otherwise have been possible. The skit broke the ice and immediately enabled the facilitator to launch into a discussion. Without the assistance of a skit, it would have been very difficult to broach the subject in mixed company in very conservative localities.

While there is much that was positive in the use of theatre as a research tool, there are limitations in common with those of the FGD method and even beyond that. Quantitative social scientists view qualitative research methods, due to the limited sampling, as generating hypothesis rather than conclusive findings. This technique would be open to the same criticism, although, in our view, the commonality of findings across all regions and provinces suggests to us that the findings are substantive and, as such, should be taken seriously by policy makers. A limitation more specific to theatre is that the richer expense is derived from a more expensive research tool and hence the sample may need to be even more restricted than the usual qualitative research methods. Given the expense, we would only recommend it for research issues of a very delicate nature for which the more conventional FGD may not be suitable.

Finally, our research here, as elsewhere, shows that researchers may be prone to romanticising the wisdom and sound ideas and suggestions that are likely to emerge from grassroots level research. Our discussion sessions were rich in findings about what was going wrong in the past, the chaos of the interim period between two administrative systems and in identifying structural problems and systemic needs, but poor in concrete suggestions about what could be done.

### **Theatre Skits**

As earlier indicated, two theatre skits were developed to explore social sector service delivery and the dispensation of justice. The focus was to use the skits to provoke discussion among stakeholders on problems, explore how were they dealt with in the past, discover what stakeholders expect would happen under the new devolved system and solicit their recommendations. Both the skits were modeled on real events.



### ***Education Skit***

This skit starts with a classroom scene in which a teacher is seen disciplining, or rather, abusing all the students except for the son of the local influential. He beats them excessively, humiliates them, and sends the girls to his home to help with his housework. A friend visits, warning him not to be too harsh since he might get reported. He laughs this off telling his friend that he has worked hard to develop a close relationship with the local influential. Thus, he claims that he now has the political backing to do as he pleases. Also, he points out, that with the low salary he gets, he has no incentive to be conscientious and professional anyway.

In the next scene, one of the boys who got beaten complains at home to his grandmother. She is aghast at how much he has been beaten and vows to take him out of school. She says he is better off learning how to be a mechanic or something similar. The father, mother and sister all proffer a variety of comments, including that he must have been beaten because he didn't do his work. Eventually, the newly elected councilor happens to drop by, and the grandmother tells him of the teacher's brutality. The councilor vows to take the case up saying that no teacher should beat a child so badly.

The final scene is again in the classroom, and it is much the same as the first scene in spirit. The teacher is asleep and the students are enacting various punishments he has meted out to them.

### ***Sexual Harassment***<sup>6</sup>

The first scene is a typical village household scene. The husband and wife sit down to have a discussion on a problem they are facing with regard to their small piece of land, which is fully enclosed in the land owned by a big landlord and in adjoining land that this landlord is acquiring. The family is concerned about pressure from the *wadera* (landlord) regarding selling their small piece of land also.

In the next scene, they go to meet the newly elected councilor to tell him of the tricky situation they are confronting. The councilor promises to meet with the landlord and persuade him not to force this family to sell their land. The father comes home relieved that the landlord will not capture his land. However, in the same scene, the family realises that one of the girls is late in returning from the village well, where she has gone to

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<sup>6</sup> This was the skit prepared for Gujrat, Hyderabad and Guzdar. Honour killing is more common in Mardan and that skit is described in 3.3.

fetch water. As the concern grows, they hear sharp cries -- the landlord's goon has raped the girl.

### ***Honour Killing (Mardan)***

The skit starts with a household scene in which the husband and wife are concerned about the impending wedding of their daughter to her Uncle's son. They feel that the nephew is not a good match, since he is involved in drugs and other unpalatable activities. However, the Uncle is an influential man, and they are afraid about how to tell him that they don't want the wedding to go ahead. The cousin wedding had been agreed to at the birth of the girl. However, the son of a family friend is an alternative prospect for their daughter. They decide to ask the newly elected councilor for advice and help.

In the next scene, while they are having a discussion with the councilor, the Uncle shows up. They explain the situation to him and he seems to have a fairly reasonable response to his younger brother's concern for his daughter's welfare. He warns them that his son has a volatile temperament, but, nonetheless, assures them that he will persuade his son to call off the marriage.

The final scene is again in the prospective bride's home where preparations for the alternative match are underway. Suddenly, someone in the family realises that the daughter has not come home from school. They cannot find her despite checking everywhere. Finally, a friend enters the house frantically and informs them that the nephew shot their daughter to safeguard his "honour."

After each skit, the facilitator initiated and managed a discussion, ensuring the participation of almost everyone present. This revealed the stakeholders understanding of the current system and its ability to deliver in a speedy and efficient manner. The problems that emerged and the feedback for improvements were documented and are reported on in the next section.

## **Findings**

### ***Union Council, Chiriawala (Rural), Gujrat District, Punjab<sup>7</sup>***

The location for the skit presentation and discussion was a local government school. The profile of the participants was reasonably varied. There were teachers, doctors, lawyers and ordinary citizens present. About

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<sup>7</sup> Fieldwork conducted on August 4, 2001.

eight elected union councilors (DC) from the local DC were present. including the *nazim*, and officials of the education department were also present. Police officials and representatives of the local magistracy were invited but did not attend. In all, about 40 people were present.

The skits and discussion was not allowed to go ahead by the *Nazim* of the local union council, who interrupted the proceedings just as they were getting underway. He claimed that he had been misled and that the event was not true to the way it had been described to him when he agreed to attend. He made rude remarks about the local organisers and their 'impure' intentions. Finally, he told the rest of the gathering to disperse immediately. When requested to at least listen to the organisers and guests, he started to issue verbal threats to the local organisers, and eventually, the gathering broke up.

In the immediate aftermath of the incident, it was thought that it might be better for the local organisers if the field team departed immediately to avoid any future confrontation. However, upon discussion, it was decided that it would be a show of solidarity with the local organisers if the group remained intact at the location of the incident for a while. Subsequently, everyone went back to Kharian town to discuss what had transpired.

A number of problems were identified including that not enough officials, particularly police officials, of the administration were present. The Assistant Education Officer (AEO) was present, and she was quite supportive of the initiative, and even asked the *nazim* to be patient when he had his initial outburst. The absence of the police officials irritated the *nazim* because he clearly wanted to use this opportunity to meet with them. It was also established that the *nazim* was from an influential background and was likely to have been displeased not being accorded a special seating status in the gathering. There was also mention that women from his *chaudhury* clan were sitting together with *kammi* ("untouchable" caste) women, and that this was not generally acceptable to the influentials. There was talk that the *nazim* had objected to the un-Islamic (mixed) nature of the gathering. However, since women from his clan did voluntarily attend, this was probably an excuse for his real misgivings.

The unexpected turn of events provided a good learning opportunity. It highlighted that the elite of the area still have significant say in local affairs and that one election is not likely to change this or change deeply entrenched modes of behaviours and attitudes. Indeed, it was apparent that all the councilors present were part of a panel because not one of them disputed the decision of the *Nazim* to walk out. Local

community members informed us that the area surrounding Chiriawala is known for violence and feuds between rival influentials. The attitude of the *nazim* was very uncompromising and authoritarian.

The prospect of such a person being the ultimate authority in the area was quite unsettling, and brought home again that far reaching reform, such as land reform, to create a more level playing field should accompany devolution if it is to be successful. It also showed that with such leadership, in practice, there is likely to be little change in the way services are provided and justice is meted out.

The *Nazim's* outburst was unexpected and a warning about the possible behaviour of elected Councilors. As the system puts much faith in these elected representatives (new faces) being change agents, when this premise proves false, the entire devolution exercise becomes questionable. Another lesson learned from the experience was that local organisations are unlikely to be accorded any importance or respect by the administration and the police, and therefore the provincial and national partners should issue invitations and explanation of the objectives of the gathering. It was also decided that the Minister for Local Government should be informed about the initiative and asked to send out requests to the various officials to be involved in the exercise to cooperate.

***Union Council 54 (Urban), Gujrat District, Punjab***<sup>8</sup>

Efforts were made immediately after the incident in rural Gujrat to contact relevant officials to ensure that no problem arose on the following day in Gujrat city. Fortunately, there was no such repeat incident, although once again police officials did not attend. This was despite a confirmation from the SSP (Senior Superintendent of Police) Gujrat that he would send the DSP (Deputy Superintendent of Police) to the exercise.

The location was the Gujrat Press Club and the participant profile was otherwise quite good. Local lawyers, doctors, teachers, the district education coordinator (DEC), and other civil society groups were present. In all, about 45 people attended, and fifteen of them were women and seven were elected Councilors.

The programme started with a brief introduction to the objectives of the exercise and then the first skit was presented about the abusive and negligent teacher in the local government school. The skit was well received, and many people agreed that the situation depicted was very close

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<sup>8</sup> Fieldwork conducted on August 5, 2001.

to reality. Among those who agreed was the DEC, who went on to say that the lack of resources was not the primary constraint to improved education, but rather, the lack of will and commitment on the part of teachers.

The discussion then became a more general debate about development and systemic problems pertaining to that. When the focus was brought back to the actual problem presented and how it was addressed in the past and how it should be addressed, the councilors were very vocal. They said that they would not allow the practice of abusing children in schools, and would also eliminate absenteeism and improve teaching standards. These broad goals having been shared, the discussion turned to how this would actually take place, with many of the audience skeptical about the ability of the new representatives to bring about a change. The councilors admitted that the only actual information they had been given was that committees were to be formed which would include educationists, other citizens and themselves to monitor the state and functioning of schools in the area. Upon being questioned about how the committees would actually function and how their membership would be determined, it became apparent that the councilors were not informed. A point was made that existing school committees were not operational. The question was also raised as to why one should expect the new committees to be any different.

The issue that arose next was whether the committees and the councilors themselves would actually have authority under the new system to address the sort of problem depicted by the skit. There was again no consensus on this issue, and the DEC himself was unable to identify what his role was in the new set-up. The councilors, however, repeatedly stated that they would attempt to create public consensus on such issues and would work on them regardless of whether the official set-up actually gave them room to take initiatives. The councilors mentioned the role of parents repeatedly, and said that, if nothing else, they could at least interact closely with parents and convince them to become a larger part of their children's school going experience. A number of people pointed out that very few parents took an interest in their children's education, and that this was part of the reason that the quality of education was poor.

The issue of political interference was also raised repeatedly, and it was established that both politicians and bureaucrats were guilty of this in the past. It was pointed out that unless this interference was stopped, there was little chance that there would be any change in how schools operated. Again, the outcome of this discussion was that there was no real clarity on whether councilors would have the power to stop such interference, and also on whether bureaucrats would still have the same kinds of power.

After a break, the second skit was presented. This skit, despite touching a very sensitive issue, was again well received and left the audience quite pensive. The discussion remained very fluid and relaxed, but also very focused. The issue that immediately arose was whether or not, under present circumstances, such a case would even have been reported. Two points were flagged. First that this issue was considered to be taboo at a public level, and, therefore, it was rarely reported. Second, that, even if it was reported, the chance that there would be a judgment in favour of the victim were slim because officials, including the police, were often co-opted by influentials.

As soon as these issues were identified, the debate focused on why such incidents were not even reported in the first place. In many ways, it was established that the victim in this case was always likely to face the same constraints to receiving justice regardless of the system in place. Indeed, it was reiterated many times over that this was a societal bias that had to be corrected at all levels before any governance system could even be discussed. In this regard, the role of the press was discussed at length, and it was suggested that the press had often been part of the problem by sensationalising the issue and further alienating the victim and her family. There were some journalists present who claimed that their reporting had been much more progressive, and that they would continue to play a positive role in bringing perpetrators of such crimes to justice.

The Councilors once again admitted that they had no real notion of how to go about addressing this sort of problem in terms of the new system and hierarchies. However, they were adamant that they would definitely take such issues up in earnest and try to ensure that justice was served. One of the councilors concurred with the opinion that this was an issue that exposed society's overall biased attitudes, and that addressing this was the most important long-term step that was needed. They also pointed out that much time would need to be spent with the victim and her family to assure them that they should take up the case. The councilors said they were committed to resolving a case like this in cooperation with the police and administration, but this statement seemed like lip service.

A citizen in the audience opined that, in cases such as these, concerned citizens needed to come together to mobilise public opinion. The councilors were even encouraged to organise rallies to highlight the issue, in a sensitive manner naturally, so that the social taboo could be challenged. It again seemed that the councilors simply agreed with this suggestion without really offering any idea of how they would tackle the problem. It seems clear that the councilors' are as yet unsure about what powers they will actually be able to exercise and therefore their comments were largely hypothetical

and based on what they would like to do rather than what they will be able to do. The discussion concluded with an acknowledgement that, on issues such as these, a fundamental change in people's psyche was primary. The debate about whether the new system would improve the dispensation of justice in such a situation was more or less an aside. The absence of the police made it difficult to say what the dynamic would be between the new councilors and the police when such incidents took place.

***Union Council 9 (Urban), Hyderabad District, Sindh<sup>9</sup>***

As in Gujrat, the administration did not show up despite being sent a letter from the Federal Minister for Local Government and Rural Development requesting support for the exercise. Elected Councilors from several urban Hyderabad union councils were present, not just those of UC 9. The attendance otherwise was reasonable, with journalists, schoolteachers, lawyers, social activists, and development workers all represented. There were a total of about 40 people present. The poor turnout of the local administration and Councilors was partially attributed to Councilor oath-taking ceremonies taking place that day. Nevertheless, the local partners had clearly not done an adequate job in mobilising participants.

That said, the discussion among those present was quite lively and raised a number of good points. All, including the councilors, participated in the discussion of the first issue of the abusive and negligent teacher. Everyone stressed the negative effects of political interference, and suggested that this was the main impediment to improving the quality of teachers, and therefore education in government schools. In particular, it was pointed out that there was virtually no way of ensuring that teachers were disciplined or that their standard was improved. There was a general consensus that until now, whenever such incidents took place, parents had attempted to take matters into their own hands and had confronted the teacher directly. While this practice was condemned, it was also acknowledged that parents did not want to meet with the administration, because they felt, based on past experience, that this was pointless.

The *Naib Nazim* of UC 9 suggested that all such affairs should be decided within the school itself, and therefore the parent-teacher-principal relationship should be strengthened. This was a clear rejection of the role of the bureaucracy in the running of schools, which reflected the strained relationship between citizens and the state. There was also little indication that the councilors had any notion of working with the education

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<sup>9</sup> Fieldwork conducted on August 12, 2001.

department to improve matters. They repeatedly stated that school affairs should be settled within the school itself.

The discussion also focused on the limited role of parents in their children's education—the parent-teacher associations and other such groups were criticised for being inept. Indeed, it was even pointed out that parents themselves abused their children for irritating teachers. The councilors admitted that their primary role in improving this situation would be to interact with parents, teachers, and principals. However, as in Gujrat, the actual role of councilors within the new system, the powers that they would be able to exercise, and the means of addressing such problems were not clear to the councilors themselves. They pointed out that there had been no knowledge of how committees would operate to redress such problems. This lack of knowledge seems to be the biggest problem facing the new councilors, as well as ordinary citizens who are skeptical about the ability of the new system to deliver change.

The skit about the sexual harassment of a local girl by the *wadera* generated a lot of discussion along the same lines as in Gujrat. The predominant issue once again seemed to be whether or not social custom in the area would permit open investigation of such a case. Indeed, on this occasion, there was even less of a sense that councilors or any new system would induce any change. One suggestion was that women councilors should take such issues up both with the family concerned and with higher authorities. Some of the women councilors were very committed to raising such issues but flagged the important point again that they were unaware of the extent of their powers and how they were supposed to interact with entities such as the police and administration. They stressed the importance of councilors being united so that they could together combat the resistance they might face. Indeed, one women councilor said that her first instinct would be to worry about her own safety because of the potential danger arising from challenging a local influential. The point was also made that this should not only be the responsibility of women councilors but that the male councilors should be just as vocal. In fact, men taking up such an issue might actually carry more weight.

The role of the press was again discussed in this regard. There was a heated debate about whether the press actually played a positive or negative role in highlighting such incidents. It was established that the local Sindhi press was more progressive than the Urdu press. Many journalists present offered their services to councilors and citizens in bringing such injustices to the fore and generating pressure for action to be taken. This was consistent with the view expressed that councilors and civil society in general needed to come together to address such issues. Many of those present actually



suggested that events such as this one be taken to communities, and theatre, in particular, be used to highlight the issues. They felt that this could become part of a larger awareness-building campaign that was needed to combat the problem of sexual harassment.

The absence of the police made the discussion quite one-sided. There was a consensus among those present that the police had never played a positive role in such cases, and was also not likely to start doing so now. When asked whether they would cooperate with the police, the Councilors, as in Gujrat, were not too convincing, even though they claimed that they would attempt to work with the police. There was also a brief mention of legal recourse. However, it was agreed that the court system did not offer much promise and that this would defeat the purpose of devolution in which the solutions were to be identified and resolved at the local level. Overall, the discussion again highlighted that this issue is more about a general societal attitude rather than a system that does not offer justice. If the taboo can be challenged, so can the systemic constraints.

***Union Council 4 (Rural), Hyderabad District, Sindh<sup>10</sup>***

The turnout for this session was quite bad. While the District Education Officer (DEO) for Primary Education was present, there was only one councilor from UC 4 present. Once again, the excuse given was that oath-taking ceremonies for councilors were taking place. Otherwise, there was a decent representation of civil society, although there were only three women present, and they did not offer their opinion during the discussion. About 25 people attended the session.

The discussion after the first skit was quite similar to the discussion the day before, with the primary emphasis on the role of teachers and political interference. However, on this occasion, a number of schoolteachers themselves were very vocal, and became defensive on a number of occasions. They emphasised the lack of respect that society accords a teacher, and the impact that this has on the teacher's own commitment and performance. The schoolteachers also pointed out that parents were generally unconcerned about their children's education and that it was important for this to change. The PTAs were constantly referred to as a vehicle to improve the quality of education, and the councilors were encouraged to work with PTAs to tackle problems such as the one presented in the skit.

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<sup>10</sup> Fieldwork conducted on August 13,2001

As expected, the only councilor present said he had no notion of how the new set-up would function and the means through which he or his fellow councilors would address a problem such as the one presented. He asserted that he would take up such issues, but was not clear how effective he could be. There was a great deal of criticism targeted at the DEO and the administration in general including accusations of corruption, made by some schoolteachers. We learnt that the DEO even warned the person who made the remarks that he would have him fired. The DEO himself claimed that the problem was multi-faceted, and included problems of maintaining teacher standards involving parents, and improving the curriculum. He seemed a little uncertain about how he would fit into the new set-up and was uncomfortable about the prospect of being dis-empowered. However, he said that he would be willing to work with councilors to improve the dismal state of education.

Much discussion took place on whether teachers should be evaluated on a regular basis. There was no consensus, and the councilor present seemed to be unwilling to incur the wrath of those schoolteachers present by taking a stand on the issue. The overall consensus that emerged from the discussion was that there is a long way to go. However, it was really too difficult to make a fair assessment of the situation with such limited attendance, particularly on the part of the elected representatives.

The second skit was received well as it had been throughout, which is quite surprising. The *Musalihat* (Justice) Committee, which has been mentioned in the Local Government Ordinance as the local dispute resolution mechanism, was mentioned for the first time by a participant, who was neither a councilor nor from the administration.<sup>11</sup> He pointed out that this committee should be the forum through which such cases should be dealt with. As it had just been announced on that day that the Public Safety Commissions would exercise a lot of power, he also suggested that forum. However, the point that was made repeatedly by all present was that local influentials still had a huge hold on how things were run, especially now that so many of them, or their agents, had been elected into local government. Many people were skeptical about the capacity of the *Musalihat* Committee to exercise power and reach decisions. Even the councilor present admitted that in the event that the local *wadera* had to be challenged, he was unable to say for sure whether all the union councilors would be willing to take a stand against him.

The point about the *Musalihat* Committee is important because it was the first time in the four sessions that it was mentioned. The person

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<sup>11</sup> Government of Pakistan, (2001,pp:57-58).

who brought it up was critical of the councilors saying that they should have taken an interest in finding out about the system, regardless of whether they were given training about it or not. The other point that the discussion raised was whether or not the *Musalibut* or other local committees assigned the task of resolving disputes would actually be able to do so. The alternative is dispute resolution by district level representatives, which then would mean that there really has been no devolution. Also, since District *Nazims* are normally from elite families, there was a feeling that there is even more chance than before that an ordinary citizen would be denied justice.

The point about the social taboo involved in this issue was raised as it was in earlier sessions. The police was targeted for being an unjust and feared institution. There was general scepticism about any of the existing institutions actually playing a positive role. Most people were also not convinced that the newly elected Councilors would have enough power to make an impact. Therefore, they emphasised the role of public-interest organisations and said that it was important that civil society alliances and networks be developed. In this regard, there was talk once again of involving journalists, bar associations, students, and other civil society groups. While there was agreement that issues should first be raised through the Councilors, there seemed to be more faith in these civil society networks. There was not much expectation that Councilors would work with civil society to tackle such problems.

The discussion was quite comprehensive, though unfortunately lacking the involvement of the administration. The positive element of this gathering was that civil society representatives seemed to be quite committed to generating pressure for change. If the Councilors can be seen as a means to carry forward this desire, and if the Councilors realise the potential of civil society in strengthening their hand, there may be room for optimism. However, it is clear that the influentials will make life difficult for anyone who challenges the status quo.

***Union Council, Abad Karkh (Rural). District Khuzdar***<sup>12</sup>

The session in Abad Karkh was perhaps the best of the five discussions up to this point in the fieldwork. This was in part because, for the first time, the police was represented by the local SHO. About 15 councilors and representatives of the Education Department were among the 30 people present. Unfortunately, there were only two women in the gathering, and while they were elected councilors, their input was very limited.

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<sup>12</sup> Fieldwork conducted on August 30, 2001.

The discussion started off after the education skit (the skits were performed in Sindhi because the group came from Hyderabad, and also the local community was able to understand Sindhi). Most of those present, except the representatives of the Education Department, agreed that the situation presented was an accurate depiction of reality. They claimed that, in the past, the political appointments and interference of local politicians and influentials had ensured that problems, such as the one posed, could not be resolved because teachers not performing their duties could not be disciplined. They referred in particular to the tribal system in the area in which *sardars* (tribal chiefs) were very powerful. The Education Department was alleged to have been directly involved with *sardars* in the making of political appointments. In fact, it was established that very few cases of student-abuse by teachers were even taken to the Education Department, since there was really no point expecting any redress. It was also agreed that parents were often unsupportive of their children who were subjected to abuse.

In discussing the resolution of such problems under the new set-up, it was clear once again that the councilors present had little notion of what their real powers were and how they would go about addressing such problems. While they were keen to take whatever steps they could, there was a lack of direction and it seemed clear that action until now had been limited. The officials from the education department suggested that training had been offered by the government on how to take up such issues via the formation of local committees. Some councilors verified that they had received such training, but they did not think that this training was very effective. The women councilors present had even less of a notion of what they could do to address problems such as the one presented.

The second skit was received quite well considering that it was initially considered risky to present such a skit, with women actresses, in a conservative area. Nevertheless, those present did not react negatively, even though they were initially hesitant to acknowledge that anything of the sort happened in their communities. When finally there was a recognition that such incidents do occur, after the facilitator kept coming at the issue in different ways, those present felt that such matters should be handled within the community itself according to tribal custom.

In fact, the main response from the participants seemed to be that the best possible solution for a girl who had been raped would be for the rapist to marry her, although a couple of voices were raised about the wishes of the girl. Most felt this was reasonable, given the fact that the girl would otherwise be considered a social outcast. There was little indication that such cases were taken to the police and resolved. While the SHO

present pointed out that under no circumstance would any leniency be given to perpetrators of such acts, he also pointed out that, on a number of occasions, cases filed with the police were retracted “voluntarily” because they involved influential people.

There was little indication that the councilors felt empowered to really do anything about such cases, although they claimed that they would try and work from within the tribal set-up to ensure “justice” was meted out. They did not take the possibility of working with the police very seriously, as they clearly did not feel that this was an external problem. Some of the younger councilors were more weary of assuming that they could work within the tribal system to address such issues, but others were not at all willing to have such cases taken outside the communities. Overall, however, it was clear that this is an issue that was not likely to be impacted a great deal by a local government system being put in place. It was acknowledged that such problems would not disappear overnight. In fact, it was clear that there was little commitment from the councilors present to addressing the issue at any great length; in many ways they seemed to be protecting the tribal system. Women councilors offered very little input on this issue, in particular, and in general seemed quite uninformed.

***Union Council, Kaiitl (Urban), District Khuzdar<sup>13</sup>***

While the administration was not present, there were however a large number of councilors including the *nazim* of *Tehsil* Khuzdar. The two women present left shortly after the discussion began. There was a good representation of lawyers, teachers, doctors and other civil society groups. In all, there were about 40 participants. This was a very interesting session, and one that indicated the high level of political consciousness among the group of councilors that have been elected in the area. This political consciousness translated into a fair amount of cynicism and despondency about the capacity of the new system to actually be effective. From the outset, it was clear that the vast majority of councilors present were disillusioned about not having any distinct set of duties and the lack of clarity about their powers. Comments were made suggesting that the army was using the councilors as pawns, and that there was no real sincerity on the part of the government to devolve power.<sup>14</sup>

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<sup>13</sup> Fieldwork conducted on August 31, 2001.

<sup>14</sup> The *Nazim* of the *Tehsil* told us in private conversation that he was planning to visit the local Brigade Commander to find out about his powers, duties and responsibilities.

Prior to addressing the specific problem identified in the skit, there was a long general discussion about the nature of the new system and speculation about what the intention of the architects might be. Some, no doubt voicing a more widespread belief, referred to themselves as the B-team of the army. The councilors said that they did not expect the bureaucracy to cooperate with them to address such issues because the bureaucracy had too much of a stake in the current set-up. The councilors were critical of not having received formal indication of how they would go about resolving such problems. There were a few voices that highlighted the need for councilors to come together, harness public support, and do whatever they could regardless of whether or not they will be empowered to truly address people's problems.

There was some mention of the role of parents, the importance of teacher training and monitoring. The relative effectiveness of private schools compared to government schooling was emphasised. Attention was drawn to the fact that private school teachers' salaries were lower than those of government school teachers, highlighting that low salaries was not a satisfactory excuse for the poor quality of education. Suggestions were made regarding how to operate government schools like private schools. However, the thinking among the councilors was that there was little chance that they could seriously change the status quo. Beyond this, there were few concrete suggestions about how to address the specific problem that was posed in the skit. The bureaucracy was criticised repeatedly for being opposed to the new councilors.

The second skit once again brought forth issues about the new system and the intentions of its architects. There was general agreement that the problem presented was more of a societal problem than one that was likely to be affected greatly by the form of government in place. There was considerable police bashing in this session. It was clear that the councilors, in particular, had little expectation that the police would do the right thing under any circumstance. They were very open about political heavyweights getting away with sexual crimes such as the one presented, and said that a tremendous change would need to take place for this hegemony to be challenged. They were also very clear that the community in question decided most cases of this kind in a *jirga*. They highlighted that it was the *sardars* who were more or less in control over such decisions. The one *sardar* present walked out during the course of this discussion.

The councilors reminded us repeatedly that they had won the elections despite the opposition of some of these *sardars*, and that this was therefore an indication of the type of commitment that they had. There were a lot of recriminations associated with a feeling of powerlessness under

the new set-up. They were pessimistic about the possibility of the press, administration and others in civil society working with them. The notion of justice was again quite limited, with most present admitting that the girl who had been raped had little chance of leading a normal life. They therefore agreed that the best possible outcome for the girl would be that she get married off to the person who had committed the crime.

There was such a sense of frustration that one of the councilors present demanded that we tell him what was going on and how this system was supposed to be run. After much insistence, he finally acknowledged our role as facilitators and conduits of information. This incident, however, was very indicative of the general feeling of all of those present.

*Union Council 33, (Urban). District, Mardan<sup>15</sup>*

The session was preceded by a two day period of great apprehension. The religious right is very influential in Mardan, and the intelligence agencies had made several trips to warn the organisers that they risked inciting the wrath of the clerics if they went ahead with the theatre. Eventually, it was decided that the event would take place, although parts of the skit were omitted because there was a fear that they might induce a negative reaction.

About 40 people participated in this session including, the local SHO, a number of teachers, lawyers, and journalists. A sizable number of councilors were present, including women, and overall it was a very good session. There was quick agreement after the first skit that it was very accurate, and that there were definitely problems with the education system. There were a variety of opinions expressed, including that the quality of education received was based on class background. Further, they added that there were deliberate attempts on the part of elite groups to ensure that common people did not receive a good education to limit their social mobility. Overall, those present agreed that the system was highly political, and that this was largely the reason that teachers were not compelled to provide quality education.

A number of teachers were defensive and suggested that there were many factors involved in the poor quality of education including little interest by parents in their children's schooling and low teachers' salaries which acted as a disincentive. Surprisingly, in response to this, a teacher pointed out that private schools paid teachers considerably less than

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<sup>15</sup> Urban fieldwork conducted on the morning of September 15, 2001 and rural fieldwork in the evening of the same day.

government schools. There was agreement that the system needed an overhaul and that there needed to be special emphasis on education so that everyone, including students and parents themselves, made it a priority. One teacher mentioned that he had received training from the local education department and that had convinced him to stop treating his students badly. He urged other teachers to also learn from this.

The councilors present were not able to offer any concrete ideas on how to improve the system. As before, all of them claimed that they had little knowledge of the new system and they were not clear on what their powers were. There was a vague sense of a committee to be formed to take up the issue of education, but most of the councilors seemed to be indicating that their main role was simply to alert higher authorities, i.e. *Tehsil* and district officials, to the need to take notice of problems. There was little sense that any problem could actually be resolved at the union council level. There was also little faith in working with the education department itself.

The second skit was the real cause of concern among the organisers because they felt it was very risky in the local environment. Nevertheless, there was no ugly incident and there was some lively debate on the issue. The SHO present immediately pointed out that honour killing, under new legislation, is a capital crime. He claimed that the police acted on every case it was presented with. This claim was however disputed by most of those present, who generally agreed that very few crimes of this nature were reported. It was apparent that no one had much faith in the police, but, most people, including councilors, were not at all averse to working with the police to address such issues.

There was a lively debate about the nature of this crime, and whether it was considered a crime in the first place. The discussion essentially became a debate between the women and men present with the women suggesting that male attitudes had to change before such problems were ever going to be truly resolved. The men suggested that it was women who harboured the most biased opinions about women's roles in society, because women were most bound to marriage customs and other social biases. Nevertheless, there was consensus that the problem needed to be challenged in terms of societal attitudes at large.

When the discussion about potential means to address the problem began, the SHO painted a very positive picture of the police's role in such cases. He went on to say that honour killings (he used this name to identify this type of murder himself without being prompted) are to be treated as any other murder case. He refused to acknowledge that many such cases



went unreported and said instead that the police would investigate such cases whether they were reported or not. There was little agreement with this among the larger group. However, councilors did say that they wanted to work with the police to take such cases up. Councilors in general seemed to think that such cases could be taken up on an individual basis if all councilors took them up together. Nevertheless, the debate mainly centred on how to change attitudes in society.

***Union Council 70, (Rural). District Mardan***

There were no women present, although one later joined the proceedings, and the atmosphere was very intimidating. A DSP (deputy superintendent of police) was present, and belonged to the village in which the programmes was being held, but there were no officials representing the education department. A number of teachers were present along with a couple of lawyers. There were six winning candidates present among a total of 45 participants. There was some concern right before the event started about the appropriateness of females participating in the skits. However, there were assurances offered by the local organisers that there was no cause for concern and so the performances went ahead with the women covering everything up but their eyes. The education skit was well received - it was performed in Urdu rather than the local language (Pushto), but that was not a problem.

There was agreement, including among some educationists who were present, that this was an accurate depiction of the current situation. They suggested that the problem was multi-fold and included the lack of parental responsibility, as well as the lack of a culture of discipline. They also lamented that teacher's salaries were low and that therefore there was an incentive problem. There was little debate on these issues beyond these basic points.

The discussion about how the new system and councilors could help improve the situation raised many issues. It was quite clear that councilors were from affluent backgrounds, possibly part of a panel supported by the local Khans. It was clear that these councilors had as yet done very little. For the most part, they made reassuring promises in typical politician fashion. When repeatedly asked about how they would actually go about their business, with particular regard to the problem posed to them, there was very little they had to say.

They mentioned having received councilor training, but as was the case in other districts, there was not much indication that this amounted to much. There appeared to be a lack of commitment, and it seemed that most

people viewed the local government plan to be a token exercise. The councilors seemed to view it as a way of cementing their established social standing in the area.

The second skit truly revealed the cultural and social realities of the area. There was a long, heated debate about religion and custom and how these factors did or did not contribute to the practice of honour killing. There seemed to be a consensus that a correct interpretation of Islam did not promote such practices. Almost all the participants acknowledged that honour killings were part of Pathan culture and custom. It was clear that most of those present accepted this as reality, and challenging this custom was never really considered an option.

At this point, a local woman social worker mentioned that this was a crime and that it needed to be treated as such. She also pointed out that it was society's responsibility as a whole to prevent such crimes from taking place. Her outspokenness was admirable considering the hostile environment. We learnt that this woman has been protesting honour killings for some time through a local organisation that she has formed. As a consequence, she was more or less an outcast from the community.

The DSP then spoke and said that new laws had been enacted that equated honour killings to a capital crime, and that this would be enforced. However, when asked about how often such crimes were reported or how often investigations were actually completed, the DSP admitted that very few cases were actually resolved. It was also established that even if cases did go to completion, very few families actually received justice.

When asked what could be done about the situation, a very cavalier attitude was predominant. Even those who cited Qur'anic references, indicating that the practice of honour killings was un-Islamic, were of the opinion that it would be pointless to try and challenge the Pathan custom. While they themselves acknowledged that this position was contradictory, since Pathans were Muslims, it was clear that this society does not presently have the will required to challenge the custom. At this point, councilors were not distinguishable from the rest of the audience, and, as in other areas where these sessions were held, social customs rather than the system of government was the issue.

### **Summary and Recommendations**

We used theatre as a research tool to scrutinise the rules of business pertaining to the devolution of power to the grassroots level. Theatre was

viewed as a valuable tool because, if well done, it could provoke discussion among the relevant stakeholders and get important feedback and suggestions. Thus, it would be possible to get insights into the shortcomings of the existing system from a grassroots perspective, and get suggestions for improvements. At a minimum, it would help in benchmarking and trouble-shooting.

The more ambitious specific objectives were as follows: Finding out how local bodies' powers, bureaucratic accountability and allocation of fiscal resources should be improved, as perceived at the grassroots level; Identifying where councilors and officials require training in the new operating environment; Generating greater interest in the local political processes; Generating greater involvement of voters and representatives in the new institutional framework; Getting insights into the problems of specific groups such as women and the very poor; and identifying areas for further exploration. In short, the objective was to have an impact on the local government rules of business and hence on the welfare and quality of life of the majority of Pakistan's population.

High quality theatre skits were conceptualised by the Interactive Resource Centre (IRC), and staged by extremely professional groups of local female and male actors trained by IRC. The skits pertained to problems with regard to the delivery of social services, specifically student-abuse by teachers in education, and the dispensation of justice, specifically rape (honour killing in Mardan). These were shown in four urban and four rural union councils, one in all the four main provinces of the country. The four districts visited were Gujrat in the Punjab, Hyderabad in Sindh, Khuzdar in Balochistan and Mardan in the NWFP. The fieldwork extended from August 5, 2001 to September 15, 2001, in all cases after the last phase of the local bodies elections. The fieldwork was facilitated by field support of DRCEP (Democratic Rights and Citizen's Education Programme) partners including the Institute of Development Studies and Practice (IDSP) in Balochistan, Sungi Development Foundation in the NWFP, South Asia Partnership-Pakistan (SAP-Pk) in the Punjab and Pakistan Institute of Labour Education and Research (PILER) in Sindh.

In both cases, we explored the issue of how the power distribution, at the grassroots level, between the state (local administration), local elites, local representatives and the citizens influences the outcome in the delivery of services. We focused on the union council level because that was the closest the devolution plan gets to grassroots empowerment. Stakeholders gathered for the viewing included elected local government representatives,

district education and police officers, journalists, members of civil society groups and citizens. A number of findings emerged from the discussions that were facilitated after the viewing of the skits.

The skits, including that on sexual harassment, were viewed as highly representative of reality, very well received and provoked much discussion. The exercise was very effective as a barometer of the thinking of the new councilors, for benchmarking and for the identification of needs and suggestions from the grassroots. There were some universal findings and some specific to a particular urban or rural union council.

The starkest finding was the complete confusion that prevailed among both the councilors and local administration with regard to what their responsibilities and powers were under the new system. Some of the councilors had been exposed to rudimentary training, but there was no indication that it was helpful in this regard. Another finding, self-evident but nonetheless important, is that attitudes, and certainly a “feudal mindset,” do not change overnight. Thus, in so far as the local elites (variously called *sardurs*, *khans*, *waderas* or *jagirdars*) captured the union council and higher tier seats for themselves and their panels, the power based traditional manner of doing things and getting things done will become accentuated. In all the union councils we visited, this is the reality both kinds of service delivery will have to contend with.<sup>16</sup>

In education, it was the political interference of the elites that determined who the teacher would be and provided immunity in case of poor delivery. In the cases of sexual harassment or honour killing, no one believed it would ever be possible to get justice if the feudal lord or his cronies were involved in the crime. Also, it was universally recognised that the real issues in such cases are prevailing social attitudes and in power structures and not changed local government structures per se. Thus, given existing norms, most cases of rape are not reported, and, even if they were, given existing power structures, there is little chance that there could be a settlement against the influentials.

The level of knowledge and awareness, particularly among the women councilors, was extremely low, with some exceptions. There was a vague sense that committees would be established to deal with the problems identified. Those who had received a smattering of training indicated that

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<sup>16</sup> For accounts of the importance of local power in determining the outcome of the 2001 local government elections, refer to Khan, Akhtar and Khan (2001). The two reports by Bari (2001) also incidentally touch on this issue.

the problems would be reported to and resolved at the district level. Thus, it was not clear how, even at the union council level, they were going to be empowered to resolve local problems. However, the level of enthusiasm among the newly elected councilors was high. There was scepticism though on their part about whether the local administration would really respond to their initiatives to resolve problems, notwithstanding their uncertainty about what powers they would have. They felt that the local administration had too much at stake in the existing corrupt system to allow real change. There was also scepticism on the part of the citizenry with regards to whether the new system would deliver anything. A large number viewed it as an opportunity for the influential to cement their social standing by becoming councilors. Finally, there was deep distrust of the police across the board and also doubts about the ability of councilors to work with them.

The more specific findings that pertained to the two cases are fairly well known. When confronted with the notion that the committees would resolve the problem of lax teachers who abused students, the participants immediately questioned why they would be any different from the ineffectual school management committees or parent teacher associations currently in place. Even so, one finding was that councilors wanted to bypass the educational establishment, which was viewed to be part of the problem, to resolve problems at the community level working with parents and teachers. Direct action by parents as such was not approved, although it was conceded that approaching the educational establishments does not yield results.

Teachers in the discussion groups were naturally defensive and blamed their low salaries and the lack of respect accorded to them by society for their low level of commitment. They also blamed the lack of interest parents had in the education of their children. However, participants were quick to point out that private sector teachers get paid much less and deliver much better education.

Only one citizen, and no councilor, knew about the Muslihat Committee as an alternative dispute resolution mechanism. However, the general feeling was that given the power of the local elites, little would be achieved in terms of the dispensation of justice to the poor via this committee or the public safety committee. In fact, it was thought that there might be less justice than before given that the majority of Nazims are from relatively influential families. One women councilor expressed the view that the danger of opposing a local influential is much too great, and others echoed this view.

It is fairly clear that, particularly in the case of sexual harassment, rape or honour killings, devolution, without far reaching structural and social reforms that address imbalances in power and social norms, would not improve service delivery for the poor. In this regard, land, civil service, police and judicial reforms and, a more enlightened educational curricula are vital. As things stand, much more and much more effective training is needed to clarify the responsibilities and powers of newly elected representatives. Finally, while we found theatre to be an effective research tool, we sensed that it is an even more effective awareness raising and training tool and should be utilised and taken to scale.

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**“Commenting on the Causal Factors Controlling  
Female Decision Making”  
A study of Female Decision Making Regarding  
Paid Employment: Punjab, Pakistan**

**Lubna Shahnaz and Zainab Kizilbash\***

**Introduction**

As societies grapple with incorporating the concepts of gender equality and gender sensitivity, female decision making is quickly losing its designation as a peripheral issue. Indeed the United Nations Division for the Advancement of Women in support of the Commission on the Status of Women has been exploring the question of women and decision making for some time. In 1997 it called upon governments to take into consideration diverse decision making styles and to enhance the images of women in political and public spheres [UN, (2000)].

Decision making in Pakistan, as in much of South Asia has been regarded as a predominantly male prerogative. Although some progress, albeit slowly, has been made in the emancipation and enhancement of women in all areas of society, in comparison with their male counterparts, women are largely neglected in economic, social, legal and political spheres. This can be ascertained by the fact that only 28% of women are present in the labour force in Pakistan in comparison with 42% in Bangladesh and 32% in India and an average of 33% for South Asia. (Haq, 2000). Female literacy in Pakistan still remains only 25%; representation in civil service remains a negligible 5.4% whereas female judges in 1999 were 1.5% of the total (Haq, 2000).

A multitude of factors contributes to the subservient role played by women in Pakistani society. They include conservative and traditional elements in Pakistani society; misinterpretation and lack of knowledge of religious doctrines; as well as social factors, which have perpetuated cycles of poverty, under-nutrition and low education levels amongst the women of Pakistan. Neoclassical economists consider education to be one of the key determinants of women entering economic life. As women attain higher educational levels, women's participation in the labour force increases. However, as our study is analytical on a small scale, women's decision to

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work also depends on her marital status, family system, income and other household head characteristics.

The independence of women in our culture has a profound influence on other important factors such as population growth in the economy, education of female offspring, health and nutrition of her children etc. In fact, because a woman's sphere of influence extends well beyond herself and is in fact focussed on all members of the household, improvement of her status will act as a catalyst for their advancement as a whole.

To understand the role of women in Pakistan it is important to investigate the role that they play not only in legal and public spheres but also through the level of influence they exercise in their own household. One such important factor is the amount of leverage they hold in determining whether they will enter the labour force or not. Factors determining decision making of paid employment are reflective of the power females hold in decision making and present an interesting analysis of various factors which lead women to make decisions themselves.

The low labour force participation rates of women in Pakistan constitute a large human resource yet to be tapped and upto now all attempts in increasing employment in the country have been focussed on demand side factors. Supply side factors especially in the case of women have largely been ignored and one such factor is the ability of women to make their own decisions regarding paid employment themselves. It is only after analysing who actually makes the decisions relating to female participation in the labour force that the government can launch schemes to motivate greater female labour force participation.

This paper is an attempt to identify household related factors that influence female decision making by using data from the Pakistan Integrated Household Survey (1998-99) and by estimating a Probit model. In recent years there has been a shift in the focus from only quantification to econometric analyses of the determinants of female decision-making. Empirically the challenge is to estimate a model which captures female decision making behaviour on their own, with respect to market participation. This paper aims to analyse the nature and degree of participation of women in Pakistan, in their own decision making concerning employment compensated by some form of payment.

Some key empirical findings of this paper are that female decision making is influenced by a variety of factors, the most important of them

being per capita income, households headed by females, education and marital status.

### **Data & Variables**

In its attempt to ascertain the factors which impel females to make their own decisions regarding paid employment, this paper uses micro level data from the Pakistan Integrated Household Survey (1998-9).<sup>1</sup> This study, conducted by the Federal Bureau of Statistics, Government of Pakistan was the first time in Pakistan that information on female decision making was gathered at a national level. The data collected is through a structured questionnaire which provides information about education, employment and female decision making etc.

The total population covered by the PIHS consists of all urban and rural areas of all the four provinces, Azad Jammu & Kashmir, FANA and FATA. A two-stage stratified random sample design was adopted for the Survey. The PIHS is a survey conducted on 16,305 households and 114,996 individuals. To analyse the situational and physiological reasons which, influence decision making towards female employment, females of age 15-49 are interviewed and 29,954 female responses are recorded. We did not include in this paper those women whose responses included “too old to work” and “no interest in working.” The number of respondents from all over Pakistan totaled 19,218 female respondents. Respondents from the Punjab<sup>2</sup> constitute the largest percentage of this total, with the highest percentage of women who make decisions about paid employment themselves.<sup>3</sup> To determine the factors which cause women to have greater control regarding their own employment decisions we focus on Punjab which offers us more data to establish what factors influence female decision-making.

The data used concentrates on women aged 15-49 resident in the Punjab in our empirical analysis. Our dependent variable POAIDEMP1 is

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<sup>1</sup> The purpose of PIHS is to monitor the Social Action Programme of the Government of Pakistan by data collection on various socio-economic aspects of households in Pakistan. The PIHS is characterised by integrated, pre-coded questionnaires, extensive training and supervision of field staff and a computer based data management system designed to improve data quality and reduce the time lag between the data collection and publication of the ultimate results.

<sup>2</sup> Out of the 19,218 households, 7333 are from Punjab, 4958 from Sindh, 3817 from NWFP and 3110 from Balochistan.

<sup>3</sup> In our sample 7.9% of the 19218 respondents who replied in the affirmative to whether they made decisions about paid employment themselves were in Punjab, 2.2% in Sindh, 1.0% in NWFP and 0.8% in Balochistan.

defined clearly in Table 1 as being 1 if the respondent replies affirmatively to the PIHS question with regard to females drawing their own conclusions about their paid employment.<sup>4</sup>

It may be pertinent to classify our explanatory variables into groups. First we observe the respondent's age followed by her marital status which is of great significance to her decision-making ability. In Pakistani society, marriage plays an imperative role in defining the lives of its inhabitants especially women. The stage a woman is at in her marital cycle is of significance to our dependent variable. We have chosen the variables married, widowed or divorced to establish which status gives women more independence in making decisions themselves. Third, we consider the education level of the respondent which can be classified as primary, secondary, college, professional and post graduate. Education is a great factor in determining the sociological make-up of women and it is expected that the higher the level of education the greater the probability that women decide about paid employment themselves.

It is also useful to determine the sociological contours of the respondent's household to establish the environment under which she does or does not make decisions regarding her own employment. These have been divided into household characteristics as well as characteristics of the head of the household. Features of the household such as per capita income, whether it is a joint family or whether it is located in an urban setting play an important role in the lives of the women who inhabit them. The head of the household is expected to also exert influence on all matters of the household and should have an important effect in determining the freedom available to the females of the house in decision making. To determine his/her influence we consider the age of the household head, his/her literacy as well as whether the head is a female herself.

Summary statistics presented in Table 2 offer some interesting patterns of household characteristics. The mean age of respondents is nearly 28 years within a sample size of between 15-49 compared with 26.59 years where females did not make their own decisions. Out of these 56.21% were married with 5.25% widowed and 1.5% divorced from our sample of POAIDEMP1=1.<sup>5</sup> Compared with our sample of 5811 females who said that they did not make their own decisions concerning paid employment 58.59%

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<sup>4</sup> Section 4-F, Part E Question number 2, PIHS 1998-1999 is about women in decision making for paid employment

<sup>5</sup>Comparing with national averages in Punjab according to the Labour Force Survey 1997-1998, 55.63% of females are married, 5.37% widowed and 0.38% divorced.

of them were married; 0.84% were widowed and 0.53% were divorced. Married women are dependent to a large extent on their husband's opinions regarding their paid employment and therefore we find women who do make their own decisions with respect to employment as less likely to be married. However there is only a difference of 2% so we cannot draw concrete conclusions about the negative co-relation between POAIDEMP1 and marriage without more evidence. Since widowed and divorced women have more say in matters of their own employment we find less females who are widowed and divorced in our sample respondents for POAIDEMP0.

In our sample of females who make their own decisions regarding employment 9.9% of the respondents have completed primary school only, whereas 18.2% had completed secondary level education, 10.32% had received a degree, 1.7% had received post-graduate education and only 0.7% had some professional qualifications. This suggests that our sample was representative of an educated populace since literacy averages in Pakistan are generally lower.<sup>6</sup> When compared to level of education of females who did not make employment decisions themselves, it is noted that in that group levels of education are lower for secondary and higher levels with a larger number of respondents having completed only primary education (13.87%).

In our sample 49% of respondents were located in urban areas for POAIDEMP1 and 42% females who did not make their decision about paid employment independently. This also helps in understanding the greater levels of literacy displayed in our sample since urban areas have higher literacy rates than their rural counterparts.

Of our sample, female headed households made up 9.27% compared with only 3% of our sample of 5811 households where females do not make their own decisions. This provides evidence in establishing the case that female-headed households facilitate females making their own decisions.

The household head's age indicates the lifecycle stage at which he/she is and is expected to influence the household's decisions on female employment. The mean age in both cases where the women do or do not make their own decisions is the same nearly, 47 years. The household head's literacy is also a determining factor and in our sample the literacy rate was 54.64% higher than the national average of 39.68% (GOPb, 1998). The

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<sup>6</sup> Distribution of Population of 10 years and Above By Level of Education: 5.56% (Primary), 2.94% (Middle), 2.76% (Matric), 1.09% (Intermediate), 0.75% (Degree & Post Graduate) 1996-97. (GOPb, 1998)

literacy in the case of POAIDEMP=0 is lower at 51.28% but still higher than Pakistan's national average.

In our sample of female respondents who claimed to make their own decisions regarding employment only 31.82% of POAIDEMP1 and 37.43% of POAIDEMP0 belonged to a joint family system which shows that our sample consists of more liberal, less traditional and an educated section of the society.

### **Estimates of the Probit model**

We estimate a Probit model by using data from the Pakistan Integrated Household Survey (1998-99). Three sets of numbers are reported in Table 3, which are probability derivatives (marginal effects), estimated parameters and their t-statistic (in parenthesis). The probability derivative indicates the change in probability on account of a one-unit change in a given independent variable which in our case is POAIDEMP1 after holding all the remaining variables as constant as their mean.

We identified marital status, education level, family type and the household's per capita income as the main causal factors behind women making their own decisions about paid employment.

To capture the effect of age composition of females on their decision making towards paid employment, the age and age square of females is taken under consideration. Age has a positive effect on POAIDEMPL1 which is also significant. The mean age of females who do not make their own decisions is also relatively lower than the ones who do. This result is not surprising since it is generally believed that older people can make better decisions about themselves. Moreover with age a female's role in the household also evolves and they are included in individual decision making panels.

This is also apparent by looking at the marital status of the female respondents. Widowed and divorced women have a greater likelihood of making their own decisions with the probabilities being 25.49% and 14.12% respectively. Widowhood especially is highly significant reflecting the process by which they are instated as the head of the household after their spouse's demise. Married women have a negative relation with female decision making which is also significant. This contradicts some theories which state [Hamid (1991)] that married women are considered independent and their status is equal to their male partners, perhaps in comparison with their roles as daughters and sisters. Our sample establishes a negative co-relation since it is understandable that husbands will have a say in their spouse's decision

to enter the work force, especially if it conflicts with their roles as a wife or a mother. It is generally accepted that in Pakistani society the husband's approval or disapproval is an important factor in whether a wife will perform a certain activity or not [Shah, (1986)].

Education is an important factor in determining the amount of decision-making powers with the women concerned. The higher the education the greater the probability that the female makes her own decisions. Coefficients of secondary, college, professional and post graduate study are all positive and significant with the highest significance being related with postgraduate study. Females having undertaken post graduate education have a probability of 25.29% of making uninfluenced decisions about their employment status. This result bodes well with claims that with university education the likelihood of a woman being in the labour force increases by nearly three times as much as it increases the likelihood of a man being in the labour force [Kozel and Alderman (1990)]. With education females invest greatly in their own capabilities and gain confidence in exercising their own judgement. Education yields both higher female labour force participation [Kozel and Alderman (1990)] and higher female independent decision making with regard to employment [Aly and Al-Quisi (1996)]. Primary schooling has a slightly negative effect on female decision making which may be attributed to the females having a lower level of education as well as them being younger.

Socio-economic status of the household is also an important factor in determining women's status among the households. It is generally believed that women's decision to enter the work force are caused by a low level of income available to them [Hamid, (1991)] and their entry into the labour force is necessitated by their lack of income. However, our study is focussed on a situation where females make their own decisions regarding employment and not factors which result in greater female employment in the workforce. Our coefficient PC INCOME is positive and highly significant. It may be expected that with greater household income females will have a greater chance to influence their work status as greater income might also be attributed to other positive factors such as higher level of literacy, an urban setting etc.

Literacy of the household head in our model should have been positive but in our model it is negative yet insignificant. If the household head is literate there is a probability of 0.26% that the female in question will not make her own decision. Although greater literacy should translate into more open-mindedness, perhaps with a better-educated spouse, women

may feel that he knows better regarding their future and would leave important decisions to him.

Likewise our co-efficient of female residence in urban areas is negative but insignificant. Again our model does not produce expected results but perhaps the outcome can be explained by greater male migration (within Pakistan and abroad) which has resulted in rural women having a greater say in decision making as well as heading the household itself. Also, male migration abroad has generated greater foreign exchange which, when remitted to rural homes in Pakistan means greater income for the household and hence greater decision making capabilities.

The co-efficient of female-headed households FHEAD is positive and also highly significant which is to be expected. The female could be the head in case of demise of the husband, migration, unemployment or incapability rendered because of illnesses or disability. The reason for high POAIDEMP1 is that in female-headed families, female heads are more concerned about the well being of both male and female members of the family and give them equal rights.

The set-up of the family in which women live has a significant relationship with POAIDEMP1. The co-efficient of JOINTFAM is negative and significant. Since in nuclear families there are no adverse pressures of relatives, women have greater liberty to decide about their employment. The presence of other members in a joint family setting is expected to have a positive effect on female employment because of the presence of other members in the family to help with child care and domestic tasks [Hamid, (1991)]. However, an extended family is likely to exert its influence on the woman's decision to enter the labour force and therefore is negatively related to our variable POAIDEMP1.

The life-cycle stage at which the head of the household finds himself/herself is expected to be an influencing factor on female decision making. In our model the HAGE1 is negative but insignificant. The negative co-relation arises because the greater the age of the head the more influence he/she will exercise although it may be expected that after a certain age, the ability of the head to make coherent decisions will be limited. At that point other members of the family may have more say in the decisions taken within the household.



### **Summary of Major Findings:**

This study was an attempt to fill the void created by lack of research on female decision making in Pakistan. Our examination of Pakistan's largest, most populated province with the greatest number of self-deciding women is to determine the causal factors of this phenomenon. We find that the greatest determinants revolve around a woman's marital status especially whether she is widowed or not. We have also determined that the level of education she has completed exerts a great influence on her decision making abilities especially if she has received some form of post-graduate study.

The income level of the household which is itself caused by factors which catalyse female decision making such as literacy levels, urban settings etc, is an important influencing factor on our dependent variable. The gender that heads the household is another element in determining female decision making as are whether the family is nuclear or joint (negative effect) and the age of the female (positive effect).

Needless to say that Pakistani women's decision to enter the labour force remains a largely undiscovered field and a great deal of more research needs to be done at a national level to determine empirically and analytically the causes and consequences of a woman's decision to enter the labour force.

**Table-1: Definition of Variables**

<b>Variables</b>	<b>Description</b>
<b>Dependent Variables</b>	
<i>POAIDEMPL1</i>	= 1 if the female in the household makes decisions about undertaking paid employment herself
<i>POAIDEMPL1</i>	= 0 if the female in the household does not make decisions about undertaking paid employment herself.
<b>Explanatory Variables</b>	
<b>Female Characteristics</b>	
<i>AGE</i>	Female age 15-49 years in completed years
<i>AGE<sup>2</sup></i>	Female age 15-49 years in completed years squared
<i>MARRIED</i>	= 1 if the female is currently married and 0 otherwise
<i>WIDOW</i>	= 1 if the female is a widow and 0 otherwise
<i>DIVORCED</i>	= 1 if the female is divorced and 0 otherwise
<i>PRIMARY</i>	= 1 if the female has received primary education and not beyond, 0 otherwise
<i>SECONDARY</i>	= 1 if the female has received metric education and not beyond, 0 otherwise
<i>COLLEGE</i>	= 1 if the female has received degree education, 0 otherwise
<i>PROFESSIONAL</i>	= 1 if the female has professional degree in engineering, medicine or agriculture, etc, 0 otherwise
<i>POSTGRADUATE</i>	= 1 if the female has a post-graduate degree in any subject, 0 otherwise.
<b>Household Head Characteristics</b>	
<i>HEADAGE</i>	Age of the head of household in completed years.
<i>HEADAGE<sup>2</sup></i>	Age of the head of household in completed years squared.
<i>HEADLIT</i>	= 1 if the head of the household is literate <sup>7</sup> 0 otherwise
<b>Household Characteristics</b>	
<i>FHEAD</i>	= 1 if head of the household is female and 0 otherwise.
<i>FTYPE</i>	= 1 if female lives in a joint family <sup>8</sup> and 0 otherwise.
<b>Economic Status of the Household</b>	
<i>PERINCOME</i>	Per capita household income in rupees
<b>Residence of Household</b>	
<i>REGION</i>	= 1 household is geographically located in what constitutes an urban area and 0 otherwise

<sup>7</sup> Literacy is defined as individuals who can read, write and solve simple sums.

<sup>8</sup> Nuclear Family is one consisting of a head, spouse and unmarried sons or daughters.

**Table-2: Summary Statistics of Selected Sample for Pakistan (Sample Means and Standard Deviations) (N = 7333)**

<b>Variables</b>	<b>POAIDEM1=1</b>	<b>POAIDEM=0</b>
<b>Females Characteristics</b>		
<i>AGE</i>	28.402 (9.617)	26.599 (9.407)
<i>AGE<sup>2</sup></i>	899.121 (585.427)	796.010 (561.522)
<i>MARRIED</i>	0.562 (0.496)	0.585 (0.492)
<i>WIDOW</i>	0.052 (0.223)	0.008 (0.091)
<i>DIVORCED</i>	0.015 (0.122)	0.005 (0.072)
<i>PRIMARY</i>	0.099 (0.300)	0.138 (0.345)
<i>SECONDARY</i>	0.182 (0.386)	0.146 (0.353)
<i>COLLAGE</i>	0.103 (0.304)	0.049 (0.216)
<i>PROFESSIONAL</i>	0.007 (0.084)	0.001 (0.039)
<i>POSTGRAD</i>	0.017 (0.132)	0.002 (0.052)
<b>Husband's Characteristics</b>		
<i>HEADAGE</i>	47.424 (13.723)	47.896 (13.778)
<i>HEADAGE<sup>2</sup></i>	2437.307 (1372.888)	2483.913 (1397.586)
<i>HEADLIT</i>	0.546 (0.498)	0.512 (0.499)
<b>Household Characteristics</b>		
<i>FHEAD</i>	0.092 (0.290)	0.038 (0.191)
<i>JOINTFAMILY</i>	0.318 (0.465)	0.374 (0.483)
<b>Economic Status of the Household</b>		
<i>PERINCOME</i>	9205.867 (15803.388)	5772.084 (7654.000)
<b>Residence of Household</b>		
<i>URBAN</i>	0.487 (0.500)	0.423 (0.494)
Sample Size	20.74% 1521	79.44% 5811

*Notes:* Numbers in parentheses are standard deviations.

**Table-3: Probit Estimates for Pakistan (N= 7333)**

Variables		
<i>CONSTANT</i>	<b>-0.360</b> -1.337 (-4.738)**	<b>0.360</b>
<b>Females Characteristics</b>		
<i>AGE</i>	<b>0.010</b> 0.038 (2.578)*	<b>-0.010</b>
<i>AGE<sup>2</sup></i>	<b>-0.0001</b> -0.004 (-1.894)*	<b>0.0001</b>
<i>MARRIED</i>	<b>-0.034</b> -0.128 (-2.273)**	<b>0.034</b>
<i>WIDOW</i>	<b>0.254</b> 0.946 (7.182)**	<b>-0.254</b>
<i>DIVORCED</i>	<b>0.141</b> 0.524 (2.857)**	<b>-0.141</b>
<i>PRIMARY</i>	<b>-0.024</b> -0.081 (-1.668)*	<b>0.024</b>
<i>SECONDARY</i>	<b>0.053</b> 0.199 (4.038)**	<b>-0.053</b>
<i>COLLEGE</i>	<b>0.101</b> 0.375 (5.177)**	<b>-0.101</b>
<i>PROFESSIONAL</i>	<b>0.159</b> 0.590 (1.994)**	<b>-0.159</b>
<i>POSTGRAD</i>	<b>0.252</b> 0.939 (4.598)**	<b>-0.252</b>
<b>Husbands Characteristics</b>		
<i>HEADAGE</i>	<b>-0.002</b> -0.098 (-1.333)	<b>0.002</b>

<i>HEADAGE</i> <sup>2</sup>	<b>0.000</b>	<b>-0.000</b>
	0.001	
	(1.401)	
<i>HEADLIT</i>	<b>-0.009</b>	<b>0.009</b>
	-0.034	
	(-0.911)	
<b>Household Characteristics</b>		
<i>FHEAD</i>	<b>0.144</b>	<b>-0.144</b>
	0.534	
	(7.371)**	
<i>JOINTFAMILY</i>	<b>-0.003</b>	<b>0.036</b>
	-0.134	
	(-3.403)**	
<b>Economic Status of the Household</b>		
<i>PERINCOME</i>	<b>0.0000</b>	<b>-0.000</b>
	0.0001	
	(7.894)**	
<b>Residence of Household</b>		
<i>URBAN</i>	<b>-0.015</b>	<b>0.015</b>
	-0.055	
	(-1.466)	
Log Likelihood		-3533.96

*Note:* Numbers in bold indicate probability derivatives.

\*\* Indicates significant at the 5 per cent level and \* indicates significant at the 10 per cent level.

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## **Income Inequality among Various Occupations/Professions in Pakistan-Estimates Based on Household Income Per Capita**

**Mehboob Ahmad\***

### **Introduction**

There is a long list of studies related to distribution of income in Pakistan. Most of these have been confined to the calculation of various measures of inequalities. These studies include Khadija Haq (1964), Bergan (1967) Mehmood (1984), Ercelawn (1988), Ahmad and Ludlow (1969) etc. Apart from these there are other studies including Jeetun(1978), Chaudhry (1982), Cheema and Malik (1984) Kruijk and Leeuwen (1985), Kruijk (1986), Kemal (1994), Jaffery and Khattak (1995), Chaudhary (1995) etc. Jeetun (1978) in his paper concentrated on consequences of economic growth on the level of inequality whereas Chaudhary (1982) tried to find out the impact of the Green Revolution on income inequalities. Cheema and Malik (1984) tried to find out the effects of different income policies on the consumption and level of employment in Pakistan. Kemal (1994) examined the impact of the adjustment period of Pakistan since the late 1970s on efficiency and equity. Jaffrey and Khattak, while utilising HIES 1990/91, measured and analysed inequality and poverty in Pakistan together with their historical trends. They also analysed the phenomenon of income inequality and poverty and their relation to the distribution of assets and employment. Chaudhary (1995) computed and analysed income inequality in Pakistan as well as in its provinces broken down to rural urban level. He not only studied the extent of inequality in Pakistan but also its change over time measured on the basis of per capita income distribution involving households.

In spite of the existence of such a long list of studies related to distribution of income in Pakistan, very little attempt has been made to study the income inequalities between and within various occupations/professions in Pakistan. Exceptions to this are studies by Kruijk and Leeuwen (1985) and Kruijk (1986). Kruijk and Leeuwen (1985) examined the incidence of poverty and inequality in Pakistan in 1975 and also decomposed the measure of inequality into various components. This was done to identify the location, the magnitude and the changes of various inequalities etc. They decomposed Theil's measure of inequality (T) into

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two parts: The explained part (or the between component) and the unexplained part (or the within component). Accordingly they decomposed overall T into inequalities within and between urban and rural areas. In this way T was decomposed into inequality which is attributable to inequality between urban and rural areas and (i) inequality within urban areas and (ii) inequality within rural areas. Then urban areas and rural areas inequalities are further decomposed into earners and number of earners per household. In the third step, inequality among earners is decomposed into inequality between occupational groups and inequality within occupational groups. This exercise is done for the two time periods that is for 1969/70 and 1979.

In this paper we have adapted a different approach to that of Kruijk and Leeuwen (1985) and Kruijk (1986). Instead of decomposing Theil into various components and then finding inequality between and within occupations, we have calculated the Gini coefficient for each occupational group. Once we were able to calculate Gini coefficients for each occupation/profession there was no problem in comparing the level of inequality among various professions or occupations.

### **Data Base**

The main feature of this study is that it is based on individual household data of the Household Integrated Economic Survey (HIES) 1992-93 being conducted by the Federal Bureau of Statistics. At the time of this study the Household Integrated Economic Survey 1992-93 was the latest data available on tapes. The universe of this survey consists of all urban and rural areas of the four provinces of Pakistan defined as such by the 1981 Population Census excluding FATA, military restricted areas, districts of Kohistan, Chitral, Malakand (Protected Area) and PATA of NWFP. The population of excluded areas constitutes about 4 per cent of the total population.

### **Sample Covered**

Due to various reasons, of 14,976 households, 382 households could not be numerated for various reasons such as non-contact, locked house etc.. Thus the results of this survey are based on 14,594 households.

### **Package Used**

The package used to calculate measures of inequality is the Statistical Package for Social Sciences (SPSS).



### Frame of Reference

The utility and soundness of any exercise relating to estimating and analysing income inequalities not only depends on the choice of the package of inequality indices but also on the choice of some appropriate income receiving/consuming unit(s). The most commonly used income receiving/consuming unit (frame of reference) is the household but according to Kuznets (1976) “it makes little sense to talk about inequality in the distribution of income among families or households by income per family or household when underlying units differ so much in size. A large income for a large family may turn out to be small on per person or per consumer equivalent basis, and a small income for a small family may turn out to be large with allowance for the size of the family. It follows that before any analysis can be undertaken size distributions of families or households by income per family or household must be converted to distribution of persons (or consumer equivalents) by size of family or household income per person or per consumer” (Kuznets. 1976/87).

The point is that there is no sense in assigning equal weights to a single person household and a household consisting of say ten or more members. The traditional framework which treats households as equal units regardless of their size and composition grossly distorts the true image of the distribution of income and makes the level of inequality look like what it really is not. Similarly, any inter-temporal comparison of pattern and trend of inequalities may give misleading directions if analysis of income distribution is conducted in terms of per household/family income. In reality “trends observed in the conventional distribution may well be associated with trends in size differences among families, not in income per person or per consumer” (Kuznets, 1976).

In view of the above arguments, an attempt is made to calculate the Gini coefficient as a measure of inequality using individuals as the frame of reference. Gini coefficient can be computed using the following formula:

$$G = 1 - \sum_{i=1}^n S_{pi}(Y_i + Y_{i-1})$$

Where  $S_{pi}$  is the population share of the  $i$ th income group and  $Y_i$  is the cumulated income share of the  $i$ th income group.

As mentioned above, in our study, instead of households, persons have been used as the frame of reference. This has been done by replacing

Cases (households) column with Sum (population numbers) column in the SPSS programme.

Ours is not the first attempt in this direction. A number of other writers have calculated various measures of inequalities for countries of their choice using both households and individuals as the frame of reference. These include Kuznets (1963,1976), Ranadive (1965), Ojha (1971), Kumar (1974), Henry (1975), Hsia and Chou (1978), Visaria (1980), Datta and Meerman (1980), Choudhry (1982,1984,1995) and many others.

### **Level of Inequality in Various Occupations/Professions**

Before discussing levels of inequality among various professions/occupations in Pakistan, it is probably more appropriate to define various occupations or professions in the first place. For this study we have defined occupations in accordance with the Pakistan Standard Classification of Occupations (1994) as published by the Bureau of Statistics. The Pakistan Standard Classification of Occupations 1994 divides various occupations or professions into Major, Sub-Major and Minor groups. Following Pakistan Standard Classification we have divided our occupations into six Majors compared with nine Majors of Pakistan Standard Classification. In our case we have categorised together some occupations for our convenience and also because it made economic sense. In the slightly modified classification (in our table), the last three Majors could be interpreted as White Collar Workers, Skilled Workers, and Unskilled Workers. That is why we have classified our occupations into the following six Majors, as may be seen from Tables-1 and 2 and also from the table below.

- (i) Legislators, Senior Officials and Managers include
  - Legislators and Senior Officials, Corporate Managers and General Managers
- (ii) Professionals include
  - Physical, Mathematical and
  - Physical, Mathematical and Engineering Science Professionals
  - Life Science and Health Professionals
  - Teaching Professionals
  - Other Professionals

- (iii) Technicians and Associate Professionals include
  - Physical and Engineering Science Professionals
  - Life Science and Health Associate Professionals
  - Teaching Associate Professionals
  - Other Associate Professionals
- (iv) Clerks, Service Workers and Shop and Market Sales Workers include
  - Office Clerks
  - Customers Services Clerk
  - Personal and Protective Services Workers
  - Models, Sales Persons and Demonstrators
- (v) Skilled Agricultural, Fishing, Craft and Related Trade Workers, Plant and Machine Operators and Assemblers include
  - Market-Oriented Skilled Agricultural and Fishing Workers
  - Subsistence Agricultural and Fishing Workers
  - Extraction and Building Trade Workers
  - Precision, Handicrafts, Painting and Related Trades Workers
  - Other Craft and Related Trades Workers.
  - Stationary-Plant Related Operators
  - Machine Operators and Assemblers
  - Drivers and Mobile Plant Operators
- (vi) Unskilled Labour, Elementary Occupations include
  - Sales and Services Elementary Occupations
  - Agricultural, Fishing and Related Labour.
  - Labour in Mixing, Construction, Manufacturing and Transport.

While looking at the list of Gini coefficients against various occupations for all Pakistan in sub-table 1(a) {in Table 1}, we can see that the highest level of inequality (Gini coefficient) is recorded by skilled workers i.e. by skilled agricultural, fisheries, craft and related trade workers plus plant and machine operators and assemblers. The Gini coefficient for these skilled workers is 0.299. This figure is higher than 0.291 calculated for all Pakistan, by the author<sup>1</sup>, elsewhere. One of the probable reasons for this high figure is that in the category of skilled workers a diverse bunch of workers are included varying from market oriented gardeners to subsistence agricultural workers, mines to precision metal workers, plant operators to ship deck workers. Even though they are all skilled workers, their incomes or earnings are quite diverse. For example, heavy machine operators earn much more than skilled but subsistence agriculture or fishery workers. Similarly, skilled extraction workers earn much more than just drivers. That is why when such diverse workers are brought together under the umbrella of skilled workers this high level of the Gini coefficient (therefore, inequality) is no surprise.

The second highest Gini coefficient is shown by the first occupation in our table, that is the legislators, senior officials and managers (Gini=0.273). In this group again the high figure of the Gini coefficient probably reflects the different kinds of people grouped together in one occupation or professional group. In this category we have all sorts of people including legislators (mostly landlords and industrialists), senior government officials, directors and chief executives of government/semi government and private organisations. All the people who fall into this category/group are high earning people. Most of the legislators have a landed or industrial back ground. Those who are not very rich become rich once they enter parliament. But still there are some parliamentarians who are not rich but also not corrupt. That is why some diversity in income level is observed through a moderately high value of the Gini coefficient. There is however, diversity of incomes among different senior officials. Some of the senior officials with specialised skill get much higher salaries than the ordinary senior government officials. Corruption is one way by which many senior officials try to equalise their incomes with their highly skilled counterparts. But still there is no dearth of honest senior officials whose incomes are much lower than their skilled and corrupt counterparts. That is why we see

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<sup>1</sup> Ahmad, Mehboob (2001) *Distribution of Income in Muslim Countries vis-à-vis non-Muslim Countries* (Unpublished Thesis, Bahauddin Zakria University, Multan).

See also in

Ahmad, Mehboob (2001) "Estimation of Distribution of Income in Pakistan Using ICRO Data" Paper Presented in 16<sup>th</sup> AGM of the Pakistan Society of Development Economists Scheduled Held During January 22-24, 2001 PIDE, Islamabad.

a relatively high Gini coefficient for this apparently homogenous (income wise) group.

The professionals group that includes physical, mathematical and physical, mathematical and engineering science professionals, life science and health professionals, teaching professionals etc, show the lowest level of inequality in Pakistan (Gini=0.136). Even though this group includes various professionals, they are very uniform and homogenous in terms of levels of incomes. The homogeneity in terms of incomes among such diverse professionals is due to the fact that almost all the professionals included here are government employees and government pays in terms of a uniform grading system to all its professionals. There are some professionals (like doctors) whose incomes (apart from salary) are much higher than common professionals (like teachers). But such professionals are very few compared with the total number of professionals in Pakistan. That is why, in the author's view, we find a high degree of income uniformity in this group.

The second lowest inequality is seen among unskilled workers in Pakistan (Gini=0.180). High level of income equality among unskilled workers shows that their earnings level is the same no matter where they are employed and also that they are all poor.

The sub-table-1(b) shows the distribution of income among various professions/occupations in the province of Punjab. The pattern of distribution in Punjab is more or less the same as in all Pakistan with some minor exceptions. In the province of Punjab too the highest level of inequality is seen among skilled workers (Gini=0.307) followed by legislators, senior officials/managers (Gini=0.268) and clerks (Gini=0.250). In Punjab the fourth place is taken by unskilled workers (Gini=0.199) compared to associate professionals/technicians (Gini=0.217) in all Pakistan. The lowest level of inequality in Punjab is shown by professionals (Gini=0.108) and associate professionals/technicians (Gini=0.191). In the case of all Pakistan the second lowest position is taken by unskilled workers (Gini=0.180).

The sub-table 1(c) shows distribution of income among various professions in the province of Sindh. The pattern of Gini coefficients in Sindh is exactly the same as we observed in the case of the Punjab, even though almost all the Gini coefficients are lower than the Punjab. Here too the highest level of inequality is seen among skilled workers (Gini= .304) followed by legislators, senior officials/managers (Gini=.226) and clerks (Gini=.247). The lowest level of inequality in Sindh is seen among professionals (Gini=.105) followed by associate professionals/technicians (Gini=.188) and unskilled workers (Gini=.196). The difference between the

patterns of inequalities between Sindh and Pakistan is the same as we observed in the case of the Punjab and Pakistan.

The sub-table-1(d) shows distribution of income among various professions in the province of N.W.F.P. The pattern of Gini coefficients in N.W.F.P. is exactly the same as we observed in the case of the Punjab, even though all the Gini coefficients are higher than the Punjab. Here too the highest level of inequality is seen among skilled workers (Gini= .314) followed by legislators, senior officials/managers (Gini=.277) and clerks (Gini=.258).The lowest level of inequality, in N.W.F.P., is seen among professionals (Gini=.116) followed by associate professionals/technicians (Gini=.199) and unskilled workers (Gini=.207). The difference between the patterns of inequalities between N.W.F.P. and Pakistan is the same as we observed in the case of the Punjab/Sindh and Pakistan.

The sub-table-1(e) shows distribution of income among various professions in the province of Balochistan. The pattern of Gini coefficients in Balochistan is exactly the same as we observed in the case of other provinces but the values of its Gini coefficients are much lower than the other four provinces. Here too the highest level of inequality is seen among skilled workers (Gini= .295) followed by legislators, senior officials/managers (Gini=.257) and clerks (Gini=.240).The lowest level of inequality, is seen among professionals (Gini=.096) followed by associate professionals/technicians (Gini=.179) and unskilled workers (Gini=.188). The difference between the patterns of inequalities between Balochistan and Pakistan is the same as we observed in the case of Punjab and other provinces of Pakistan. Table 1 shows a certain degree of inequality among various professions in all Pakistan as well as in its provinces. But the inequality observed is not statistically significant as may be seen from low  $F^*$  values given at the end of Table 1.

We can observe relative inequality among various occupations by rearranging the data in Table 1 {sub-tables 1(a), 1 (b), 1 (c), 1 (d), 1 (e)} into Table 1(1) {sub-tables 1(aa), 1(bb) 1 (cc), 1 (dd) and 1 (ee)}. In Table 1(1) {sub-tables 1 (aa) to 1 (ee)} we have rearranged Gini coefficients from highest value to the lowest value. These relative inequalities are presented in the form of difference of Gini coefficients between the two occupations/ professions. This new data is presented in the fourth column of sub-table 1(aa) and third columns of sub-tables 1(bb) to 1(ee). For example, in sub-table 1(aa), .026 is the difference between Gini coefficients of skilled workers and clerks. Single entries are shown at the end of each sub-table {last row of table 1(1)}. These single entry figures show the level of relative inequality between the most equal profession/occupation and the least equal profession/occupation. For example, .163 is the difference between professionals and skilled workers in

sub-table 1(aa). The difference figures in column 3{fourth in 1(aa)} show that all professions/occupations show almost the same relative inequality in all the provinces of Pakistan including all Pakistan. Similarly, the same level of relative inequality is observed between highly equal profession/occupation (professionals) and the most unequal profession/occupation (skilled workers) in the four provinces of Pakistan, excluding all Pakistan. This phenomenon is observed despite the fact that different levels of inequality are seen among the provinces in any given profession/occupation. This uniform relative inequality has been established when we arranged the Gini coefficients from higher to lower level inequality professions/occupations.

We can gain even more insight when we further rearrange our data in terms of various professions/occupations. This is what we have done in Tables 2 (a) to 2 (f). In Table 2 (a) Gini coefficients for legislators/senior officials/managers is presented. The table shows that in terms of income inequality, the group of legislators, senior officials and senior managers is highly uniform and homogenous in all the four provinces of Pakistan. The Gini coefficient, only varying from 0.257 to 0.277, is almost the same for all Pakistan as well as for the four provinces of Pakistan. This table also shows uniformity and homogeneity of the political, economic and administrative ruling classes in our country. In other words this is an indicator of the fact that the ruling class in Pakistan has the same socio-economic and family background. Nepotism is so strong that if one brother is a high government official (civil/military) then the other could be a legislator and yet another brother could be chairman of some big public or private business enterprise (see Amjad: 1977). This phenomenon is common in all developing countries including Pakistan. A slightly higher Gini coefficient is recorded by N.W.F.P. legislators/senior officials/managers compared with other provinces especially Balochistan. This could be safely attributed to chance. If however, the difference is real then in the N.W.F.P., there are some legislators/senior officials/managers who are making more money than their own colleagues in their own province. Lower value of Gini coefficient in Balochistan is an indicator of dominance of certain minority, uniform and homogenous class in all walks of life including economic, political, social etc.

Professional class in the four provinces of Pakistan including all Pakistan has shown a very low level of inequality among its ranks. Punjab (Gini=.108) and Sindh (Gini=.105) are very close to each other. In this group the highest level of inequality is observed among the professionals of all Pakistan and N.W.F.P., with Gini coefficients of .136 and .116 respectively whereas the lowest level of inequality is shown among Balochistan professionals with Gini coefficient of only .096. In terms of income inequality, the pattern of legislators is repeated among the

professionals reflecting the fact that there is a very close relation between these classes in the sense that those people who are in the higher income bracket like legislators/senior officials, are closely related to professionals. This relationship could be in the form of kinship and /or economic/political/social association (see Amjad: 1977).

Like professionals, technicians/associate professionals also show a very low level of inequality as may be seen from the low level of Gini coefficient in Table-2(c) of associate professionals. Within this group the highest level of inequality is observed in all Pakistan (Gini=.217) and N.W.F.P. (Gini=.179) followed by the province of Punjab (Gini=.191). Whereas the lowest level of inequality is shown in Balochistan (Gini=.179) followed by Sindh (Gini=.188).

Income inequality among clerks [Table 2 (d)] is much higher than the earlier two groups. Within clerks the highest level of inequality is recorded by all Pakistan (Gini= .265) and N.W.F.P. (Gini = .258) followed by the province of Punjab (Gini=.250). In line with the previous three occupations, Balochistan clerks also show the lowest level of inequality (Gini=.240) among its ranks. This indicates more or less equal opportunity to make money for clerks in this province.

Table-2 (e) shows the level of inequality among skilled workers in various provinces of Pakistan including all Pakistan. The table shows that the highest level of inequality among skilled workers is in the N.W.F.P. (Gini=.314) followed by the Punjab (Gini=.307). The lowest level of inequality, as before, is recorded by Balochistan workers (Gini=.295) followed by Sindh (Gini=.304) and all Pakistan (Gini=.299). The pattern of inequality among the unskilled workers is the same as we observed in the cases of other professions /occupations. Here again the highest level of inequality is observed among N.W.F.P. unskilled workers (Gini=.207) followed by Punjab (Gini=.199) and highest level of equality is seen among Balochistan unskilled workers (Gini=.188) followed Sindh unskilled workers (Gini=.196). Table 2 shows the uniformity of various professions across the four provinces of Pakistan. This is reflected in the low value of  $F^*$  written at the end of Table 2. The last row of the table shows that the moderate difference observed in the distribution of income across the provinces is not statistically significant.

What we can conclude from this section is that despite having substantial differences in income inequalities among various professions/occupations, the pattern of income inequality is broadly similar among the various provinces of Pakistan.



**Table-1: Measures of Gini Coefficients (Occupations/Professions) based on Distribution of Persons by Households Income, HIES 1992/93.**

	1(a)		1(b)		1(c)		1(d)		1(e)	
	Pakistan		Punjab		Sindh		N.W.F.P.		Balochistan	
	Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession	Gini
I	Legislators, Senior Officials & Managers	0.273	Legislators, Senior Officials & Managers	0.268	Legislators, Senior Officials & Managers	0.266	Legislators, Senior Officials & Managers	0.277	Legislators, Senior Officials & Managers	0.257
II	Professionals	0.136	Professionals	0.108	Professionals	0.105	Professionals	0.116	Professionals	0.096
III	Associate Professionals/ Technicians	0.217	Associate Professionals/ Technicians	0.191	Associate Professionals/ Technicians	0.188	Associate Professionals/ Technicians	0.199	Associate Professionals/ Technicians	0.179
IV	Clerks etc.	0.265	Clerks etc.	0.250	Clerks etc.	0.247	Clerks etc.	0.258	Clerks etc.	0.240
V	Skilled Workers etc.	0.299	Skilled Workers etc.	0.307	Skilled Workers etc.	0.304	Skilled Workers etc.	0.314	Skilled Workers etc.	0.295
VI	Unskilled Workers etc.	0.180	Unskilled Workers etc.	0.199	Unskilled Workers etc.	0.196	Unskilled Workers etc.	0.207	Unskilled Workers etc.	0.188
F		0.10		0.27		0.26		0.26		0.23

**Table-1(1): Measures of Gini Coefficients(Occupations/Professions)based on Distribution of Persons by Households Income, HIES 1992/93.**

	1(aa)		1(bb)		1(cc)		1(dd)		1(ce)	
	Pakistan		Punjab		Sindh		N.W.F.P.		Balochistan	
Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession	Gini	Occupation/ Profession
1 Skilled Workers etc.	.299	Skilled Workers etc.	.307	Skilled Workers etc.	.304	Skilled Workers etc.	.314	Skilled Workers etc.	.295	Skilled Workers etc.
	.026		.039		.038		.037		.038	
2 Legislators, Senior Officials & Managers	.233	Legislators, Senior Officials & Managers	.268	Legislators, Senior Officials & Managers	.266	Legislators, Senior Officials & Managers	.277	Legislators, Senior Officials & Managers	.257	Legislators, Senior Officials & Managers
	.008		.018		.019		.019		.017	
3 Clerks etc	.265	Clerks etc	.250	Clerks etc	.247	Clerks etc	.258	Clerks etc	.240	Clerks etc
	.048		.051		.051		.051		.052	
4 Associate Professionals/ Technicians	.217	Associate Professionals/ Technicians	.199	Associate Professionals/ Technicians	.196	Associate Professionals/ Technicians	.207	Associate Professionals/ Technicians	.188	Associate Professionals/ Technicians
	.037		.008		.008		.008		.009	
5 Unskilled Workers etc.	.180	Unskilled Workers etc.	.191	Unskilled Workers etc.	.188	Unskilled Workers etc.	.199	Unskilled Workers etc.	.179	Unskilled Workers etc.
	.044		.083		.083		.083		.083	
6 Professionals	.136	Professionals	.108	Professionals	.083	Professionals	.116	Professionals	.096	Professionals
	(0.163)		(0.199)		(0.199)		(0.198)		(0.199)	

Table-2: Measures of Gini Coefficients (Professions/Occupations)based on Distribution of Persons by Households Income, HIES 1992/93

Legislators, Senior Officials & Managers	2(b) Professionals		2(c) Associate Professionals/ Technicians		2(d) Clerks etc.		2(e) Skilled Workers etc.		2(f) Unskilled Workers etc.		
	Area	Gini	Area	Gini	Area	Gini	Area	Gini	Area	Gini	
Pakistan	.273	Pakistan	.136	Pakistan	.217	Pakistan	.265	Pakistan	.299	Pakistan	.180
Punjab	.268	Punjab	.108	Punjab	.191	Punjab	.250	Punjab	.307	Punjab	.199
Sindh	.266	Sindh	.105	Sindh	.188	Sindh	.247	Sindh	.304	Sindh	.196
N.W.F.P.	.277	N.W.F.P.	.116	N.W.F.P.	.199	N.W.F.P.	.258	N.W.F.P.	.314	N.W.F.P.	.207
Baluchistan	.257	Baluchistan	.096	Baluchistan	.179	Baluchistan	.240	Baluchistan	.295	Baluchistan	.188
F*	0.00	F*	.012	F*	.002	F*	.001	F*	.001	F*	.006

## **Conclusions**

Finally the following conclusions are submitted:

1. Within various occupations/professions in Pakistan, the highest level of inequality is observed among skilled workers and lowest level of inequality is seen among professionals.
2. The level of inequality among skilled workers is slightly higher than overall inequality in Pakistan and level of inequality among professionals is much lower than the national inequality.
3. A similar pattern is observed within all the provinces of Pakistan.
4. The relative inequality among occupations/ professions is the same in all the provinces of Pakistan.
5. Within various occupations/professions, the lowest level of inequality is observed in the province of Balochistan and highest level of inequality is seen in the province of N.W.F.P. In other words all occupations/professions in Balochistan exhibit lowest inequality among its ranks and all occupations/professions in the N.W.F.P. show the highest level of inequality among its members.
6. The data is interpreted on the basis of an informed guess but very close to the realities of our country. For example, our data suggests that rulers (legislators etc.) of our country are one class and this fact has been written about in various newspapers.

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## Priced Separation and Supply-Price Specification of Exports: Evidence from Pakistan

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### I. Introduction

Empirical studies of international trade have concentrated on single-equation models to analyse the demand relationship for imports and exports [Houthakker and Magee (1969), Naqvi *et al* (1983), Bnhmani-Oskooee (1984,1986)]. These studies have assumed that the imports and exports price elasticities facing any individual country are infinite or at least large. The assumption of infinite supply price elasticity may be acceptable for the world supply of imports to a single country. Export demand and supply functions have been estimated in a simultaneous equation framework by Khan (1974), Goldstein and Khan (1978), Dunlevy (1980), Arize (1986,1988), Balassa *et al* [1989], Anwar (1985), and Khan and Saqib (1993)] for both developed and underdeveloped countries.

Haynes and Stone (1983) argue that previous studies failed to estimate the supply behaviour of both imports and exports not only because of a simultaneity bias but also because quantity rather than price were specified as the dependent variable. They have, based on the evidence of USA and UK trade data for the period 1947-79, found support for a dynamic supply- price model for both exports and imports and no evidence to support dynamic supply-quantity specification for these countries.

Murray and Ginman (1975) argue that the traditional log-linear model of imports in international trade studies is incorrectly specified because the traditional form of the import demand makes the coefficients equal in magnitude but opposite in sign to import price and domestic price indices. They applied the above-suggested form to the Canadian experience for 1950-64.

Both suggestions [Haynes and Stone (1983), Murray and Ginman (1975)] are worth consideration but need to be verified in the light of the experience of other countries. Though Murray and Ginman (1975) have suggested price separation format for imports, we apply this format to export functions for Pakistan. The purpose of the paper is first, to examine the price separation format in order to see how far the format corresponds to Pakistan's exports. Second, is to examine supply-price specification suggested by Haynes

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and Stone (1983). Studies on the import and export behaviour of Pakistan [Khan (1974). Naqvi *et al* (1983). Sarmad (1985). Anwar (1985), and Khan and Saqib (1993)] have not investigated the above aspects.

The remainder of the paper is structured as follows. Section II specifies the export functions for Pakistan in the light of these views. Section III deals with results and discussions and the final section is devoted to conclusions.

## II. Traditional Export Functions

The demand for exports depends on the world or important trade partners' income and also on the competition of domestic export prices with the world or important trade partners' export prices. Similarly, supply of exports is determined by the domestic price of exports, domestic economic performance proxied by the GDP and domestic price level. It is assumed that  $X_d = X_s$ . Therefore, in log linear form the following are the demand and supply equations for exports. Equations 1 and 2 are the traditional form of the export demand and supply respectively.

$$\text{Ln}X_d = \alpha_0 + \alpha_1 \text{Ln}PU + \alpha_3 \text{Ln}ZW \quad (1)$$

$$\text{Ln}X_s = \beta_0 + \beta_1 \text{Ln}ZZ + \beta_2 \text{Ln}Y_{\text{pak}} \quad (2)$$

Since the equations are specified in logarithm, the coefficients are elasticities. The expected signs of the coefficients are  $\alpha_1 < 0$ ,  $\alpha_3 > 0$ ,  $\beta_1 > 0$ ,  $\beta_2 > 0$ .

### Export Demand Function

The relative price variables (PLJ and ZZ) of the traditional form in the above equations are separated and a dummy (Do) has been added to see the impact of trade liberalisation efforts on export demand (Equations 3 and 4) and export supply (Equations 5 and 6) which Pakistan has been pursuing vigorously since the beginning of the 1990s [see *Pakistan Economic Survey* (PES) 1992 and later years]. The new equations are as follows.

$$\text{Ln}X_d = \delta_0 + \delta_1 \text{Ln}PX_d + \delta_2 \text{Ln}XW + \delta_3 \text{Ln}ZW \quad (3)$$

$$\text{Ln}X_d = \zeta_0 + \zeta_1 \text{Ln}PX_d + \zeta_2 \text{Ln}XW + \zeta_3 \text{Ln}ZW + \zeta_4 \text{Do} \quad (4)$$

The expected signs of the coefficients in Equations 3 and 4 are  $\delta_1 \zeta_1 < 0$ ,  $\delta_2 \zeta_2 > 0$  and  $\delta_3 \zeta_3 > 0$ , and  $\zeta_4$  may be positive or negative.

### Export Supply Functions

$$\text{LnXs} = \theta_0 + \theta_1 \text{LnPXpak} + \theta_2 \text{LnPd} + \theta_3 \text{LnYpak} \quad (5)$$

$$\text{LnXs} = \kappa_0 + \kappa_1 \text{LnPXpak} + \kappa_2 \text{LnPd} + \kappa_3 \text{LnYpak} + \kappa_4 \text{Do} \quad (6)$$

The expected signs of the coefficients for the export supply price and GDP are positive, while for domestic price level it is negative and the dummy has an unknown sign.

### Supply Price Specification

We investigate the Haynes and Stone (1983) argument that dynamic supply-price be used as a dependent variable to study the behaviour of exports. This study explores both static and dynamic versions of the above suggestion. Moreover, liberalisation dummy Do has been added to the static version to see the impact of liberalisation on export behaviour if the supply-price specification is desirable. Thus the equations are as follows:

$$\text{LnPXpak} = \lambda_0 + \lambda_1 \text{LnX} + \lambda_2 \text{LnPd} + \lambda_3 \text{LnYpak} \quad (7)$$

$$\text{LnPXpak} = \mu_0 + \mu_1 \text{LnX} + \mu_2 \text{LnPd} + \mu_3 \text{LnYpak} + \mu_4 \text{Do} \quad (8)$$

$$\text{LnPXpak} = \eta_0 + \eta_1 \text{LnX} + \eta_2 \text{LnPd} + \eta_3 \text{LnYpak} + \eta_4 \text{LnPXpak} (-1) \quad (9)$$

The expected signs of the coefficients are:  $\lambda_1, \mu_1, \eta_1 > 0$ ,  $\lambda_2, \mu_2, \eta_2 > 0$ ,  $\lambda_3, \mu_3, \eta_3 > 0$ ,  $\eta_4 > 0$  and the sign of  $\mu_4$  is uncertain.

Where

Xd = real value of exports demanded, Xs= real value of export supply, X= total exports, PXd == Unit value of exports of Pakistan in US dollars, XW = Unit value of exports of the world in US dollars, PU = PXd/XW, ZW = world real income, PXpak= Unit value of exports of Pakistan in domestic currency rupees [Rs.], Pd = Wholesale Price Index (WPI) of Pakistan, ZZ= PXpak/Pd, Ypak = real GDP of Pakistan.

All the data on GDP, and exports have been taken from *Pakistan Economic Survey* (various issues). Real World Income data have been taken from *World Tables* (various issues). The data regarding export unit value index for both Pakistan and the world in US\$, world Whole Sale Price Index (WPI), and unit value of exports in domestic currency have been taken from *International Financial Statistics (IFS) yearbooks* [various years]. The variables are at 1990= 100 prices.

### III. Results and Discussion

Table 1 shows the results of demand for exports (Equations 1, 3 and 4) in OLS and TSLS. The instruments used in TSLS include: constant, lagged [GDP, exports, agriculture, industry, world income, total, primary, manufactured and semi-manufactured exports, world and Pakistan export prices]. Consumer Price Index, Wholesale prices of the world and Pakistan, growth of world income, dummy, GDP deflator, and imports.

Where necessary first order autocorrelation were corrected adding AR(1) at the end of the equation specification for both OLS and TSLS. Autocorrelation has no universal cure.

Different methods suggested in econometrics literature have their own limitations. Several considerations in obtaining consistent estimates in the case of autocorrelation in TSLS are discussed in Fair (1970). Fair has shown that lagged dependent and independent variables must be in the instruments list to obtain consistent estimates. The signs of the relative price variable and the world income (Table 1) are correct and significant (Equation 1). This is in agreement with Khan (1974) results that also have significant price (-1.84) and world income (0.92) coefficients. Equations 3 and 4 with a dummy have correct and expected signs and show the importance of the relative price separation format.

**Table 1: Export - Demand**

Equation	Equation I		Equation-3		Equation-4	
	OLS	TSLS	OLS	TSLS	OLS	TSLS
Variables						
Constant	-29.30 (-4.74)*	-15.15 (-1.25)	-33.49 (-3.06)*	-42.84 (-1.81)**	-28.95 (-2.30)	-74.92 (-2.09)
PU	-0.43 (-2.35)*	-1.32 (-1.88)**	-	-	-	-
ZW	2.28 (6.13)*	1.44 (1.99)**	2.58 (3.54)*	3.32 (2.05)*	2.28 (2.73)*	5.55 (2.30)*
Do	-	-	-	-	0.14 (0.80)	-0.95 (-1.60)
PXd	-	-	-0.46 (-1.61)	-1.18 (-2.07)*	-0.43 (-1.52)	-2.26 (-1.78)**
XW	-	-	0.31 (0.81)	0.36 (0.42)	0.34 (0.85)	0.48 (0.46)
R <sup>2</sup>	.97	0.95	0.96	0.95	0.96	0.87
D.W	1.40	1.54	1.40	1.57	1.41	1.65

Note: Number in Parentheses are t-statistics where \* and \*\* indicate significance at 5% and 10% respectively.

Domestic price index of exports is significant but world index of exports is not significant. This implies that prices of the domestic exports have a dominant effect on exports demand while in relative price format we do not get such important information that has tremendous bearing on export policies. Equation 3 shows the results of the separation of the relative price variable ( $PX_d/P_d$ ) in both OLS and TSLS.

Domestic price index is significant in TSLS and world income in both OLS and TSLS, whereas world price index is insignificant in both estimations. This implies that domestic price of exports is more important than world prices and this also points out the fact that domestic prices and world income are more important and dominant determinants of export demand. For export promotion attention is given to such factors. We do not obtain such important information in the traditional form of export demand, which has a tremendous bearing on export policies. Thus the study of export-demand in price-separation format is desirable.

In Equation 4 when the liberalisation dummy is added, we get different results in OLS and TSLS and both are not significant. Though the two results contradict each other, the obvious fact is that liberalisation does not have too bad an effect on demand for exports. Adjusted  $R^2$  and D.W. are satisfactory showing statistical fit and reliability of the equation.

Tables 2 and 3 show the various forms of the export supply function. Total export supply function in traditional form [Equation 2] is positively sloped and although the relative price is positive it is not significant. Khan and Saqib (1993) also obtained a positive but not significant coefficient (0.10). The positive and not significant coefficient implies that supply price is not important, that is Pakistan is a price taker. This is in accordance with economic theory that tells us that small countries are price takers. Their actions cannot influence the rest of the world [Dun and Ingram (1996)]. The significant coefficient for real GDP implies that the health of the economy plays a more dominant role than the supply price of exports in the traditional form.

In Equation 5 when the relative price variable ( $ZZ = P_{xpak}/P_d$ ) is separated we get very important information on the determinants of export supply. Domestic supply of exports ( $P_{xpak}$ ) turns out to be significant in TSLS, a result in accordance with economic theory. The negative and significant domestic price level suggests the importance of domestic inflation in influencing the supply of exports. Because of high inflation Pakistan's exports lose international competitiveness. To make exports more competitive, the domestic inflation rate has to be managed

within reasonable limits. Equation 6 shows that liberalisation has significant and positive influence on export supply while the relative price variable is significant at the 10% level. The signs of both domestic supply price (Pxpak) and domestic price level (Pd) are correct and according to expectations.

**Table 2: Export- Supply**

Equations	Equation 2		Equations 5		Equation 6	
	OLS	TOLS	OLS	TOLS	OLS	TOLS
Constant	-2.40 (-3.02)*	- 8.39 (-5.60)*	-8.19 (-4.02)*	-21.65 (-4.56)*	-6.959 (-4.07)*	-16.71 (-4.92)*
ZZ	0.29 (1.58)	0.26 (1.18)	-	-	-	-
Ypak	1.25 (11.97)*	1.27 (11.37)*	2.20 (6.75)*	2.50 (5.71)*	2.05 (7.73)*	2.09 (6.83)*
Do	-	-	-	-	0.24 (2.51)*	0.24 (2.30)*
Pxpak	-	-	0.21 (1.65)	0,12 (0.73)	0.34 (2.79)*	0.35 (2.12)*
Pe1	-	-	-0.75 (-3.47)*	-0.84 (-2.92)*	-0.91 (-4.85)*	-0.95 (-4.21)*
W	0.97	0.96	0.97	0.97	0.98	0.97
D.W.	1.40	1.40	1.54	1.56	1.60	1.61

Equations 7 and 8 (Table 3) show the results of Supply-Price specification suggested by Haynes and Stone (1983). This study has added the liberalisation dummy to the specification. For Equation 7 TOLS results are more reliable than OLS results. These results point out the importance of the study of exports in a simultaneous equation framework. TOLS results are correct and according to expectations. Export supply coefficient is positive but not significant in TOLS but significant in OLS. This implies that the volume of exports has a less powerful impact on export prices.

The domestic price index has the correct sign in TOLS though not significant. OLS and TOLS results contradict each other and the conclusion emerges that the health of the economy provided by GDP plays the most effective role in influencing the price of exports. Though the volume of exports and the domestic price index representing inflation have correct signs, they do not play a significant role in influencing the price of exports. Domestic economic conditions are the most important. When the

liberalisation dummy is added in Equation 8, we get very inferior results as well as incorrect and unexpected results for the domestic price index. Liberalisation has a negative impact on the price of exports.

**Table 3 Export Supply**

Equations	Equation -7		Equation-8		Equation-9	
	OLS	TOLS	OLS	TOLS	OLS	TOLS
Constant	0.43 (0.06)	-22.94 (-3.06)	-0.03 (-0.005)	-10.3 (-0.92)	6.00 (1.55)	-13.58 (-0.74)
LnX	0.23 (1.70)**	0.24 (0.74)	0.29 (1.97)*	0.38 (0.35)	0.42 (2.80)	1.32 (1.78)
LnYpak	-0.23 (-0.34)	1.92 (2.54)*	-0.24 (-0.38)	0.62 (0.43)	-0.76 (-1.83)	0.66 (0.34)
Do	-	-	-0.21 (-1.41)	-0.65 (-1.09)	-	-
Pd	1.11 (3.25)*	-0.1 (-0.3)	1.18 (3.61)*	0.77 (1.44)	0.26 (1.52)	-1.97 (-2.23)
Pxpak(-1)	-	-	-	-	0.86 (8.17)	1.52 (3.00)
$\bar{R}^2$	0.98	0.98	0.98	0.98	0.98	0.95
D.W.	1.50	1.23	1.53	1.46	1.33	2.01

Equation 9 shows the dynamic version of the supply-price response for exports. The results are highly satisfactory and the coefficients have the correct and expected signs. Exports supply, domestic price and lagged supply price of exports are significant. Domestic economic conditions, though not significant, have a positive impact on the supply price. The signs as well as the level of significance of the coefficients demonstrate that in the dynamic version of the supply-price response for exports, lagged year price of exports play a more dominant role than the domestic supply condition represented by the real GDP. Exporters give more attention to the last year exports prices. Lagged year exports in the traditional form of both exports demand and supply were significant, though this significance was much smaller for exports supply. Khan (1974) also obtained similar results for Pakistan for lagged exports. For export supply lagged exports supply had the coefficient 0.40(2.24) in TOLS.

#### **IV. Conclusions**

The signs of the relative price variable and world income are correct and significant in the traditional demand equation for total exports. The estimation results provide consistent estimates of the export demand and supply elasticities and are comparable to other studies. World income turns out to be a more significant factor than export prices. Liberalisation does not have too bad an effect on demand for total exports. Price separation format for export demand has the correct and expected signs and shows the importance of the format. Domestic price index of exports is significant but the world index of exports is not significant. This implies that prices of domestic exports have a dominant effect on exports demand while in relative price format we do not get such important information, which has a tremendous bearing on export policies. Lagged year exports have a significant influence on the demand for current exports.

Positively sloped total export supply function is in agreement with other studies. Liberalisation though not significant has a positive influence on total exports supply. In price separation form, domestic price level is negative and significant suggesting that domestic inflation plays a dominant role in export supply. To make exports more competitive, the domestic inflation rate has to be contained. This equation also documents that the format provides better estimates of export supply than the traditional relative price format. The importance of the price separation format also lies in the fact that the dummy is significant whereas in relative price format it is not significant though positive. Past export supply does influence current supply. These results confirm the Haynes and Stone observation that dynamic supply-price specification gives better results than quantity specification of exports behaviour. Moreover, OLS estimates are inferior to TSLS estimates. This indicates that the simultaneity bias of the single equation study of exports makes the results biased and inconsistent.



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## **Impact of Foreign Aid on Fiscal Behaviour: A Case Study of Pakistan (1980-2000)**

**Salman Ahmad\***

### **Abstract**

Economists have been trying to study the linkages between aid inflow and government activities in developing countries. With the passage of time, the analysis has become more sophisticated. The development of two-gap models [for example, Chenery and Bruno(1962); and Chenery and Adelman(1966), among others] was an important contribution to the literature. More recently, two-gap models have been extended into three-gap models. Iqbal (1995) added a fiscal constraint to the traditional saving and foreign exchange gap. In such cases, the fiscal constraint is intended to reflect potential limitations to finance public investment that may be required to support a given level of output.

Another development is the analysis of effectiveness of foreign aid on the fiscal behaviour of governments in underdeveloped countries. Empirical studies by Khilji and Zampelli(1991), Khan and Hoshino(1992), among others are important contributions to this topic. All these studies gave conflicting conclusions about the effectiveness of assistance in terms of fiscal behaviour. Generally, these studies prove that aid reduces the taxation effort and is substituted between public investment and public consumption.

The purpose of this paper is to examine the impact of foreign aid on the behaviour of recipient countries like Pakistan. The response is measured in terms of their public investment and consumption as well as taxation. Both official and unofficial grants and loans from bilateral and multilateral sources are included in aid. It is postulated that the government's expenditure and revenue efforts are affected by foreign aid through a reallocation within the categories of public expenditures and revenue raising. Various previous research studies have found evidence for considerable dissipations of aid in the form of government consumption (Please.1967:Papanek, 1973; Wejsskopf, 1972a, 1972b; and Heller, 1974). Many researchers concentrate at the macro level on the relationship between foreign aid, domestic savings and economic growth (see, for example, Griffin and Enos, 1970).Recent work by Mosley, Hudson and

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Horrel (1987) showed that while the conclusions regarding such putative relationships may be valid, there is nevertheless an interesting question regarding the effect of foreign assistance on intermediate policy variables such as public investment, government consumption and taxation. We pursue their lead and try to trace such a relation in a simultaneous equation model applied to an underdeveloped country, Pakistan. The results confirm the hypothesis that aid does affect consumption, investment and taxation in Pakistan. In particular, it is shown that grants and loans have different effects on investment and taxation. In the next section, we describe the model and derive the system of equations. The data, estimation procedure, and results are described in sections 3 and 4 respectively. Summary and conclusions follow.

### **The Model**

Our aim is to develop a simultaneous equation model to estimate the effects of foreign aid on the taxation effort of the government and public current expenditure. We make the following assumptions regarding the actions of the public policy makers. They maximise their utility subject to:

- a) alternative uses of public resources such as provisions for economic growth, spending for social and economic services, and for the maintenance of political institutions.
- b) the distribution of total GDP between the private and the public sector.
- c) alternative models of domestic financing, such as taxation and borrowing.
- d) alternative types of external assistance, such as grants and loans.

Let us postulate the following general utility function for the policy makers at any time period:

$$U = f(Ig, T, Gc, Gs, B, A1, A2)$$

Where,

Ig = Public investment expenditure

T = Total tax revenue

Gc = "civil" consumption

Gs = Socioeconomic consumption

B = Borrowing from domestic sources

A1 = Total foreign grants to the public sector from all sources.  
 A2 = Total foreign loans to the public sector from all sources.

Ig is the public sector's contribution to the planned growth rate. It is measured by gross capital formation in the public sector plus net loans to the other sectors.

Gs, by definition, includes all current expenditures which are not intended for capital formation, but rather are spent for socioeconomic ends. This will include total government consumption. Therefore, Gs does include expenditure on health and education, i.e. some investment on human capital.

Gc, is the expenditure of the state to sustain itself. It includes administrative expenses, debt servicing, police security, defence forces and some transfer payments.

On the revenue side, tax policy is assumed to be a manipulable instrument. Hence the endogenous status of the tax variable. Borrowing is assumed to be a restriction yielding disutility to the policy makers.

External finance through A1 and A2 are viewed as exogenous to the model. These are controlled by aid giving agencies which are motivated by both political and economic factors.

Our model consists of three structural equations:

$$I_g = \alpha_0 + \alpha_1 I_g^* + \alpha_2 T + \alpha_3 A_1 + \alpha_4 A_2 + u_1 \quad (1)$$

$$G = \beta_0 + \beta_1 G + \beta_2 T + \beta_3 A_1 + \beta_4 A_2 + u_2 \quad (2)$$

$$G = \gamma_0 + \gamma_1 G^* + \gamma_2 T^* + \gamma_3 I_g + \gamma_4 A_1 + \gamma_5 A_2 + u_3 \quad (3)$$

There are 3 endogenous variables, Ig, T and G, where Ig is the development expenditure of the government, G is the non-development expenditure which is the sum of Gc and Gs, and T is the tax revenues of the government, and there are 5 exogenous variables. A<sub>1</sub> A<sub>2</sub>, G\*, Ig,T\*.

The relationship yielding the target variables are as follows:

$$I_g^* = \alpha_{11} Y_{t-1} + \alpha_{12} I_p \quad (4)$$

$$T^* = \alpha_{13} Y_{t-1} + \alpha_{14} M_{t-1} \quad (5)$$

$$G_c^* = \alpha_{15} G_c \ t_{-1} \quad (6)$$

$$G_s^* = \alpha_{16} E + \alpha_{17} Y_{t-1} + \alpha_{18} (Y_t - Y_{t-1}) \quad (7)$$

Where,

M = Value of real imports

E = Primary school enrollment (in units of 10,000 students)

Ip = Real private investment expenditure

$I_g^*$  can be expected to be influenced by the desired rate of growth of GDP/capita. Within a Harrod-Domar framework  $Y_{t-1}$  can be used as an instrument because  $I_g^*$  will be positively related to  $Y_{t-1}$ , given a target rate of growth. The relation between  $I_g$  and  $I_p$  may be complementary or substitutional. E is used as a proxy variable to measure the level of expenditure on  $G_s$ .  $G_c^*$  increases at a constant proportion on a fiscal year basis. The planned level of taxes are determined by the previous year's income and the level of the previous period's imports.

### The Data

We use time series data for the period 1980-2000 published by the World Bank. All aid data have been converted to real terms by dividing current values by deflators, the initial year price base is taken as 100. All figures have also been converted to dollars by using the exchange rate for the appropriate years. The data for exogenous variables was calculated from estimating equations (4) to (7) using OLS and then using the parameter estimates to generate data for exogenous variables.

### The Empirical Results

The Rank condition of identification showed that all the three structural equations are exactly identified. We have used 2SLS technique to estimate these three equations individually. The estimated equations describe the government's consumption, investment, and taxation behaviour in the presence of foreign aid. The estimates obtained for equations (1)- (3) are given in Table 1 - 3 respectively.

**Table-1: Dependent Variable: Development Expenditure**

Regressor	Parameter	t-statistic
$I_g^*$	0.27	2.3
T	0.074	25.6
A1	0.32	1.28
A2	0.85	1.2
constant	-0.8	-6.5

**Table 2: Dependent variable: Non-development expenditure**

Regressor	Parameter	t-ststistic
G*	0.56	3.9
T	0.08	22.3
A1	0.48	1.28
A2	-0.21	-1.1
Constant	-3.2	-6.5

**Table 3: Dependent variable: Tax revenues**

Regressor	Parameter	t-statistic
G*	0.8	10.06
T*	0.52	12.34
<i>b</i>	0.192	3.8
A1	-0.12	10.06
A2	1.21	3.9
Constant	-3.2	-4.0

Table I shows estimation of equation (1) with investment as the dependent variable. The t-test shows that the parameter  $\alpha_3$  and  $\alpha_4$  are not statistically significant at the 0.05 level. Thus although grants and loans affect public investment positively, the variables are statistically not reliable. The results show that loans, however, have a larger effect on public investment than grants and that grants are wasted away on non-development projects. The parameters  $\alpha_1$  and  $\alpha_2$  are statistically significant. They also show a positive relationship between public investment and tax revenues and target investment. However, the contribution of taxes to public investment is weaker (7.4%) while the growth rate of investment plays a larger role showing that the previous period's development projects cause an increase in to-day's public investment.

Table II shows estimation of equation (2) with non-development expenditure as the dependent variable. The t-test shows that the parameters  $\beta_3$  and  $\beta_4$  are statistically insignificant at the 0.05 level. Grants are positively related to non-development expenditure while loans are negatively related which shows that loans do encourage investment. The changes in non-development expenditure also depend on the historical growth in public expenditure. The parameters  $\beta_1$  and  $\beta_2$  are statistically significant at the 0.05 level. The results show that changes in non-development expenditure are positively related to historical growth in public expenditure and tax revenues. The value of  $\beta_1$  shows that 56% of public expenditure is on non-development activities.

Table III shows the estimation of equation (3) with tax revenues as the dependent variable. The t-test shows that all the parameters are statistically significant at the 0.05 level. Interestingly, grants reduce the taxation effort, while loans increase it. The explanation for this is quite simple. Rational policy makers use nonrepayable grant money to reduce the tax burden, but the burden of loan repayment induces them to increase taxes. Previous tax efforts and public expenditures are also significant determinants of tax revenues. Tax revenues are also positively related to public investment expenditures that shows that an increase in tax revenues is also dependent on public investment.

### **Summary and Conclusions**

A number of interesting conclusions and important policy implications can be arrived at from this study. Our results confirm the hypothesis that foreign aid affects both the expenditure and the revenue side of the Pakistan government's budget. On the non-development side, generally foreign aid is treated as an increase in income, and given positive income elasticity in the government sector there is an increase in non-development expenditure. The parameters of A1 and A2 in Table 2 show that the marginal propensity to consume out of foreign aid is less than one. Therefore, some public investment is also financed from aid money.

There are important differences between aid in the form of grants and loans used for consumption as well as investment purposes by the government. Both loans and grants are used for consumption as well as investment purposes. But *ceteris paribus*, 85% of a dollar of loan received goes to investment as opposed to 32% of grants. Thus if the purpose of aid is to generate investment it is served much better by making loans to Pakistan's government than by giving grants.

Finally, aid also affects the tax efforts of the government. Interestingly, again grants reduce the tax burden as shown by the negative sign of the parameter of A1 in Table 3 while loans increase it as shown by the positive sign of A2 in Table 3.

At the same time, the comparison of welfare effects of grants vs. loans may not be straight forward. Since grants do not have to be repaid, the reduction of taxes may seem to be more welfare enhancing than the effects of loans. Since loans, however, lead to relatively more investment and hence more income in the future, the net discounted benefits may very well be higher. This is an interesting area of future research.



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## Sustainable Development through Science and Technology

**Tariq Husain\***

“Science education, in the broad sense... is a fundamental pre-requisite for democracy and for ensuring sustainable development.”

Declaration on Science and the Use of Scientific Knowledge, World Conference on Science, Budapest, July 2, 1999

### **Abstract**

After 50 years of nationhood, about 60 million Pakistani citizens still live in absolute poverty which is a condition so debasing that it robs the poor of the very potential of their genes. Illiteracy, malnutrition, high maternal, child and infant mortality afflict more than 50% of Pakistan's population of 144 million. Due to mismanagement of its human and natural resources Pakistan is in a vicious cycle of economic dependence (Figures 2 & 3) with high indebtedness, low growth rates of exports and GDP and a decaying education system. During the last two decades Pakistan has engaged in firefighting through external debt re-schedulings and increasing its dependence on the Bretton Woods institutions (World Bank, International Monetary Fund) and their richer shareholders. As a result the important development needs of the nation's human capital have been grossly neglected. It has failed to develop its human capital, particularly its domestic scientific and engineering communities and thus is not ready to meet the growth challenges of the 21<sup>st</sup> century. It is postulated that Pakistan must, on a crash basis, develop a domestic scientific and technology (S&T) community and create a scientific infrastructure if it seeks to become economically and politically self-reliant. With about 100 scientists/engineers for a million population, Pakistan's current S&T capacity is woefully inadequate to be able to capitalise on the wealth of opportunities that are becoming available through globalisation. The S&T capacities of Pakistan's competitors in the world marketplace are significantly higher (300 per million for India; 600 per million for China; 2,600 per million for Korea). Pakistan needs both enhanced S&T capacity and the associated education system if it is to increase the “science-cum-knowledge content” of its exports and GDP. This is a *sine qua non* for achieving expanded economic well

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being for its citizens and providing the wherewithal for ensuring their security from internal and external threats. Not doing so will leave Pakistan at the bottom of the country league table in terms of poverty, security and even liberty. This is a future that Pakistan should not have.

## **Sustainable Development through Science and Technology**

### **I. Context and Issues**

In 1930, when industrial economies started descending into the Great Depression, John Maynard Keynes reminded his anxious contemporaries to consider

“the economic possibilities of our grandchildren. (Scientific accomplishments, i.e.) Coal, steam, electricity, petrol, steel, rubber, cotton, the chemical industries, automatic machinery, mass production, wireless, printing have brought in sight the possibility that, assuming no major war and no important increase in population, the *economic problem* may be solved within a hundred years. This means that the *economic problem* is not the *permanent problem of the human race*.”<sup>1</sup>

Keynes defined the *economic problem* as

“the struggle for subsistence, always hitherto the primary, most pressing problem of the human race – not only of the human race, but of the whole biological kingdom from the beginnings of life in its most primitive forms...”<sup>2</sup>

Seventy years later, the *economic problem* has been solved for most of the citizens of OECD countries; but for the developing world there is no end in sight. Certainly, this is the case for Pakistan with 60 million of its citizens living in daily contact with Lord Keynes’ *economic problem*, i.e. living in absolute poverty. Twenty five years ago, Robert McNamara, former President of the World Bank, defined “absolute poverty” as:

“... a condition of life so limited by illiteracy, malnutrition, disease, high infant mortality and low life expectancy as to be beneath any rational definition of decency.”<sup>3</sup>

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<sup>1</sup> From Piel, Gerard, *The Age of Science*, 2001, p. 432.

<sup>2</sup> *Ibid*, p. 381.

<sup>3</sup> Speech to the Board of Governors, 1973.

Most of us who have adequate food, shelter and the possibility of a better future cannot imagine the hopelessness, vulnerability and voicelessness of those of our fellow citizens who live in absolute poverty. This must not be, as it has been, the *permanent problem* of Pakistan.

At the beginning of this millennium Pakistan stands at a crossroad. This is not the first time that the Pakistani nation has faced stark choices. In its 50 plus years of existence the country has experienced a range of governments – from parliamentary democracy in the early part of the 1950s through a series of military governments till the recent (fourth) peaceful takeover by the military. In between, there have been five short spells of “technical” democracy; that is, democracy in form, but authoritarianism in substance. This was true for the first civilian administration of Zulfikar Ali Bhutto in the early 1970s. And this was true of the subsequent four civilian administrations in the 1990s of Benazir Bhutto and Mian Nawaz Sharif. These facts and this context are important as we examine the stark choices for the country at the beginning of the millennium. After about half a century of existence, Pakistan’s per capita income is US\$460. Most OECD households spend that much money on coffee in less than a year. Out of a population of 144 million, 50% do not have access to safe water; 80% do not have access to sanitation; 55% are illiterate; 10 million children under five are malnourished; and, as noted above, 40% are living in absolute poverty. Only 3% of the relevant age group participates in university level education versus more than 40% for most OECD countries. The “left out human capital” at all levels of the education pyramid is (almost) sinfully high. (Figure 1)

**Figure 1: Pakistan - Basic Characteristics**

<b>Total Population (2002)</b>	144 million		
<b>Age Structure (2002)</b>	< 15 yrs	42.87%	61.7 million
	15-64 yrs	52.89%	76.2 million
	> 65 yrs	4.24%	6.1 million
<b>Income distribution: Ratio of highest to lowest deciles</b>	27.6/4.1 = 7		
<b>Literacy Rate (over 10 yrs)</b>	46% (M: 61%; F:39%)		

**Education Pyramid**

	Enrollment Rate (%)	Left out Human Potential
Primary (5-9 yrs age)	75	25
Middle (10-12)	46	54
Lower Secondary (13-14)	31	69
Higher Secondary (15-16)	11	89
College & University level (17-23)	3	97

**University level enrollment per 100 of population**

Pakistan	0.359
India	0.642
Iran	1.600
Korea	5.609
China	0.473
Sri Lanka	0.474
Japan	3.14

**Sources:** Education for All, 1998 Census. Government of Pakistan World Development Reports (World Bank)

Pakistan's economic problems have grown instead of becoming less onerous. Mostly because of the under-investment in human capital (the "left out" in the education pyramid in Figure 1), we have not been able to manage our economic issues well, and so today, Pakistan is in a debt-trap with its total debt approaching 90% of GDP. India's total debt, by comparison, is less than 50% of GDP, as is the case with all East Asian countries. The debt-service has lately been between 5 and 6% of GDP and more than 25% of exports. This debt burden is high on a relative as well as on an absolute international scale. Debt rescheduling with the Paris and London clubs has postponed the debt service burden from 1999/2000 to a medium term future. But with export earnings growing at an anemic 3% per year (1990-1998) the critical issue facing the government is how to create earned foreign exchange to finance this debt service when it does fall due in the medium term. The only sustainable policy is to expand export earnings to a multiple of the recent rate. Export earning growth rates of China, Korea, India, and Malaysia have been in excess of 13% per year for the same period. These higher growth rates of export earnings for these countries are primarily due to the higher proportions of high technology<sup>4</sup> content in their exports. For China, India, Indonesia, Korea and Malaysia, the proportion of high technology exports as a percentage of manufacturing exports has been 21%, 11%, 20%, 39% and 67% respectively. For Pakistan, this proportion is less than 5%: its principal exports are primary commodities, textiles, leather products, surgical instruments and sporting goods. Pakistan's export earnings (or GDP) are unlikely to increase at the needed rates unless it creates the human resource capacity to increase the *science-content* of its production and exports. This would require a herculean effort by Pakistan to upgrade and reform its education system, particularly its domestic science and engineering capabilities. Pakistan also has to provide gainful employment to a labour force which is growing in excess of 3% per year. Its current labour force is about 55 million, but given its "young" age structure (42% of its population is below age 15), its labour force will more than double in 15 years with substantial increases every year. Meeting their education, health, housing and then their employment needs is a known claim on future income. Without higher rates of growth in GDP and exports, more and more Pakistani citizens will be experiencing absolute poverty.

So, besides the shorter term "firefighting" of debt rescheduling, the government must focus on the medium-to-long term development needs of the nation. This will require a shift of priorities and higher level governmental attention to: a) expanding export earnings by increasing the

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<sup>4</sup> Computers, drugs, medicines, electronics, automobiles, chemicals and machinery.

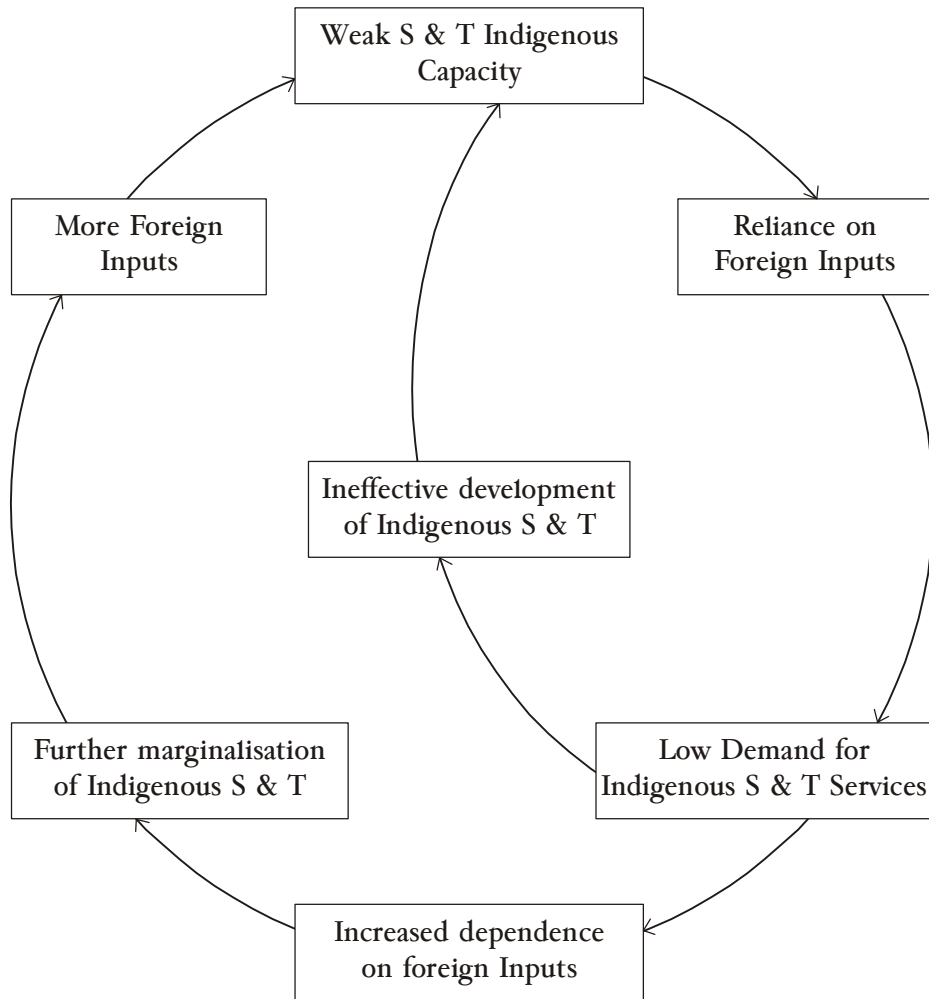
“science-content” of its products significantly, and b) expanding domestic employment opportunities for the current unemployed as well as the anticipated 60 million entrants to the labour force during the next decade and a half and beyond. Accomplishing these objectives will require significant increases in Pakistan’s total factor productivity by a combination of policies and investments which both improve human capital (education, gainful employment) and promote an environment where innovation is encouraged. The most imperative necessity (and there are no equally efficient alternatives either) is to improve the absorption capacity of the Pakistani domestic scientific and engineering community to enable it to work with Pakistan’s farmers, industrialists, and service providers to improve the science/knowledge-content of Pakistani products. And also to enable this community to borrow from international R&D as well as to create its own solutions to Pakistan’s local developmental problems. If Pakistani society is to become economically (and politically) self-reliant, it is essential that the problems of its national security, agriculture, of its local pests and diseases, of its local material base, of its environment, water bodies, soil mass, salt balance, watershed erosion, energy production, industrial production be solved by domestic talent. This will not be possible without effective as well as significant upgrading of its human (particularly scientific) resource base. Creative problem solving by this upgraded human resource base is the key to solving the *economic* problem, i.e. sustainable socio-economic development.

Pakistan’s short term degrees of freedom are limited – it is dependent on non-citizens for resources, yet it has to compete with countries which have had significant head starts. It has to get out of these vicious circles while negotiating these short term constraints (Figures 2&3). In an inter-dependent, globalising world, the socio-economic problems of Pakistan are interlinked scientifically, economically and politically with those of its competitors in the market place. Scientifically, their resolution requires an understanding of the physical, chemical and biological processes and the interaction of these processes in the entire earth system. Politically and economically, policy options to address these problems converge on the need for internationally accepted actions relating to energy, technology, environmental standards, labour standards and international trade. These issues are large and are stretching world political leadership to breaking point. National actions and international cooperative action are needed to address these trans-boundary problems. Pakistan *does not have the human talent to diagnose, anticipate, solve these complex issues; nor to negotiate satisfactory solutions with either bilateral or multi-lateral (IMF, IBRD, WTO) partners.*

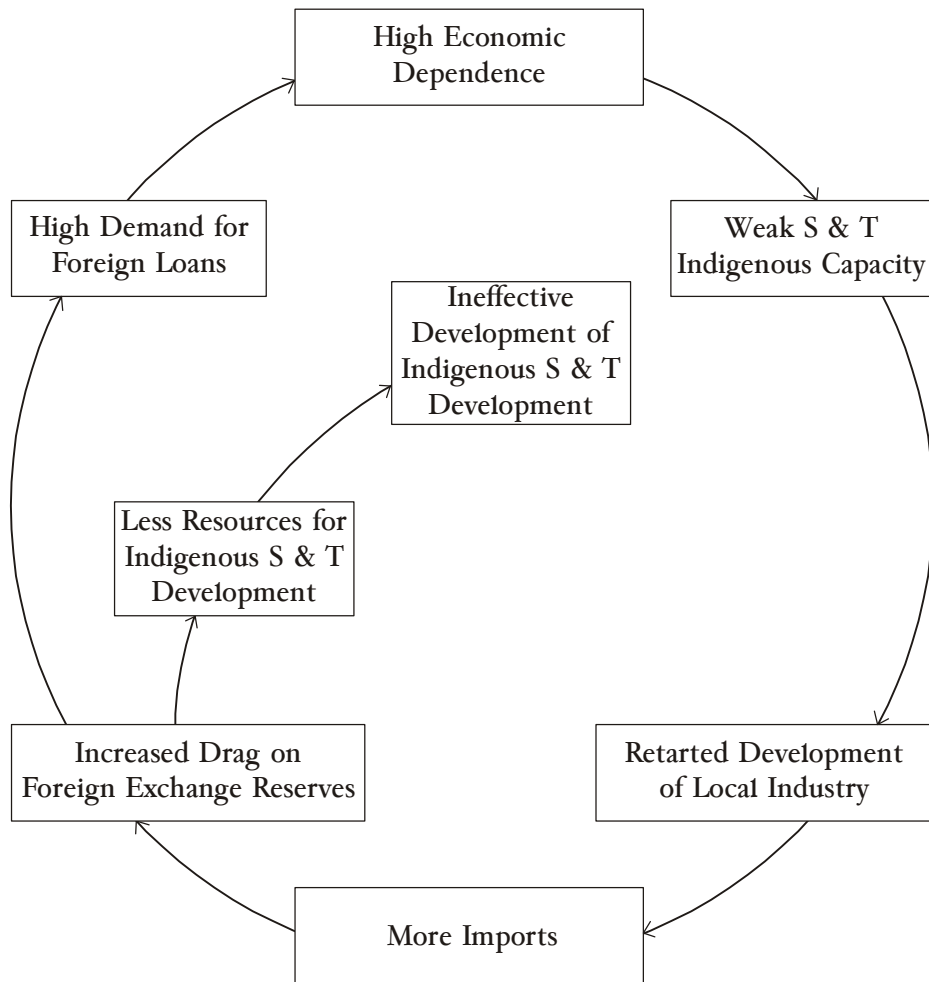


**Figure 2: The Vicious Circle of Technological Dependence**

Adapted from "Essays in Science" by Dr. M.A. Kazi



**Figure 3: The Vicious Circle of Economic Dependence Superimposed on the Circle of Technological Development**



In this context, my submission is that the consequences of globalisation for Pakistan need *different* and *non-marginal solutions* and thus require more effective attention by the government and Pakistan's intellectuals. As noted above, Pakistan cannot carry on as it has so far done – i.e. be reactive and pre-occupied with short term firefighting – a behaviour *partly* because we as a nation, seem to be incapacitated by the weight of debt and poverty. But it is *mostly* due to our *limited domestic human* (particularly *scientific*) *capacity*, which is, and has been, grossly inadequate for the challenges of sustainability. To concretise the magnitude of Pakistan's socio-economic challenges, let me give some highlights:

- **The annual environmental cost** from air and water pollution, and land degradation exceeds **US\$2.2 billion**. This is about 4% of Pakistan’s GDP. The people impact is in tens of million. (see Figure 4)

**Figure 4: Annual Cost /1 of Environmental Mis-management**

Environmental Issue	Estimated Annual Cost to the Economy (1990s) US\$ millions		People Impact (Millions)	
	Pakistan	India	Pakistan	India
Air Pollution	900 /2	1500	30+	50
Surface water pollution	750	6000	50+	100+
Groundwater pollution	Aquifer Destruction (salt:chemicals)	unknown	40+	
Soil degradation	350	2000	most arable land	50% of arable land
Rangeland degradation	130			loss of ecological functions
Deforestation	50	200		
Industrial hazardous waste	unknown	unknown		
Loss of biodiversity	unknown	unknown		

1/ Most likely under-estimates of the true costs  
 2/ Adjusted World Bank estimate

Source: World Bank

- **Poverty and associated human deprivation** resulting from the above referred mismanagement of our natural resources (Figure 4) affects at least 50% of the country’s population. The biggest deprivation is of course, **illiteracy**, which afflicts **80 million** people and closes many options for them. It also reduces their productivity and so close to 60 million, 40% of the total, **live in absolute poverty**, a condition in which even food needs are not satisfied and vulnerability to shocks is high.
- **Inequality of income is high**. The ratio between the income shares of the top and bottom deciles is **seven**. In a comparison with India,

Indonesia and Bangladesh, **Pakistan has the highest level of inequality.**

- Pakistan also spends about **7% of its GNP on defense**. This is unsustainably high. Perhaps it is necessary in our geopolitical environment, but this bears re-examination, given our inequality and our poverty.

*Salt Balance*: Given the importance of the agricultural sector (25% of GDP; >80% of exports) it will be pertinent to specially mention two of Pakistan's most serious environmental deteriorations: *salt balance* in the Indus Basin, and *watershed erosion* in the catchment areas of our river systems. Together these two are destroying our most precious resource, i.e. *the integrated irrigation system of the Indus Basin* which feeds us and provides the bulk of our export earnings. The *salt balance* issue springs from the relatively straightforward arithmetic that unless the outflow of salts out of the Indus Basin equals or exceeds the salts flowing into the Basin, salt accumulation would occur in the Basin. If such accumulations occur, then it is only a matter of time before salt accumulation in the soil and the underground aquifer becomes intolerable to plants and life as it is known today. The Indus Basin system is unique in that it has virtually no return flow of subsurface drainage water – effluent from canal commands remain in the canal commands<sup>5</sup>. In gross terms, about 35 million tonnes of dissolved salts enter the Indus Basin annually, about 7 million tonnes are (presently) discharged into the sea, leaving a net annual addition of 28 million tonnes to the canal commanded area. This amounts to an insignificant annual increment, but adds up to gradually toxify the aquifers and eventually will make agriculture unviable in the Indus Basin.

The *salt balance arithmetic* of the presently usable ground water areas deserves special mention in this context. So far, human reclamation efforts or natural processes have essentially moved soil salts from the upper soil layers to either below the root zone or into the aquifer itself. As more surface water is brought into these areas and/or ground water is re-circulated without providing effective salt drainage, the soils or the aquifer continue adding to their prior accumulations of salt. This positive salt accumulation process has to be stopped or slowed down. If neither is done, these areas would eventually become saline ground water areas. So far, drainage projects (SCARPS) in usable ground water areas *have only attempted to address water balance issues*, i.e. lowering the water table. In

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<sup>5</sup> Minor exceptions are the Swat Canals, the Right Bank Canals of Guddu and Sukkur Barrages, Khairpur Scarp, and the Chaj Saline zone scarp.

the *longer-term* view, *the salt balance issue has cardinal importance*. The Left Bank outfall drain is the first effort to export salt from the basin into the sea. But it has to be used for this purpose through effective maintenance. We have just begun to scratch the surface of this environmental issue.

*Watershed Erosion*: In the northern catchment areas of the Indus and Jhelum, *watershed erosion* has been a *recognised issue* for quite some time, but little authoritative data is available to policy makers or even analysts on the rates of watershed erosion and their likely effects on Kharif and Rabi river flows and on the siltation of the rivers and reservoirs. Since human populations inhabit watershed areas, erosion control has a more immediate imperative – as it deals with the problem of poverty in the uplands, which is partly the result of misuse of watershed areas through over-intensive farming on steep slopes, over-grazing of range lands, and removal of forest (for wood fuel). Loss of vegetation in low rainfall hilly areas through uncontrolled grazing has not only reduced the carrying capacity of the land for livestock, but has led to loss of top soil, in some cases down to bedrock, and has increased rainfall runoff rates, aggravating flooding downstream. In many areas this process may already have gone beyond the point of reversibility.

Both *salt accumulation* in the Indus Basin and *watershed erosion* amount to a “*mining*” of the *nation’s most precious natural resource base*. Preventive action is needed **today**. Tomorrow, it may be too late. Scientific and engineering capacity is needed to address these gigantic issues. *Pakistan does not have the needed capacity in science or engineering or agricultural science (soil physics and chemistry)*.

## II. Scientists and Societal Problems

The 20<sup>th</sup> century witnessed a colossal change in the way society honoured its scientists. During World War I scientists served as ordinary soldiers who were conscripted and fought on the frontlines. During World War II, however, they were treated as irreplaceable national assets and were kept at home to provide the intellectual muscle for the war effort. Bertrand Russell described it eloquently when he said that till the early 20<sup>th</sup> century, when fighting wars nations honoured their military generals, but during the 2<sup>nd</sup> World War (particularly after the Manhattan project) *nations fought for their nuclear physicists*. The reason for this significant change in the relative importance of scientists was the demonstration of the significant enhancement of national security that was achieved by the application of science to complex military problems. The invention of radar enabled

Britain to gain air superiority over Germany. The defection of German and Italian scientists to the US enabled the US to build the atomic bomb before Germany or Russia. The application of probability theory improved air bombing effectiveness and the search for submarines lost at sea. These kinds of applications of science, mathematics and probability theory gave comparative military advantage to nations on a scale not observed before in human history.

*A new discipline – Operations Research – was created during the 2<sup>nd</sup> World War to apply physics, mathematics and probability theory to solve optimisation, scheduling, search, inventory management and transport management problems.* This began with military applications but, in the 1950s, began to be applied to problems of industry, medicine and agriculture. The 2<sup>nd</sup> World War was won by scientists and engineers. Both the laboratory and the factory provided the new arsenal for democracy: radar, missiles, penicillin, atomic bomb – all were harvested from the knowledge and innovativeness of an elite group of scientists and engineers. Pakistan's own Nuclear Programme is a testimony to how scientists of Pakistan have given it a military deterrent capacity which is vital for national security. During the 1940s, the US national war effort was coordinated by Dr. Vannevar Bush who headed the Office of Scientific Research and Development (OSRD) at the White House with full access to President F.D. Roosevelt. One conversation reported by Vannevar Bush illustrates the turning point of the changed attitude towards Science in Peace times.

Vannevar Bush said,

“Roosevelt called me into his office and said, ‘What is going to happen to science after the war?’ I said, ‘It’s going to fall flat on its face.’ He said, ‘What are we going to do about it?’ And I told him, ‘We better do something damn quick.’”<sup>6</sup>

Soon after, President Roosevelt sent Vannevar Bush a letter asking him to address four questions.

- *The first question dealt with “spinoffs”: how to promote civilian innovations that arise from military research.*
- *The second question asked how to support medical research or the “war of science against disease.”*

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<sup>6</sup> Bush, Vannevar, “Science – The Endless Frontier: A Report to the President on a Program for Post-War Scientific Research (Washington, DC: National Science Foundation, 1980)

- *The third question asked what the government could do then and in the future to aid research activities by public and private institutions – a complex and profound question which remains a subject of debate five decades later.*
- *The fourth question was how government could aid the task of “discovering and developing scientific talent in American youth.”*

President Roosevelt died before Vannevar Bush could finish his report. President Truman followed up but with less energy and vision. The creation of the National Science Foundation (NSF) was recommended by Bush in 1945 but it was created five years later under the impetus of another war – the Korean conflict. The second boost came in 1957 after the launch of the Russian Sputnik and four years later the American desire to “land a man on the moon.” Conflict and National Insecurity have been necessary for energising the application of science to the problems of war and peace. It need not continue this way in this millennium – at least, for Pakistan.

*The second, third and fourth questions of President Roosevelt are therefore, highly relevant for today’s Pakistan – both for ensuring national security and for solving the great problems of peace, i.e. socio-economic development to provide:*

- **The means for human survival – food, water, shelter, education;**
- **Physical security from the threats of humanity and nature;**
- **Social security and stability in human relationships; and**
- **Human capacity for sustaining the above.**

### **III. Technological Innovation and Economic Growth**

Scientific knowledge provides economic value when it solves problems or is incorporated in technology and products. Defense, environmental protection, health provision, transport, energy systems – all require national infrastructures which link science with technology and, through that, with satisfaction of societal needs. Improving the quality of human life through improved preventive and therapeutic medicine requires knowledge in a wide range of scientific disciplines – genetics, chemistry, biology, materials sciences, statistics, mathematics, computer science, physics, nuclear medicine. National security also requires the whole spectrum of scientific disciplines from computer modeling for simulation of strategic scenarios to materials science, aerodynamics, robotics, quantum mechanics and nuclear physics. Environmental protection is becoming a life preserving necessity as we continue to impose an unsustainable burden on our ecosystem from the watersheds in the north to the seashores in the south, and

the air/water environments in Pakistan's major cities. The *science and technology needed to measure, monitor and mitigate these effects* span a wide range of disciplines – atmosphere and climate sciences, physics and chemistry of the environment, clean combustion technologies, mathematics, computer science, molecular biology and so on. Figure 5 presents a subset of the range of science and technology needed for *three* important *human needs* of Pakistan (or the developing world) – *national security, environment and energy, and human health*.

**Figure 5: Sciences and Technologies for National Challenges**

<b>National Challenges</b>	<b>Science (examples)</b>	<b>Technology (Illustrative)</b>
National Security	Physics	Nuclear Technology
	Materials Sciences	Plasma Technology
	Computer Science	Materials Technology
	Robotics	Electronics
	Quantum Mechanics	Computing
	Chemistry	
	Mathematics	
Energy & Environment	Physics	Recycling
	Chemistry	Clean Combustion
	Biology	Sensing & Measurement
	Atmospheric & Climate Sciences	Waste Management
	Ecosystem	Information Management
	Electrical Engineering	Bio-remediation
	Mathematics	
Human Health	Biochemistry, Biology	Information Management
	Genetics	Gene Sequencing
	Materials Sciences	Molecular Detection
	Nuclear Medicine	Clinical Evaluation
	Physics, Chemistry	Electronics
	Molecular Biology	Drug Design
	Mathematics	Measurement of Effects

**Source:** Adapted from: "Global Innovation/National Competitiveness," by Brown, Harold and Charles Herzfeld. A Report by the Center for Strategic and International Studies (1996), USA.

Historically, technological innovation has been the critical variable in explaining sustainable economic growth. Many studies have demonstrated that social returns from research and development (R&D) expenditures are



about 50% per annum. One recent review<sup>7</sup> of econometric evidence concluded that the average private annual rate of return to innovation seems to be between 20 and 30%, while the social rate of return is closer to 50% (Figure 6). Similar estimates of social returns have been made for public sector expenditures on R&D. The World Bank’s Consultative Group on International Agricultural Research (CGIAR) and its predecessors generated social returns in excess of 100%. The Green Revolution (Rice & Wheat) came from investments in R&D by IRRI and CYMMIT and saved the world from famine. Similar gains have been observed when publicly funded R&D, effectively managed, lifted millions out of food and income poverty.

**Figure 6: Private & Social Rates of Returns to Private R&D**

Author	Estimated Rate of Returns (%)	
	Private	Social
Naduri (1993)	25	50
Mansfield (1997)	25	56
Terlecky (1974)	29	48-78
Sveikanskas (1981)	25	50
Goto-Suzuki (1989)	26	80
Bernstein-Nadiri (1988)	27	100
Scherer (1982)	35	125

**Source:** White House, Council of Economic Advisors, "Supporting Research and Development to Promote Economic Growth: The Federal Government Role," October 1995.

The high private returns play an *important role in the global marketplace* where a world-class *science and technology infrastructure* is seen as a *national asset and attracts investment capital* out of the globally available capital stream. Proximity to such an infrastructure provides competitive advantage to companies.

Globalisation offers a wealth of opportunities to Pakistan. These opportunities will pass us by if we are not ready as a nation to utilise them. The "*capacity to innovate*" is the ultimate source of national productivity. All nations are competing on the same playing field and as the Center for Strategic and International Studies (CSIS) Report on Innovation and Competitiveness concluded, *a scientific infrastructure is necessary to create the national capacity to innovate*. It recommended a national strategy for the USA – a country which is millions of miles ahead of Pakistan in terms of having a

<sup>7</sup> White House Council of Economic Advisors – "Supporting Research and Development to Promote Economic Growth: The Federal Government’s Role" October 1995.

dynamic science and technology infrastructure. If the USA needs a strategy, then Pakistan certainly needs one; but more importantly, its effective implementation. This means that science has to be properly integrated into the social and economic fabric of society to create the “*national capacity to innovate*.” This “*capacity*” is fundamental to Pakistan’s sustained economic revival and thus for enabling it to address the acute security and poverty reduction challenges that it is facing. Some US estimates ascribe to innovation more than half of the long-term rate of increase in US GNP. A similar level of contribution to Pakistan’s GNP, *if we can achieve it*, would double its growth rate. The “*capacity to innovate*” *comes from the infrastructure which connects scientists, technologists, industry, academia and government, and integrates this diversity into an organic whole. Such an asset/infrastructure does not replicate easily and so is relatively immobile across national boundaries.* Global capital is likely to come to the nation which has such an asset/infrastructure. It is not by accident that global capital flows to Silicon Valley, Bangalore, Boston, Virginia, Singapore and China but not to Pakistan or Sri Lanka. The integration requires a complex managerial undertaking at the Pakistan level:

- **A policy environment that fosters and rewards innovation (Compensation; scientific values)**
- **Ample support from the government for a science and technology infrastructure (Financing the science infrastructure)**
- **A national education system which produces competent scientific and engineering capacity as well as imparts scientific “values” (Financing; scientific values)**
- **Collaboration networks that link R&D performers and users (Infrastructure; scientific values)**
- **An open trading system which promotes two-way flow of capital and talent (International links to R&D)**

Does Pakistan have such a S&T infrastructure? The appropriate scientific values? The scientific capacity? It does **not**.

#### **IV. Pakistan’s Scientific and Managerial Capability**

Pakistan’s scientists/engineers population is about 480,000. Of those, *only 14,000, or less than 3% of the total, are engaged in research and development (R&D).* This translates to *96 scientists/engineers per million*

people. In comparison, *India has 300, Korea 2,600, USA 3,750 and Japan 6,300*. That is, Japan's scientific and engineering capability, normalised by population size, is about 60 times that of Pakistan, and Korea's is thirty-fold higher. Pakistan has only 2,500 Ph.Ds working in science and technology and, of these, only 170 are active in scientific work. *About 60% of these active scientists are retiring in two to three years and no replenishment of this capacity is taking place* (Figures 7, 8).

**Figure 7: Comparative Scientific and Creative Capability**

Country	Scientists & Engineers in R&D per million people (1995)	High Technology Exports as % of Manufacturing Exports (1997)	Average Annual Growth of exports in Goods & Services (1990-1998)	Number of patent applications filed in 1996	
				Residents	Non-Residents
China	537	21	14.9	11,698	41,016
India	300	11	12.4	1,660	6,632
Indonesia	180	20	8.6	40	3,957
Korea	2,640	39	15.7	68,446	45,548
Malaysia	85	67	13.2	141	3,911
Pakistan	96	4	3.2	16	782
USA	3,730	44	8.1	111,883	111,536
Japan	6,310	38	3.9	340,861	60,390

**Source:** World Bank 1998/99 World Development Report, World Intellectual Property Organization (1998/99).

**Figure 8: Pakistan - Science and Technology (S&T) Capacity**

Total number of high level S&T manpower (1995)	480,000
S&T human resource base as % of total population	0.4%
S&T Ph.Ds (1998)	2,486
S&T Ph.Ds as % of total S&T manpower	0.52%
Total S&T faculty in Pakistan's 37 universities	4,400
75% of the Ph.Ds are in five fields:	
Agriculture	648
Chemistry	501
Biology	373
Physics	227
Mathematics	110
R&D scientists & engineers per million population	96
% of GNP spent on R&D	0.2%
Per capita R&D expenditure (1998)	
Pakistan	US\$0.65
India	US\$2.40
China	US\$2.90
Korea	US\$285
Japan	US\$595
Pakistan's R&D <u>not</u> integrated with production	
Share of Pakistan in the world's mainstream journals	0.063%

**Source:** Science & Technology Indicators for Pakistan – Pakistan Council for Science & Technology, Pakistan, 1999.

The above was a quantitative measure of scientific capability. For making a “*quality of capability*” estimate, we could use the “*number of scientific journal articles published*” or “*number of patent applications*” as proxy. Pakistan’s share of “mainstream science journal articles” was 0.06%. This rate is one-fourth of Turkey’s; one-tenth of Brazil’s; one-thirtieth of India’s (see Figure 9). Pakistan’s rate of patent applications was 800 in 1996 compared to 8,000 for India and over 100,000 for Korea. Figure 10 illustrates the exponential growth in scientific publications since the Industrial Revolution – Pakistan is neither participating as a contributor nor as a beneficiary of this exponentially growing river of R&D knowledge. This comparative information indicates the extent of the “quantitative” and

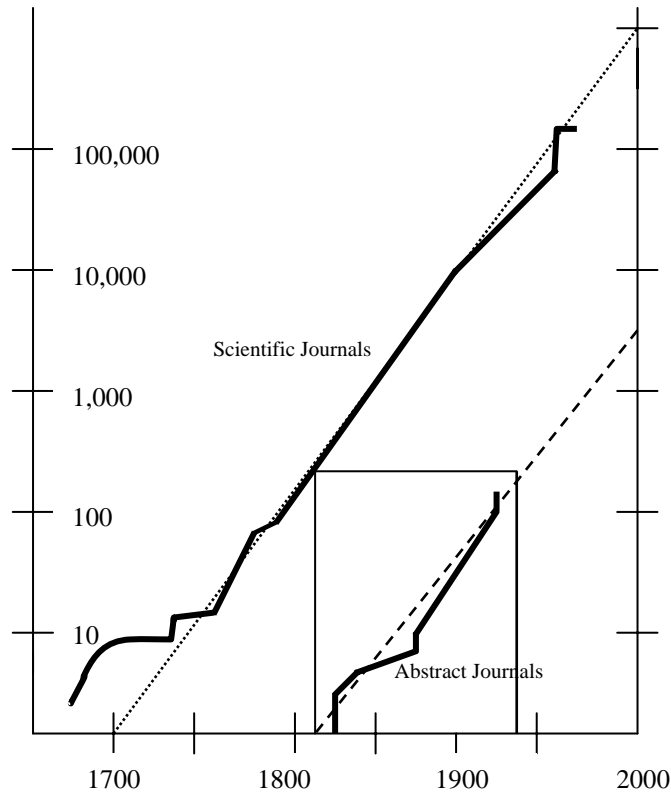
“qualitative” effort that Pakistan has to make to join the ranks of those who have succeeded in the 20<sup>th</sup> and are likely to retain that lead in the 21<sup>st</sup> century.

**Figure 9: Share of Mainstream Science Journals**

<b>Articles (% of total for all nations) (1994)</b>	
<b>Country</b>	<b>% of Total</b>
US	30.817
Japan	8.244
UK	7.924
Germany	7.184
France	5.653
Canada	4.302
Russia	4.092
India	1.643
China	1.339
Brazil	0.646
S. Korea	0.546
Egypt	0.28
Turkey	0.243
Saudi Arabia	0.129
<b>Pakistan</b>	<b>0.063</b>
Yemen	0.008

**Source:** Science Citation Index, 1994

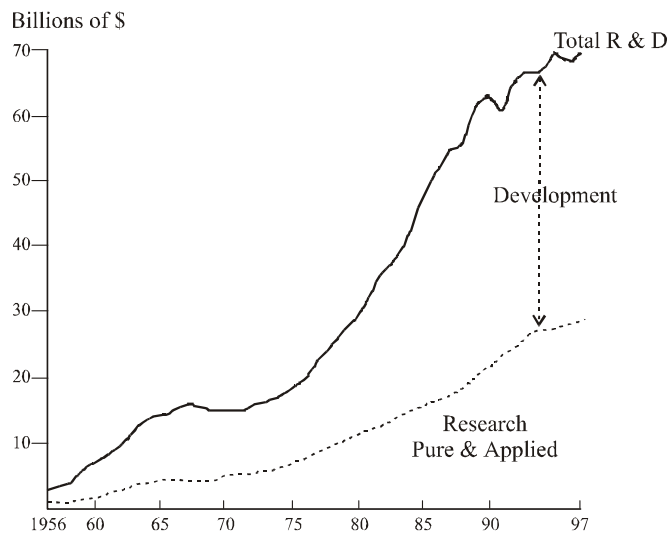
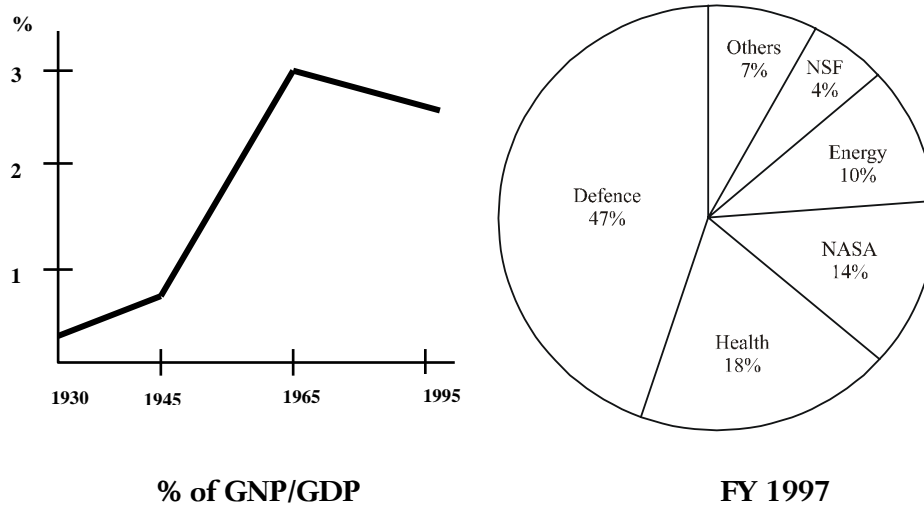
**Figure 10: Growth of Scientific Journals: The scientific enterprise has grown exponentially over the three centuries following the Industrial Revolution.**



**Source:** *Science and Technology in World History* by McClellan III & Harold Dorn, p 361 John Hopkins Press, 1999.

The lesson from the above is that the science-content of all products and processes is increasing in the developed and emerging economies. The more science a new product or process has, the more it is likely to be competitive in the global market place. Ninety percent of the world research capability is concentrated in about 35 countries with about 25% of world population. The R&D expenditures in these countries range from 2.3% of GNP (U.K.) to 3.1% of GNP (Japan). The US spends 2.7% on R&D. Figure 12 presents a time series picture of R&D and its recent sectoral distribution in the US.

**Figure 11: The level of US government support for science and scientific research has risen dramatically since the 1940s, both in terms of the number of dollars and relative to the overall federal budget.**



**Source:** *Science & Technology in World History* by McClellan III, James-E & Harold Dorn, John Hopkins Press, 1999

In comparison, Pakistan spends about 0.2% (Figure 8), hence the imperative necessity for Pakistan to design an effective strategy to rapidly bring about an increase in its domestic scientific capability on which to seek

sustainable development. Without such an increase in its domestic scientific capability Pakistan will continue to be technologically, and hence economically and politically, dependent. This is lucidly illustrated in the two vicious circles of Technological and Economic Dependence (Figures 2 & 3).

The conclusion is that Pakistan needs to take a *crash approach* to the *creation of a functioning domestic scientific community* to act as an *intelligent conduit from the international scientific community to the domestic producers*. The absorption by the domestic scientific community will include sifting ideas for relevance and transformation of these ideas in conjunction with the domestic engineering community into appropriate technology for national development of agriculture, industry, services and exports. The reverse flow of problems from the producers to the scientific community would complete the feedback loop and keep this network of functions dynamically relevant. The creation and maintenance of a domestic scientific community will require a responsive education system which produces the needed technical skills as well as the creativity which facilitates innovation and thus economic growth.

## V. Scientific Infrastructure and Scientific Values

In order to successfully compete in the next millennium, Pakistan has to introduce a world class level of science and mathematical<sup>8</sup> education (Figure 12) in the schools and universities of Pakistan. It will not be possible to become a high-income society without an educated and scientifically literate population. Of course, scientific or general literacy by themselves cannot guarantee transition of Pakistan's economy to higher levels of income and development. *A collective national will is also needed to ensure availability of the enabling environment, i.e. science infrastructure and scientific values*. This enabling environment will not be created overnight. Thus, we must begin now to create the needed infrastructure and to acquire and practise scientific values – which are similar to Islamic values. To illustrate this congruence let me share with you a brief review<sup>9</sup> of the role that science and scientific values have played in creating and sustaining the Islamic civilization.

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<sup>8</sup> It is revealing to observe that in a proficiency test in mathematics and science of 13 year olds, East Asian countries ranked in the top three. USA was fifteenth. Pakistan was not on the screen.

<sup>9</sup> From Ayub Omayya: [The Rise and Decline of Science in Islam](#) (1998).



**Figure 12: Proficiency Test Scores in Mathematics and Science for 13 years old pupils (1991)**

Country	Average days' instruction per year	Mathematics % correct	Science % correct
China	251	80	67
Korea	222	73	78
Taiwan	222	73	76
France	174	64	69
Italy	204	64	70
Canada	188	62	69
England	192	61	69
USA	178	55	67

**Source:** International Council of Scientific Unions (ICSU) in 'ICSUS' Role in International Science

The period 750 A.D. to 1100 A.D. has been described by Dr. Abdus Salam as the Golden Age of Science in Islam: it was *in this period that the foundations of the experimental method were laid for humankind*. Ibn-al-Haitham was a great Muslim physicist. In his work on optics he anticipated Fermat's Principle of Least Time by many centuries. Roger Bacon's opus majus Part V is essentially a copy of Ibn-al-Haitham's optics. It is pertinent to note Bacon's remark to his contemporaries that he "*never wearied of declaring that a knowledge of Arabic and Arabic science was the only way to true knowledge.*"

Within a century or so after al-Biruni, Ibn-al-Haitham, Ibn-Sina, first class science petered out in the Islamic world. The world went into the dark ages from which it began to get revived five centuries later by the famous names of modern science: Galileo, Copernicus, Newton. Why did science in the Islamic civilization die? Dr. Abdus Salam explained the decline in terms of *increasing lack of tolerance for innovation, and isolation in the sciences*. Lack of tolerance for innovation began to develop from the 12<sup>th</sup> century onward. This process led to *a loss of scientific values* and produced "*isolation of the sciences.*" A lucid example of apathy toward innovation is a quotation from Ibn Khaldun at the end of the 14<sup>th</sup> century:

**"We have heard that on the northern shores of the Mediterranean, there is a great cultivation of philosophical sciences. They are said to be studied there again, and to be taught in numerous classes.**

**Existing systematic expositions of them are said to be comprehensive, the people who know them numerous, and the students of them very many... Allah knows better what exists there... But it is clear that the problems of physics are of no importance for us in our religious affairs. Therefore, we must leave them alone."**

Bronowski defines sciences as "*the organization of our knowledge in such a way that it commands more of the hidden potential in nature.*" Thus the "*values*" science promotes are: *rationality, creativity, the search for truth, openness, tolerance for disagreement, respect for evidence, and for dialogue. These scientific values are identical to the core values of Islam, i.e. tolerance, dialogue, search for truth, honesty and fairness.* As we have seen in the brief historical review of Islamic civilizations the non-practice of these values had strongly contributed to their decline. This *convergence of the "values" of science and Islam thus, is an additional reason for Pakistan to promote science as a core instrument in the development process.* This will force us to protect independence of inquiry through legal and moral safeguards. *Free speech, free thought, tolerance, arbitration through evidence* are all *values* worth promoting and defending for a "*good society,*" not just for "*good science.*"

## **VI. Recommendations**

The Government has the primary responsibility in creating the scientific infrastructure and maintaining a climate where scientific values can be practised. But the domestic scientific community has an equal, if not greater, responsibility to demand the infrastructure and promote, protect, and practise scientific values. In the process of building the infrastructure we must not forget that Pakistan has a diaspora which has immediately tappable scientific capacity. These scientists may live abroad, but in the first generation, remain culturally tied to Pakistan. Most of them retain a strong sense of responsibility for fellow citizens back home. All scientific talent that we can tap for the short or long term will have to be mobilised. Further we should also remember the basic universality of science. The intrinsic nature of science is universal, its success depends on cooperation, interaction and exchange, much of which goes beyond national boundaries. The community of scientists is international, the population of Pakistani Scientists in the diaspora should be considered part of the community and not as aliens. This is a long journey but it is a necessary one for our sustainability.

The Government under the leadership of the Minister of Science and Technology has begun this journey. But the *crisis in science* needs *prior attention* over our *economic crisis* because *the former is a solution to the*

*latter. Awareness of this crisis in science and the role science can play to ameliorate the economic crisis is, however, not sufficiently widespread in the government and society. This must change. Five actions comprise the process through which awareness levels can be raised and adequate implementation processes initiated.*

- **Creation of a domestic scientific community which has adequate scientific expertise to be able to absorb and adopt imported technology.**
- **Develop science-based technology for the future.**
- ***Action: Try to reach one quarter of the current Korean level of scientists/engineers per million people, i.e. from the present level of 100 to 500 per million people, in ten years from now.***
- **Re-orientation of science and mathematics education from primary to university levels to make it relevant for the needs of the 21<sup>st</sup> century.**  
***Action: To begin now and complete in five years from now.***
- **Re-appraisal and expansion of current R&D programmes in universities, R&D agencies, and industry to accomplish the first two objectives above.**  
***Action: To increase R&D expenditures from 0.2% of GNP to 1% by ten years from now.***
- **Create institutional mechanisms to increase interaction between industry, policy makers and the domestic scientific community.**  
***Action: Begin within the next six months and continue.***

These are ambitious targets but achievable if there is national will. The monetary cost of accomplishing this may appear high but the returns are higher – recall that social rates of return from effective R&D exceed 50%. Also, the cost of not doing what is needed to accomplish the above or similar targets will be unacceptably high, i.e. continuance of poverty for millions and continuing dependence on other nations.

Let me close by quoting Dr. Abdus Salam on the necessity and importance of a “*meaningful commitment towards science.*”

**“By and large, there has been scant realization in the South that science can be applied to development as, for example, there was at**

**the time of the Meiji Restoration around 1870 when Japan's emperor took five Oaths. One of the oaths set out a National Policy toward science: 'Knowledge will be sought and acquired from any source with all means at our disposal for the greatness and security of Japan.'**

**For the South the consequences of this lack of commitment to science have been – few research centers for applied sciences, sub-critical and isolated communities of scientists (with scant provision for infrastructure, for scientific literature and international contacts), weakness in scientific education and little expenditure on R&D.”**

This describes current Pakistan quite accurately – but we must change this through the above actions and a collective national will.

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## ***Book Review***

***Imtiaz Alvi, The Informal Sector In Urban Economy: Low Income Housing In Lahore***, OUP, Karachi, 1997.pps 323. Price Rs. (Pakistani) 535/-.

Cities play an increasingly important role in the economic standing of nations. Urban areas, with their anonymity and fast pace, can be non-conducive to societal cooperation. Social capital and trust are more difficult to develop and sustain in large groups. In many cases, interactions between parties are not repeated and therefore there is no incentive to develop reciprocal relations.

In urban settings, people tend to cluster together in small communities and networks of support, but trust and goodwill for those outside immediate groups is minimal. High levels of intra-group social capital and very little inter-group social capital (referred to as "bridging social capital") may have profound effects on inequality, private sector development, government and public welfare.

The low-income population of Lahore did not have access to urban services and housing at affordable prices because of high urban land prices, ineffective planning, inadequate supply of serviced land, and lack of access to established financial markets. This resulted in severe overcrowding and subsequent deterioration of the housing stock.

The book focuses on the need for strengthening the capacity of local institutions to prepare and implement integrated urban development programmes to arrest the decay in urban living conditions. It also suggests the ways to improve municipal services and to develop strategies to deliver services and shelter to the urban poor. The author has also highlighted the issue of delivering services and shelter to the urban poor.

Lack of housing remains one of the most urgent and formidable problems confronting developing nations today. Despite various efforts to tackle the issue, the problem remains unsolved. Considering the high population growth rate in Pakistan, the problem is likely to get more acute in the near future. The time is therefore ripe to review the policies for housing for the urban poor, to evaluate the current state of knowledge. This book seeks to clarify the scope and limitation of self-help housing both as a concept and as a practice and to contribute to the current state of knowledge by presenting a case study of Lahore.

The book under discussion is a very laudable effort on a critical topic especially considering the fact that Pakistan is a developing economy subject to such problems. The author takes into consideration the various models used by different organisations in order to highlight the major hindrances to development in developing countries.

The writer has supported his arguments and points of view with the extensive use of mathematical data in the form of statistical figures depicting the various populations and housing trends in Lahore.

The Informal Sector in the Urban Economy is a critical in depth and revealing study of the development models applied in the developing countries since the Second World War in order to combat underdevelopment, poverty and homelessness.

The recent formal-informal sector approach to development is the main focus of this analytical work. The book attempts to demystify the role and vitality of this development approach by investigating the urban land market, construction materials market, and construction labour market in the urban economy.

It examines the politics of development and shelter policies and the role of the various interest groups in Pakistan since its foundation in 1947. The effects of these policies and the real beneficiaries, in the face of the growing poverty and homelessness in general and in Lahore in particular, are discussed.

The book clarifies the philosophical and practical limitations of the popular development model and cautions against romanticising it as the prescription for all the developing countries.

It goes on to describe the historical and geographical background of the case study. The chapter investigates the nature and extent of structural imbalances and the poverty that prevails in Lahore. The evolution in the city over the last 2000 years has also been described. The effects of the political and economics changes on the economic, social and physical fabric of the city are discussed.

The issues of squatter areas in the city and the low income housing policies adopted by the state are analysed in a broader social, political and economic context. The chapter investigates the increasing importance given to the issue of low income housing by the Pakistani government and



describes how such problems of housing the poor have become an important feature of national politics that no future Pakistani government can ignore.

Alvi reveals that squatting is not an isolated process, which continues unabated. It shows that squatting activity influences many individuals, groups and political parties. The investigation suggests that squatter settlements gradually become a sub sector of the housing market. Despite the dubious status of land in the squatter settlements, both houses and land are sold on the market. The functioning of this market is compared with the conventional housing market in Lahore.

Lastly he investigates the use of building materials, which are used for house building in the squatter settlements of Lahore. The study shows that many of the assumptions held by academics and popular conceptions about the use of construction materials by the poor are unfounded in the case of Lahore. The survey results suggest that in the squatter settlement surveyed, the use of the second hand building materials is nominal and the majority of the households use new building materials. The sources of purchase for these materials are also examined. Findings concerned with the use of building materials and the sources of procurement of the materials in the squatter settlements are compared with similar processes taking place in the conventional areas surveyed. The comparison reveals that squatter settlements are an integral part of the construction sector and the important consumption points for the building materials produced and traded by the capitalist and petty commodity modes of production.

Though the author supports his assertions with rational use of statistical data occasionally we find that he finds it hard to keep the interest of the reader intact. Too much use of statistical inferences as well as facts and figures makes the material very unappealing to the reader at times. Besides this the author has used some of those tried and tested models that have resulted in little success earlier. The use of tried models takes away some of the gloss of this book. The fervour and enthusiasm created by the author at the start of the book somehow loses its pitch somewhere midway and especially at the end of the book where the author ends on a very cautious note.

However Alvi has taken a very bold stance in evaluating modern urban problems and their solutions. Overall a good book for students, avid readers and intellectuals and teachers by an author who holds a Ph.D in development planning from the University of Birmingham and has been associated with monitoring, assessment and planning for the National Rural

Support Programme (NRSP). The author at present is the Deputy Programme Director, Programme Support Unit at IUCN, Pakistan.

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**Nabeel Ashraf**  
**Walced Mohsin**

## ***Book Review***

**Giles Mohan, Ed Brown, Bob Milward and Alfred B. Zack-Williams, *Structural Adjustment, Theory, practice and impacts*, Routledge, London and New York, 2000, 215 pps, Price not mentioned.**

This book touches on almost each and every aspect of the extremely topical subject of structural adjustment, delving into the whys and wherefores, the rights and wrongs of the issue. Despite the somewhat technical nature of the subject, it reads more like a narrative. Yet because to my mind it is virtually a masterpiece and one of its kind, it should in fact be read in bits and pieces rather than in one go.

It is in essence a critique of global capital, a need of the hour as it were. The authors, spokesmen for the Third World in the main, theorise and analyse Structural Adjustment Programmes (SAPs) from all angles of the spectrum. The punch line is that unlike orthodox analysis, the authors sharing common concerns, analyse the ways in which developing countries have been consistently tied into the world economy on unequal terms. Not simply do they critique the neo-liberal policy package, but offer alternatives to the dilemmas of underdevelopment keeping in view the spatial specificity of SAPs. There is a dire need in other words of a counter-hegemonic project to globalising capitalism.

The book has three parts, the first of which examines the history of the world economy to highlight how developing countries were 'stifled' or 'hemmed in' and further more, within this matrix, swallowing the neo-liberal medicine was an inevitability. It also goes in depth into the neo-liberal model that underlies the adjustment process. The next part looks at the impacts of SAPs and is sub-divided into economic, social, political and environmental considerations. The final part scrutinises the alternatives on hold to adjustment.

In interpreting the rise of neo-liberalism, the authors state that with the collapse of the socialist alternative and the crisis within the more interventionist Keynesian approaches, a form of consensus emerged (known usually as the Washington consensus) within mainstream economics that market-led strategies of neo-liberalism are the most viable and suitable form of economic management. And to some, this is but a global imperialistic strategy to shackle developing countries.

Discussing the nuts and bolts of what structural adjustment actually is, to quote: 'Essentially, structural adjustment is the process by which the

IMF and the World Bank base their lending to underdeveloped economies on certain conditions, pre-determined by these institutions....More specifically, it refers to the process whereby the economies of the Third World are being reshaped to be more market oriented.' (p 25).

A technical section on the neo-classical paradigm is presented and the policy measures that go cheek by jowl with this model. As the authors quite aptly point out, advocating free markets, free trade and minimal government intervention does not by any yardstick necessarily lead to economic growth or development, because the economy is far more complex than this simplistic solution warrants.

The following part discusses all angles of neo-liberal theory, including monetary policy, trade policy, prices and market deregulation, the labour market, the financial market and privatisation. But perhaps the most profound and meaningful part of the book is the section on the social consequences of structural adjustment. As the author says, there are invariably differential impacts on various sectors of society, with there being winners and losers at the end of the day. 'The first victims of adjustment policies are usually daily-wage workers, who are structured out of employment and rendered as sacrificial lambs at the altar of SAPs'. (p. 60).

How the question of poverty alleviation was not a major concern to the 'first wave' of adjusters, and that the social dimension to adjustment only took central place in the adjustment agenda until after the publication of UNICEF's report, *Adjustment with a Human Face* in 1987, is talked about. The author categorically states that the net result of these policies is an enormous rise in the cost of living. The 'new poor' are created by virtue of the fact that there are sacrifices and considerable suffering in the short run particularly for those who are dependent on public sector employment or on fixed incomes. The UNICEF report that virtually revolutionised donor thinking and policies, called for certain measures to protect vulnerable groups. These include more expansionary and less deflationary macro-economic policies, prioritising policies in favour of the poor and monitoring the human situation, especially living standards, health and nutrition of the poor.

The political impacts of adjustment are then tackled, and the state market debate touched upon, stating that state intervention has been attacked by neo-liberals who see it as an impediment to efficient markets. 'They take a zero-sum, either/or view of political economy which is simplistic and short-sighted', says the author. In the chapter on alternatives to adjustment, the concern is in the main with alternatives *within*

adjustment, rather than alternatives *to* adjustment. One plausible suggestion is for adjusting countries to group together in order to gain more favourable terms with international financial institutions. The idea behind this is to get assistance with fewer conditions attached. Much is required to make the policies more sensitive to individual needs and regional diversity. Taking one somewhat by surprise, the author states that while there has been a shift in emphasis in the Banks' rhetoric and a modicum of recognition of the complex and troubling social impacts of SAPs, poverty is even then not a central issue in the overall rationale for adjustment in the Bank's approach.

Then come more radical alternatives to the neo-liberal model that view fundamental transformations within the functioning of the international economy and alternative ideas on national economic management. The *Weltanschauung* of the left today is glossed over and how their current thinking is more or less opposed to traditional state-led strategies. The book concludes on certain prescriptions to extricate developing countries from the entanglements of structural adjustment and the problems that go with them. For instance, there is a need, it says, for 'the re-emergence of a more fully independent group of 'organic intellectuals' much more closely linked to popular majorities and their struggles'. Couldn't be better put!

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