THE LAHORE JOURNAL OF ECONOMICS

Lahore School of Economics

Volume 6, No.1 **Jan-June, 2001**

THE LAHORE JOURNAL OF ECONOMICS

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Publisher : Lahore School of Economics, Lahore, Pakistan.

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Capital Flows, Trade in Widgets and the Exchange Rate

Irfan ul Haque*

The economics profession has recently started to give increased recognition to the need for restraining capital movements and exercising greater care in opening up capital accounts in developing countries.[1] This is a significant development, for, not long ago, unfettered flow of capital across countries was being hailed as a means for improving global efficiency and promoting world welfare. At its annual meetings in 1997, the IMF had pushed to incorporate capital account convertibility into its Articles of Agreement. However, the gravity of the East Asian crisis drove home the dangers inherent in premature deregulation of financial markets and freeing of capital movements, at least as far as developing countries are concerned.

The proponents of caution in the opening up of capital accounts base their case essentially on the imperfections of capital markets or market failures. In the presence of asymmetric information between borrowers and lenders, moral hazard in managing other people's money, and situations where the risk facing an individual decision-maker is lower than the social risk, a free market is unlikely to yield optimal outcomes. As Bhagwati (1998) has put it, trade in widgets is not the same thing as free movement of capital. The latter suffers from "panics and manias" which can suddenly and quickly more than offset any efficiency gains brought about by the free flow of capital. Bhagwati notes:

"Each time a crisis related to capital inflows hits a country, it typically goes through the wringer. The debt crisis of the 1980s cost South America a decade of growth. The Mexicans, who were vastly overexposed through short-term inflows, were devastated in 1994. The Asian economies of Thailand, Indonesia, and South Korea, all heavily burdened with short-term debt, went into a tailspin ... drastically lowering their growth rates." (p. 8)

This note attempts to extend the case for moving slowly and prudently also to trade liberalisation. It makes basically three points. First, it attempts to show that for both ideological and economic reasons, the

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[1] The list of mainstream economists subscribing to this view is long and impressive. They include Bhagwati (1998), Krugman (1998), Sachs (1998), Stiglitz (1998), and Rodrik (1998), among others.

opening up of the capital account and the freeing of capital movements are in fact intimately linked to the measures to liberalise trade. Thus, it may be difficult to institute a regime of free trade while the capital account is closely regulated. Indeed, and this is the second point, market imperfections that are put forward as a reason for controlling capital movements and keeping the capital account closed also provide grounds for trade policy interventions. And, third, whether it is trade liberalisation or freeing capital movements, the villain in the piece is the exchange rate management.

The benefits that open trade regimes and free capital mobility promise are more likely to be realised under stable exchange rates, but they also create conditions where exchange rates tend to be unstable. There is evidence that within a liberal trading environment, trade deficits rise, external borrowing is increased, and exchange rates become vulnerable, at least as far as developing countries are concerned. It is typically the fear of impending devaluation that triggers capital outflows, which ultimately leads to currency crises. Unless some satisfactory means are found to stabilise exchange rates, moves towards market liberalisation and deregulation will continue to threaten economic stability and growth. Whether stabilising exchange rates is feasible or desirable is, therefore, an important issue to consider in the redesign of the international financial system. The following three sections elaborate on these points. The final section summarises the conclusions.

Mutual Dependence of Trade and Capital Account Liberalisation

Over the last two decades, market liberalism has swept virtually the entire world. Government interventions and regulations that hinder the free functioning of the market have come under attack. The state has come to be regarded as generally unfit to own or manage industrial enterprises or even public utilities. Market signals, undistorted by public policy, are viewed as the supreme disciplining force to guide consumers and producers towards optimal choices. The removal of controls and regulations that interfere with the market's free functioning and privatisation of public enterprises have become prominent in the political agenda of industrial as well as many developing countries. Market reforms have been central to the availability of financing from the international financial institutions, notably, the IMF and the World Bank.

Thus, the moves to liberalise trade and open up capital accounts in developing countries can be seen to be driven by the same political and ideological forces. In a number of countries, in fact, the deregulation of financial markets and the removal of capital controls were pursued more aggressively than trade liberalisation simply because asset-owners, who exercise considerable influence on policy, benefited from them. While trade

liberalisation threatens the rents that industry enjoys from protection, free capital mobility makes it easier to spirit away financial gains to foreign sanctuaries. In Pakistan, for example, local industries resisted (in many cases, successfully) the attempts at trade liberalisation, but the removal of restrictions over rupee convertibility and the opening of foreign-currency accounts remained highly popular.[2]

The ideological shift aside, there are also solid economic reasons why policies governing trade cannot be sharply separated from those governing capital movements. In theory, the removal of trade barriers is expected to yield significant efficiency gains for it allows the factors of production to get reallocated to fields of activity where the country has a comparative advantage. The argument runs basically along the following lines. Tariffs and other forms of trade restrictions, by raising domestic prices of traded products, discourage their import and encourage their domestic production. However, the impact is not confined just to imports. Because import restrictions allow the country to maintain an appreciated currency, they tend also to discourage exports.

This line of reasoning leads to a powerful economic proposition: protection, because it tends to reduce both imports and exports, is not particularly effective in lowering trade deficits. The actual experience indeed shows that import barriers by themselves are rarely sufficient to overcome balance of payments problems. They often need to be supplemented by foreign currency controls and discretionary allocation of foreign exchange, as was the case in industrial countries during the post-war period and which remain necessary in a number of developing countries. Thus, trade liberalisation programmes normally include dismantling of exchange controls, which has direct consequences for the management of the capital account.

But even where exchange controls are not a factor, there is another mechanism through which the capital account is affected. The proposition that trade policy may not affect the trade balance is contingent on the exchange rate being allowed to adjust appropriately to changes in import barriers. The removal of trade barriers would obviously increase imports, but this is precisely what is required to make domestic industry internationally competitive. However, exports can also be expected to rise if the currency depreciates to compensate for the removal of trade barriers.

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[2] Foreign currency accounts were popular also because the government promised not to ask any questions as to the source of money. Thus, people with "black money" could convert them into US dollars at the kerb market, and deposit them into foreign currency accounts. After the explosion of the nuclear bomb in May 1998, these accounts were, however, frozen. They could thereafter only be converted into Pak rupees at the specified official rate.

Trade liberalisation programmes do, however, anticipate temporary rise in trade deficits as the economy adjusts to the new situation, which provides the rationale for lending by the international financial institutions in support of the policy reforms.[3]

There are, however, practical and theoretical difficulties in accepting the notion that the trade balance will remain more or less unaffected by the removal of trade barriers because of exchange rate adjustments. The actual experience in developing countries has been one of generally rising and persisting trade deficits consequent to trade liberalisation. UNCTAD (1999) reports a general rise in trade deficits as a proportion of GDP even as economic growth in developing countries decelerated over the last decade, a period marked by a general lowering of trade barriers by the developing countries. This trend held across different regions and countries. Mexico, for example, experienced dramatically rising imports, without commensurate increase in exports, after trade liberalisation both during the late 1970s and late 1980s. Thailand, Indonesia, Ghana, and many other countries, also experienced a sharp worsening of the trade balance.

Why exports fail to rise, contrary to what the theory predicts, has several explanations. For one thing, it is generally a mistake to hold price as the principal reason for stagnant export earnings. Exchange rate can certainly be a handicap for exporters, but it is not usually the only, or even the most important factor discouraging export activities. More fundamental reasons tend to be poor physical infrastructure, difficulties in obtaining trade finance, neglected and obsolete capital equipment, lack of skilled manpower and technological capabilities, and so on. A depreciated exchange rate, for example, can hardly compensate for the lack of transportation or electricity. In such situations, "getting the prices right" is a very ambiguous, if not meaningless, slogan. It is rather recently that the World Bank has started to be concerned about the supply-side hindrances to exports.

But even if such problems did not exist, exchange rate changes may not be sufficient to bring about the required adjustment in the trade balance. A devaluation, if it is to work, must shift the relative prices in favour of traded goods and their domestic substitutes, the so-called "tradables", and against sectors which normally are not open to trade, the "nontradables".[4] There is, however, no certainty that such a price shift

[3] International financial institutions have had to face the awkward question of why they need to provide finance in support of policy reforms that are supposed to be in the interest of the country concerned.

[4] The distinction between tradables and nontradables in reality is not sharp. It is more accurate to rank economic activities on the basis of the ease of their being internationally traded. The dramatic reduction in transportation and communication costs over time has

would in fact occur or be sustained over a period of time. If nontradables are more capital intensive than tradables, a devaluation can have a perverse effect on relative prices, i.e., prices of nontradables could rise relative to tradables (Rahim 1998). In any case, if labour has the bargaining power, it may undo the impact of a devaluation by not accepting an erosion of real wages.

A more crucial point, however, is that the shift in relative prices by itself is not sufficient to bring about an improvement in the trade balance. The reason is that while the price shift in favour of tradables encourages domestic production and discourages domestic consumption of the tradables, it has precisely the opposite impact on the nontradables. This creates an untenable situation, for, while foreign trade can make up the difference between the demand and supply of tradables, no such possibility exists in the case of the nontradables. The market for nontradables, by definition, requires that domestic demand equal domestic supply. The equilibrium can then only be restored if either the overall economic activity is reduced so that the excess demand for the nontradables is reduced through the income effect, or prices of the nontradables are allowed to rise to choke off the excess demand. In the first case, there is an overall reduction in domestic economic activity, though the trade balance may improve. An improvement, however, could not materialise if prices of nontradables rise, undoing the initial shift in relative prices. The net effect in this case would simply be an acceleration of inflation.

It is for all these reasons, countries resorting to devaluation are usually required to adopt restrictive fiscal and monetary policies (what the IMF calls "demand management policies"). Demand compressing deflationary measures may be justified when an economy is over-heated, with a tight labour market and constrained physical productive capacity. But in situations where the economy has experienced declining output or stagnation—as has been the case in many developing countries and transition economies—policies requiring further economic contraction can hardly be considered optimal. They have been found time and again to contribute to economic instability.

The alternative of allowing inflation to accelerate may also not be very attractive to governments that have brought down inflation with difficulty and wish to keep it low. Mexico, during the period leading up to the 1994 financial crisis, faced a common policy dilemma. Long before the actual crisis, it had become apparent that Mexico's large trade deficit

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led to international trade in an increasing number of goods and services, thus reducing the size of what could be considered as purely domestic activities.

(amounting to 6-8 per cent of GDP) could not be sustained indefinitely. The financial crisis was blamed on the government's failure to devalue the peso early enough. However, the government was reluctant to risk fuelling inflation or to allow a decline in economic activity. Having been applauded by the international financial community for bringing down the inflation, the government feared adverse investor reaction if signs of renewed inflation reappeared. At the same time, and partly because of the fight against inflation, there was little scope for demand compression because the economy had shown little vigour over the years. Private fixed investment had remained hesitant and economic growth at best modest.[5]

The question then arises as to how governments should cope with enlarged trade deficits if they cannot, for one or another reason, rely on the exchange rate. Foreign exchange reserves are of course finite, and can only be of temporary help in dealing with balance of payments problems. This then leaves borrowing from abroad as the only option. Foreign lending, however, is contingent on several factors, including, of course, the country's creditworthiness. However, in the general atmosphere of market liberalism of the last two decades, an important consideration in both official and private lending has been the borrower's commitment to free-market principles. As noted earlier, the official bilateral and multilateral lenders were eager to see rapid adoption of market reforms, covering trade, capital markets, and privatisation in the developing countries. Private lenders were also happy with these changes because they offered new opportunities for making quick profits, with repatriation of capital and earnings more or less assured, the exchange rate risk notwithstanding.

In short, relaxation of controls on the access to foreign currencies and foreign borrowing becomes necessary when trade liberalisation results in trade deficits that cannot be corrected by means of an exchange rate adjustment. The situation is in some respects analogous to trade within a single country: free movement of goods and services would be inconceivable without a unified financial system that allows trade deficit regions to borrow from trade surplus regions. There are of course limits to borrowing and individual regions of a country can experience "balance of payments" problems if they continue to overspend (as is evident from the experience of different municipalities and states in the United States over the years). The important point, however, is that free trade is difficult if there is no access to credit.

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[5] Although the situation is fundamentally different, the United States too, with its large trade deficit, faces today a dilemma: a depreciation of the dollar could trigger a general loss of confidence, without an assurance that it would improve the country's trade balance.

The Case for Trade Policy Interventions

The basic rationale for trade liberalisation (and free movement of capital)[6] is that it leads to optimal consumer and producer decisions. Price signals, in the absence of government interventions, are held to reflect real costs of goods and factors of production. Guided by free market prices, consumers and producers make choices that, in theory, lead to the so-called Pareto optimal situations, i.e., where no one can be made better off without making someone else worse off. This basic proposition, also called the "fundamental theorem of welfare economics" (Stiglitz 1994), has had an extremely powerful influence in the evolution of mainstream economics. Sure enough, the possibility that market prices may not reflect true social costs has been recognised and has provided the justification for government interventions. But the dominant view over the last two decades has been that market failures are either not very important or not as serious in their economic consequences as government failures. The proponents of free-market principles hold that government action as a remedy is worse than the problem of market failure itself.

There are certainly situations where general opening up of the economy and deregulation can be highly beneficial. In countries where protectionism amounts virtually to autarky—as it did, for example, in the former Soviet Bloc countries—productive inefficiency and internationally non-competitive industries can be a serious problem. It is easy to visualise that the gains from protection at some point begin to fall short of the cost of foregone trade opportunities. Apart from providing goods that the country can either not produce or produce only at a high cost, foreign trade is a major vehicle for the transfer of ideas and technological knowledge. It also provides the competitive pressure for improving productive efficiency.

There are also many countries which, while not autarkic, have poorly designed government controls and regulations that are difficult to enforce. These only hurt productive enterprise and creativity, and encourage expenditure of time, money, and talent to circumventing them. It is also common to find overlapping or redundant restrictions on foreign trade; for example, high import duties coexisting with non-binding import quotas or licensing requirements. In all such situations, deregulation, liberalisation, and general rationalisation of public policy can be expected to enhance productive efficiency. China and India, while retaining considerable control

[6] The proponents of free capital mobility keep conspicuously silent about the benefits from labour mobility. One excuse sometimes offered for this omission is that free capital movement renders the movement of labour unnecessary.

and regulation over trade and capital movements, have benefited from such market liberalising measures and realised accelerated economic growth.

The proponents of free trade, however, tend to oversell the case for trade liberalisation. The fact is that trade policy continues to be widely employed in both industrial and developing countries for all sorts of reasons. There is hardly a country that did not rely on some form of protection to promote its industry. It is now widely acknowledged that trade policy interventions were particularly significant in the development strategies of the East Asian economies, including Japan.[7] This is an important point, for the proponents of trade liberalisation do not generally concede any merit in protection. Anything short of totally free trade implies that some trade policy interventions may indeed be socially beneficial. There was some interest in the early 1980s in constructing formal trade models to define situations where trade policy interventions might indeed be optimal. However, these forays in advance theory (which came to be called "strategic trade theory") were seen to be so threatening to the ruling orthodoxy that the proponents themselves took great pains to stress the limited practical usefulness of their work.[8]

The reasons for continuing support for protectionist measures are both theoretical and practical. For one thing, the neoclassical model of comparative advantage on which the case for free trade rests is highly restrictive. Free trade may not be optimal in situations where the comparative advantage cannot be taken as given (as in the conventional theory), but is being deliberately created in new economic activities through capital accumulation and development of technological capabilities (Haque 1995).

There is extensive literature—ranging from Alexander Hamilton, von Mises, to present-day protagonists—that argues for judicious protection to foster industrial development. Market failures in the promotion of infant industry are widely acknowledged, but there is no meeting of the minds on whether trade restrictions are suitable to deal with these failures. Neoclassical economists argue against protection on grounds that it leads to unproductive "rent-seeking" (i.e., corruption) and that it is more efficient to deal with market failures at their source (see, for example, Bhagwati 1989). In other words, rather than resorting to import controls, it is more efficient

[7] The literature on this is extensive. See, in particular, Wade (1994), Amsden (1989), and the World Bank (1993).

[8] Krugman (1987) reflects well the tension between the economist's firm belief in the virtues of free trade and his theoretical insights that point the other way.

to compensate producers through subsidies to overcome specific problems, such as poor infrastructure or lack of skilled manpower, etc.

Even if market failures are best dealt with at source, it is often not feasible to do so in practice, especially because of the difficulties in raising revenue to pay for subsidies. Transparency in public policy is certainly a worthy goal, but keeping the identity of losers ambiguous is part of practical politics. The political and practical convenience is probably a major reason why virtually all governments adopt trade policy measures to placate domestic interests and penalise foreign suppliers. The argument that such means are economically irrational has obviously not made much impact on, for example, trade restrictions in textiles or agriculture in the industrial countries.

The market failure argument, however, is anchored in the assumption of perfectly competitive markets of neo-classical economics. If markets in reality never conform to the theory, the way they actually function cannot be called a "failure". There are indeed other considerations that necessitate resort to trade policy interventions. The difficulty in managing the balance of payments problems exclusively through exchange rate adjustment has already been discussed. The rules under GATT (now World Trade Organisation) allow for trade policy interventions to overcome balance of payments difficulties. GATT Rule XII, entitled "Restrictions to Safeguard the Balance of Payments", permitted any country to impose import restrictions when the threat to the balance of payments is "imminent" and the country's foreign exchange reserves are "very low". The rules on import restrictions are rather more lenient for developing countries, which can invoke them even when a serious decline in their reserves has not actually occurred but is only foreseen. The rationale is that import restrictions are likely to be less harmful for the world trading environment than the alternative of serious recession brought on by balance of payments problems.

Trade policy interventions also become necessary when producers' economic and financial strength differs widely. Big firms enjoy certain advantages (for example, in distribution costs, conduct of R&D, mobilising finance, advertising, and, not least, in the exercise of political influence) over small firms.[9] The survival in the real world does not so much depend on being efficient in production as on the firm's size. It is usually the bigger firm that takes over the small, rather than the more efficient taking over the less efficient. By virtue of being small, producers in developing countries,

[9] This is not to deny that small firms do enjoy advantages of flexibility and better responsiveness to consumer tastes, and in some lines of economic activity, these are the determinants of success.

therefore, face a significant handicap in competing in the world market over producers in developed countries. When size is the determinant of commercial success, competitive pressure may not yield improved productive efficiency. Just as in the world of sports, competition in world commerce requires some recognition being given to the inherent handicaps that developing countries suffer from.

Predatory pricing—i.e. aggressively lowering prices to oust a competitor—is another consequence associated with the firm size and, despite the legal penalties, is a common phenomenon in industrial countries (Baumol 1993). In developing countries, allegations of predatory pricing by foreign firms that deters the rise of domestic industry are common.[10] This could, in principle, be taken up under the WTO's anti-dumping rules, but legal recourse against the predator is difficult if the injured party cannot be produced in the court. In all such situations, restrictions on imports seem to be the only means available to promote domestic industry.

In conclusion, two further points need to be made. First, just as the opening up of capital account requires satisfaction of prior conditions, there is also a need for careful preparation before a country undertakes trade liberalisation. Certainly, industrial countries have not rushed into trade liberalisation. It has taken a series of rounds of multilateral trade negotiations—spanning a period of nearly half a century—to bring down protection to the current levels. Even so, many products of interest to developing countries continue to face high tariffs and non-tariff barriers (UNCTAD 1999). After three decades of special rules governing trade in textiles, industrial countries feel unable to face unhindered competition from textile suppliers in developing countries. At the same time, agricultural protection remains strong. There has also been frequent use of the so-called voluntary export restraints (VERs) by the United States, EU countries, and others in order to permit their domestic industries to become internationally competitive.

The problems that face developing countries are, of course, much more serious. Stiglitz (1998) observes that there was not sufficient preparation in a number of developing countries and that trade liberalisation was often seen as a goal in itself, rather than a means to an end. In situations where domestic production suffered from basic structural weaknesses of physical infrastructure, lack of technological depth, domestic competitive environment, an increased exposure to foreign competition could not realistically be expected to bring about improvements in

[10] There are also situations where the opposite is the case. To counter a situation where developing countries are being charged a higher price, "anti-collusion duties" have been recommended by some. (See, for example, Whalley 1999)

productive efficiency. On the contrary. In a large number of developing countries, premature trade liberalisation considerably weakened, if not destroyed altogether, the existing industry.

Secondly, there is increasing evidence that, in arguing for free trade, the proponents have tended to exaggerate the benefits from liberalising trade. Several years ago, Dornbusch (1992) noted:

> "Although the discussion of trade policy at times gives the impression that a liberal trade regime can do wonders for a country's economy, and most observers believe firmly that trade reform is beneficial, yet systematic attempts at quantification fail to single out trade policy as a major factor in economic growth" (p. 73).

More recently, Rodrik (1999) reports that there is little or no relationship between growth rates and indicators of openness, i.e., levels of tariff and non-tariff barriers or controls on capital flows.

The practical implications of this empirical conclusion are important. For one thing, it implies that the harm that is alleged to be caused by protectionist policies in developing economies is exaggerated. For another, even if protection may not be the first best policy, it could very well be usefully employed since its costs are not as high as they were earlier believed to be. But it needs to be stressed that acknowledging a role for trade policy does not imply support for beggar-thy-neighbour policies of mounting protection and competitive devaluations of the type that the industrial countries pursued during the inter-war period.

The Exchange Rate Question

If currency markets behaved like ordinary markets, the interaction of demand and supply of currencies could be expected to yield the equilibrium value of the exchange rate. But currency markets are notorious for their volatility. A major reason for it is the dominant role of expectations concerning policies and outcomes not only within the country concerned but also in other countries. The exchange rate is intrinsically what links economic policies of one country with the others'. Governments intervene to stabilise currency values from time to time, but with limited success. In situations of panics and currency runs, such attempts are almost always futile because the available foreign exchange reserves are simply never enough to counter what amounts to speculators' one-way bets. When the chance of a currency depreciating is infinitely greater than its appreciating, speculation against the currency can hardly be contained.

Considering the common experience of currency collapses leading to precipitous declines in national output—most dramatically shown by the East Asian crisis—the costs of exchange rate instability are arguably worse than trade policy interventions. But currency instability and unpredictability also distorts decision-making, not too differently from tariffs and other protectionist devices. The traditional theory of comparative advantage relates strictly to the real economy, where the basis of specialisation in international trade is solely the relative costs of production. The value of currencies as such plays no role. However, the exchange rate, through its impact on real wages, has a differential impact on the profitability of different economic activities. In the specific case of an exchange rate depreciation, the consequent reduction in real wages can be expected to make the relatively labour-intensive sectors more profitable, and vice versa in the case of an appreciation. It is fairly common that relatively moderate exchange rate shifts turn perfectly successful enterprises into loss-making. In other words, exchange rate instability can upset the basis of specialisation and jeopardise the advantage of free trade. Competitive devaluations of the inter-war period were as much to blame for the disruption of international trade as direct trade barriers.

But exchange rate instability also distorts investment decisions across countries. With exchange rates hard to predict, private investors' concern is primarily the financial return, which bears little relation to the real return. This falsifies the basic premise that free international capital flows maximise the return on investment globally, and hence lead to an overall improvement in resource use. The pursuit of financial returns, far from allocating capital efficiently across countries, tends to make investment decisions short-sighted, while unstable exchange rates discourage long-term productive investment (Davidson 1998).

In short, there is a real conundrum here. The stability of the exchange rate is central to realising the putative benefits from free trade and capital mobility (i.e., improved resource allocation across sectors and countries), but, as we saw earlier, unregulated trade and capital movements also tend to make the exchange rate unstable and difficult to manage. The architects of the Bretton Woods system that was instituted after the Second World War visualised exchange rate stability as pivotal to ensuring harmonious trading relations and responsible macroeconomic policy by individual countries. But the regime of fixed rates broke down in 1972, and the world entered an era of fluctuating exchange rates and disturbed currency markets.[11] The European Union also found that proper economic

[11] The proponents of flexible exchange rates base their case largely on the impracticality of maintaining fixed rates in situations where countries pursue independent monetary and

integration required a certain degree of currency stability, at least among the major member economies. This was tried under various monetary arrangements over the years, but, ultimately, it had to opt for a single currency, the euro, which required member countries surrendering their autonomy in monetary policy.

A few economies (notably, Argentina and Hong Kong) have stabilised their currencies by opting for currency boards that require holding foreign exchange reserves almost equal to money supply. This system has proved to be very costly, not just because large liquid reserves have to be maintained, but also because of the consequences of having to abandon independence in formulating macroeconomic policy. Argentina continues to pay a heavy price of fixing its exchange rate in terms of lost output and high unemployment. The experience of Hong Kong has shown that despite enormous foreign exchange reserves, a currency board system does not protect an economy from speculative runs on the capital market.

There are then the proposals for instituting some mechanisms for impeding short-term capital flows in order to preserve economic and financial stability. The proposal for the so-called Tobin tax is more than two decades old, but is generally considered to be difficult to implement. Chile's tax on short-term capital inflows received considerable interest recently, but it could not stop speculative outflows, as Chile discovered to its embarrassment in the aftermath of the East Asian crisis. In any case, it seems doubtful that simply restricting short-term capital flows is likely to prevent currency crises. Britain, for example, felt threatened by the "gnomes of Zurich" at a time when capital flows across countries were much more restricted. Today, the situation is complicated by the introduction of new financial instruments, such as hedge funds and derivatives, that have rendered the distinction between the short and long term finance rather tenuous. Countries that cannot get long term finance on acceptable terms will resort to short-term borrowing, though there are devices to cover up the fact. In any case, so long as there is a market for long-term bonds and securities, controlling simply short-term capital flows can hardly be expected to stabilise currency markets.

There are various reasons why it has been difficult to devise a system of stable exchange rates, short of a complete monetary union. To start with, it is extremely difficult—and often imprudent—for countries to give up their autonomy in formulating macroeconomic policy. Countries' needs for

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fiscal policies. They do not, I think, dispute the desirability of fixed rates from the point of view of optimal decision-making. Milton Friedman is reported to have said that he favoured flexible exchange rates provided they did not change.

generating growth and employment differ, according to their stage of economic development or phase in the business cycle. Economies that aim to grow fast and catch up with the higher-income economies need macroeconomic policies that may not conform to some externally dictated format. With regard to business cycles, despite the rise in international trade and capital mobility, the different phases do not quite coincide even among the industrial economies.

There is also the problem of determining the "right" rate for an economy, which is not only a politically controversial matter (as it affects different groups differently), it also leaves professional economists debating among themselves.[12] Even when the capital account is closed, there is usually no stable and unique relationship between the exchange rate and the trade deficit. For this to be possible, there must, in fact, exist two sets of stable one-to-one relationships: one, between the trade balance and the real exchange rate (i.e., it should be possible to associate a certain real rate with a given trade balance); and, two, between the nominal and the real rate (i.e., it should be possible to influence the real rate in a predetermined direction by means of an adjustment in the nominal rate, the only lever that the government can pull). This can seldom be achieved in reality. As noted earlier, there is not, generally speaking, a one-to-one relationship between the real rate and the trade balance because of the likelihood of disequilibrium in the market of nontradables. The latter dictates some adjustment in domestic absorption. Similarly, the impact of the nominal rate on the real rate is also far from straightforward, dependent as it is on the responses of workers and producers of nontradables.

When capital can move across countries more or less unhindered, perverse movements in the exchange rate are fairly common. There has been considerable debate on whether destabilising speculation can be profitable, and therefore something that the private sector would tend to shun over the long term. Whatever the merits of this proposition, the fact is that the world has witnessed a series of currency crises since the breakdown of the Bretton Woods system in the early 1970s. The typical scenario has been that, on the upswing, capital moves into economies in search of profit, leading to exchange rate appreciation and a ready-made payoff on foreign investment. The opposite happens when there is an outflow of capital that leads to runs on currencies.

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[12] The problem is not one of knowing when the rate is wrong but of determining the right rate. Situations where the exchange rate is totally misaligned are not difficult to identify. If a country has had a much higher inflation than its trading partners over a run of years, a devaluation would become inevitable at some stage, though the extent to which the currency had become overvalued could be a matter of debate.

Finally, the problem is that in an open economy the "right" exchange rate is almost impossible to determine: capital account considerations may pull the exchange rate in one direction, while the imperative of restoring trade balance may point in the other. It has been observed time and again that high interest rates, which may be dictated by domestic macroeconomic considerations, attract foreign capital, which in turn put pressure on the domestic currency to appreciate. But this erodes the country's competitiveness in exports and import-substituting activities vis-à-vis foreign producers. The US economy is currently faced with this kind of situation. A stable dollar is required in order to keep attracting foreign finance, which is needed to finance the large trade deficit. But the trade deficit itself feeds the expectations that the dollar will have to come down.

The question of policy boils down basically to a choice between fixed rate, but with externally enforced monetary policy, and flexible rates, with individual countries retaining their policy autonomy. In order for markets to be free and well-functioning, and to reap the benefits of international specialisation and free movement of capital, some means of mimicking a single currency area, with fixed exchange rates, becomes essential. In other words, there is a need to recreate conditions for free movement of goods and factors similar to those that prevail within a single economy so that producers and consumers base their decisions on prices undistorted by exchange rate movements. Alternatively, countries may pursue independent macroeconomic policy to achieve national objectives along with flexible exchange rates. But in order to prevent exchange rate flexibility from turning into volatility, governments need to exercise a measure of control over both current and capital accounts.[13] The first option is an extreme variant of market liberalism, and there may be some efficiency gains of the kind enlarged trading areas experience. However, so long as countries remain at very different stages of economic development and economic well-being, governments will continue to be pressured by their constituents for independent national policies.

Summing-up

This note attempted to show that trade liberalisation and measures to open up the capital account that a number of countries undertook in recent years were intimately linked. They were both driven by the same ideological tide of market liberalism that has been highly influential in

[13] In a recent article on the problem of US trade deficit and exchange rate management, Ron McKinnon (1999) notes: "A commercial agreement between the United States and Japan is a necessary condition for a credible exchange-rate accord." (p. 79)

industrial as well as developing economies during the last two decades. While the case for regulating capital flows is robust, there is a need also to recognise the need for regulating trade flows. There are two reasons for this. One, international trade, just as capital mobility across countries, suffers from market failures and other problems, which justify government intervention. And, two, it is unlikely that, in situations where trade deficits are worsening, simply controlling the movement of short-term capital would stabilise currency markets. There are real problems of financing trade deficits that also need to be dealt with.

Free trade and mobility of capital across countries offer certain benefits, at least in theory, but they also make countries vulnerable to financial crises. This risk could be avoided if it was possible to institute a regime of fixed exchange rates, along with the concomitant requirement of individual countries surrendering their macroeconomic policy to a supra-national central authority. This obviously cannot be undertaken by any single country, but requires international action. This issue should, therefore, be a central concern in the reform of the international financial and monetary system. Alternatively, the current system of flexible exchange rates could continue along with the freedom to design macroeconomic policy that suits individual countries. However, this system will remain prone to currency crises, unless both capital movements and trade are regulated. In brief, countries can either opt for liberal trade regimes and free capital markets but with fixed exchange rates, leaving the fate of their economies in the hands of an outside agency, or choose to retain independent macroeconomic policy with flexible exchange rates, which are kept within manageable bounds by means of trade policy as well as restraints on capital flows.

It is, in the end, basically pragmatic policies, rather than a blind faith in an ideology, that can ensure economic stability and growth. Unfortunately, the argument for free trade, as for free movement of capital, remains anchored in an idealised world that is far removed from the everyday reality. Policies need to be crafted within a given political and economic context. The fact that trade policy gives rise to problems is no more ground for discarding it than is the case for abandoning income tax for its general abuse and social and economic complexities. This is not to deny that a number of developing countries could benefit from a rationalisation of their trade policy, which may in fact entail generally lower trade barriers.

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Social and Economic Development - A Rights Puzzle

Pervez Tahir and Sara Fatima*

Everyone has the right to a standard of living adequate for the health and well being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control. **Article 25.1 of the Universal Declaration of Human Rights, 1948.**

States should undertake, at the national level, all necessary measures for the realization of the right to development and shall ensure, inter-alia, equality of opportunity for their access to basic resources, education, health services, food, housing, employment and the fair distribution of income. Effective measures should be undertaken to ensure that women have an active role in the development process. Appropriate economic and social reforms should be carried out with a view to eradicating all social injustices. **Article 8.1 of Declaration of the Right to Development adopted by the General Assembly Resolution 41.28 on 4 December 1986.**

The torture of a single individual raises unmitigated public outrage. Yet the deaths of more than 30,000 children a day from mainly preventable causes go almost unnoticed. **Human Development Report 2000.**

Introduction

During the seventies and the eighties, Pakistan experienced a steady decline in the percentage of the population below the caloric poverty line. This trend began to reverse around 1993-94 and has continued to deteriorate since. At the end of the decade, tentative official estimates put the proportion of the poor at 29 per cent. Traditionally the civil society's struggle for rights in Pakistan, particularly in the early decades, was limited to workers' rights. In recent years, a stronger civil society movement has centred around civil and political rights. It is puzzling to see social and economic rights on the back burner at a time when every third Pakistani is eking out an existence below the poverty line.

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Two major reasons for this are apparent. First, the global focus of the human rights movement on civil and political freedoms, and, on issues related to minorities and marginalised groups. Across the globe the focus of the human rights movement has been on the establishment of a legal and constitutional framework that allows citizens to enjoy and exercise civil and political rights. The United Nations Charter for Human Rights – based on the premise of the indivisibility of human rights - included a Covenant on Socio-Economic and Cultural Rights. Western democratic states at the time of the ratification of the Charter were able to ensure civil and political freedom in their countries; the communist bloc in turn sought to ensure social and economic rights in theirs. A balance making both sides happy was reached in the Charter. This is not reflected in the movement itself. The human rights discourse was grounded in the western democracies, the focus was on lobbying for civil and political rights in the non democratic, communist, and developing countries; lobbying for social and economic rights got inextricably linked to the politics of the socialist and communist regimes; no absolute values were allowed to emerge.

Secondly, the path to attaining socio-economic rights is less clear and more complex; no 'model' is better in absolute terms than another, the level of social economic rights is perhaps more relative and part of a continuum, and central to achieving these is public choice: determining strategies, principles and resource allocation priorities through a political process. Arguably, any State working towards job creation, the delivery of basic social and municipal services and shelter is working towards the social economic rights of its people. These objectives can be arrived at differently by different types of governments and by different political processes. There is no blue-print to follow.

The international community has responded to this by avoiding the issue of absolute social and economic rights. Instead it has, through international agencies and in consultation with governments, established 'targets' and sought consensus on principal processes for their attainment. Donor conditionality reflects this under the rubric of human development.

In this paper we look briefly at two aspects of social and economic rights in Pakistan. One, what the state's responsibilities and commitments vis a vis social and economic rights are. In order to do this we look at the rights enshrined in the Constitution; the commitments made to international donor agencies; and the laws related to various levels of government. Two, we review the State's success in the delivery of these rights. We find an unenviable gap between promise and performance and conclude that further work is required to resolve the tension between civil and political rights on the one hand and social and economic rights on the other.

The Constitution and Social and Economic Rights

The State under the Constitution of Pakistan is not made responsible for the attainment of Social and Economic Rights for its citizen; it also does not give any system of redressal for the attainment of these rights. As set out in the Constitution, the National Economic Council, has responsibility for the formulation of social economic plans and programmes which are then reflected in the Medium Term and Annual Development Programmes/Plans of the Government. The National Economic Council is guided by the principles of policy when formulating these plans. Chapter 2 of Part II of the Constitution states:

> 29. (2) In so far as the observance of any particular Principle of Policy may be dependant upon resources being available for the purpose, the Principle shall be regarded as being subject to the availability of resources.
>
> 30. (2) The validity of an action or of a law shall not be called in question on the ground that it is not in accordance with the Principles of Policy, and no action shall lie against the State, any organ or authority of the State or any person on such ground."
>
> The Constitution, however, after ensuring that the State, or any of its bodies, can not be held accountable in a court of law, does make the State responsible for certain social and economic rights. Chapter 2 of Part II of the Constitution states:
>
> 34. Steps shall be taken to ensure the full participation of women in all spheres of national life.
>
> 35. The State shall protect the marriage, the family, the mother and the child.
>
> 37. The State shall:
>
> a. promote, with special care, the educational and economic interests of backward classes or areas;
>
> b. remove illiteracy and provide free and compulsory secondary education within minimum possible period;
>
> c. make technical and professional education generally available and higher education equally accessible to all on the basis of merit;
>
> d. ensure inexpensive and expeditious justice;

e. make provision for securing just and humane conditions of work, ensuring that children and women are not employed in vocations unsuited to their age or sex, and for maternity benefits for women in employment;

f. enable the people of different areas, through education, training, agricultural and industrial development and other methods, to participate fully in all forms of national activities, including employment in the service of Pakistan;

g. decentralise the Government administration so as to facilitate expeditious disposal of its business to meet the convenience and requirements of the public.

38. The State shall:

a. secure the well being of the people, irrespective of sex, caste, creed or race, by raising their standard of living, by preventing the concentration of wealth and means of production and distribution in the hands of a few to the detriment of general interest and by ensuring equitable adjustment of rights between employers and employees, and landlords and tenants;

b. provide for all citizens, within the available resources of the country, facilities for work and adequate livelihood with reasonable rest and leisure ;

c. provide for all persons employed in the service of Pakistan or otherwise, social security by compulsory social insurance or other means;

d. provide basic necessities of life, such as food, clothing, housing, education, and medical relief, for all such citizens, irrespective of sex, caste, creed or race, as are permanently or temporarily unable to earn their livelihood on account of infirmity, sickness or unemployment;

e. reduce disparity in the income and earnings of individuals, including persons in the various classes of the service of Pakistan."

Taking a cue from the UN conference on Human Environment held in 1972 in Stockholm, the Constitution of 1973 recognised the subject of "Environmental Pollution and Ecology" and placed it on the concurrent list. The right to a clean environment was not identified.

State Institutions Responsible for Social and Economic Rights

If citizens in Pakistan can not go to a court of law for the delivery of social and economic rights they have only two other avenues: one, through a political process hold politicians accountable for these rights and, two, hold institutions, established under statutory or corporate law, accountable.

The political process of accountability has been fraught with many factors. Apart from the fact that the democratic process in general has been discontinuous, a functional differentiation of local politics, provincial politics and national politics has not emerged due to the tendency to centralise all state functions. If, for instance, one level of government, the local level, had been responsible for certain elements of social and economic rights - such as municipal services - it could have been held responsible for the delivery of primary education, primary health, reproductive health, water and sanitation through both political and institutional systems; provincial politicians could in turn have been held responsible for higher levels of education and health services, shelter, and the environment; and national politicians for poverty, employment and growth.

Chapter 2 of Part II of the Constitution states that: "32. The State shall encourage local Government institutions composed of elected representatives of the areas concerned and in such institutions special representation will be given to peasants, workers and women." Thus the Constitution does not make it obligatory on the State to constitute local governments. Citizens have no clear avenue for redressal for the elements of social and economic rights which would normally come under the purview of local governments.

The Constitution is, however, clearer, on the functional responsibilities between the Federation and the provinces. The major issue in this is also an overlapping of functions and the centralisation by the Federation of functions that are not on the concurrent list. The concurrent list was to be reviewed subsequently, but was not.

For example, if a citizen anywhere in Pakistan, would like to take a State institution to task for the delivery of education it would in its own constituency find federal, provincial and local government institutions responsible for the same service. Outside of a political process of accountability at the federal and provincial levels, which includes a basket of several types of goods and rights, and the infrequency of local government elections, citizens can only turn to statutory bodies or corporate bodies for redressal.

Urban local councils and District councils under the 1979 Local Government Ordinance, and Water and Sanitation Agencies and Boards, are responsible for basic municipal services; a number of autonomous educational and health institutions under their respective charters are responsible for higher education and health care like Universities, etc. These institutions have been guided by a set of government policies. However, given the inherent inefficiencies in the system, the control of funds primarily at the provincial and federal levels, these independent institutions have been ineffective in terms of service delivery. Concerned citizens, at the local level, have taken these institutions to court; both on procedural grounds and on effectiveness of service delivery. These cases have not entered the mainstream of the discussion on social and economic rights, or, increased pressure on institutions to improve service delivery.

Commitments to the International Community's Development Targets and Major Charters and Covenants

The international community, under the auspices of the United Nations, has established international targets related to social and economic rights. These targets are translated into actual programmes through member State's national policies and priorities of international financial organisations and donors. The international financial organisations and donors enforce these in turn through a number of strategies; priorities for resource allocation; conditionalities on member states; and through major campaigns, particularly, bringing specific rights into focus through the declaration of 'decades', 'years' or 'days'. The latest international poverty reduction targets set by the international community for 2015 are given at Annex-I. The major covenants and charters in the social and economic sectors, and Pakistan's positions vis a vis them, are given in Annex II. Pakistan has a long distance to cover on the road to international development targets. The road map is characterised by commitments exceeding actions. Annex III shows that Pakistan lags behind India and Tajikistan on the Human Development Index. Annex IV outlines the challenge ahead.

The State of Social and Economic Rights

Pakistan is among the few countries of the world which does not have an officially determined and monitored poverty line. There is no dearth of studies by individuals and institutions, each adding to the problem of discerning a trend. Information on unemployment conflicts with daily experience, mainly because of the reporting problems. Data problems in social sectors are no less intractable, despite the plethora of donor-funded 'information management systems' in nearly all sectors. The discussion that

follows on the state of social and economic rights keeps these informational inadequacies in view.

(a) Poverty and Unemployment

The average income of the poorest households in 1998-99 was Rs. 1500 per month. Of this income the household was utilising 54 per cent of its income on food - Rs. 810 - an insufficient amount to meet the daily caloric requirement. The low proportion of expenditure on food could be due to the high proportion of income that has to be spent on services and utilities. The income of perennial industrial workers was less than double (Rs. 2750) this amount. Table 1 gives an idea of the proportion of the poor under the poverty line over time.

Table-1: Poverty Trends
(%)

Years	Total	Rural	Urban
1986-87	26.9	29.4	24.5
1990-91	23.3	26.2	18.0
1992-93	20.3	22.5	16.8
1993-94	20.8	24.4	15.2
1999-2000	28.7	29.3	27.6

Source: Government of Pakistan, Planning Commission, *Poverty Reduction Programme 2001-04.*

The poor in Pakistan are characterised by certain features: Firstly, poverty is concentrated in certain geographical locations; secondly, nearly 35 per cent of poor households have household heads with no formal education; thirdly, nearly 30 per cent of poor households are headed by people who are older than 50 years of age; fourthly, households are more likely to be poor if they are employees and not employers, households in the agriculture and manufacturing sectors are more likely to be poor than households in trade, services and utilities; and fifthly, the larger the size of the household the more likely that it will be poor.

Moreover, although scant attention is paid to this factor, urban poverty in Pakistan is also on the increase. A significant portion of the urban population lives in areas outside municipal boundaries with little access to services. Nearly 35-50 per cent of the urban population lives in slums and

under-serviced areas. By 2015 the urban population in Pakistan will exceed the rural population. The incidence and depth of poverty by type of households is given in Table-2.

Table-2: The Burden Incidence of Poverty
I. (% of Households)

	Incidence		Depth	
	Rural	**Urban**	**Rural**	**Urban**
Asset Ownership				
Owning no property	50	29	14	6
Owning property	31	27	8	6
Owning Livestock	21	-	5	-
Educational Attainment				
Illiterate	36	40	9	9
Primary	33	34	8	7
Higher Secondary	17	17	3	3
Graduate/Post-Graduate	14	4	3	1
Employment Status				
Unemployed	33	22	8	3
Under employed wage earners	42	30	11	6
Self Employed	27	25	6	5
Transfers				
Household w/o transfers	34	28	8	6
Households with transfers	26	26	6	6
Receiving remittances	23	22	6	4
-outside Pakistan	12	12	2	1
-inside Pakistan	25	25	6	6
-Zakat beneficiaries	61	61	17	13

Source: SPDC, *Annual Review 2000*

Currently, in Pakistan, nearly 20 per cent of the working age population is un/under-employed, which equals an open unemployment rate

of 10.5 per cent. 42 per cent of the population in Pakistan is under 15 years of age. The Government response to combat this state of affairs, has focused on addressing the three different types of poverty:

- Income: through employment generation in small and medium enterprise sectors and energy;

- Consumption: through social safety net projects; and

- Basic needs: through the Local Government Plan 2000.

All three types of poverty are inter-linked and the government has included components related to infrastructure, social sector and gender in its investment plans. The Three Year Development Programme 2001-4 includes: (i) Pro-poor economic growth and employment generation (ii) Access to Micro Credit (iii) Improved Governance (iv) Physical Infrastructure through the Khushal Pakistan Programme (v) Access to Basic Services (vi) Social Safety Nets (vii) Attention to gender and minorities issues.

Employment, the key instruments of poverty alleviation, was greatly affected by the macro economic environment in the country. The Government in order to address the employment crisis is focusing on: (i) Small and Medium Enterprises as they account for 75 per cent of the manufacturing sector and have been a significant factor in the creation of employment in other countries. (ii) Agricultural Sector Reforms (iii) Overseas Employment, (iv) Infrastructure and Employment Creation. This is in recognition of the fact that employment elasticities are highest in small scale manufacturing and construction. In order to create employment and improve infrastructure the Government embarked on the Integrated Small Public Works (Khushal Pakistan) Programme in 1999. In this programme 92 per cent of the funding was allocated to the provinces and 8 per cent to Federal Areas. It was decided that 40 per cent of the district allocation would be spent on labour intensive farm to market roads, 10 per cent on women and 25 per cent on marginalised areas in the district. The nature of investment included in this project was: farm to market roads, water and sewerage, water reservoirs, solid conservation and civic amenities.

As part of the Social Safety Net Projects the Government of Pakistan has the Zakat and Ushr System which disburses Rs. 500 per month to 2 million people and the Food Support Programme which gives food subsidy of Rs. 500 to 1.2 million people. Given the extent of poverty in the over 50 years bracket, the Government has included a commitment to improve the management of pension funds. The existing Employees Old-Age Benefit Institution (EOBI) has a limited coverage. The Zakat fund has Rs. 20 billion in

reserve. Social security coverage is limited to 0.7 million workers for benefits estimated at around Rs. 1.5 billion through Employees Social Security Institutions in Punjab and Sindh. According to a recent study indigenous philanthropy contributed an estimated Rs. 70 billion in 1998 to social welfare.

For social sectors – and basic needs poverty related to education, health, population welfare and water and sanitation – the main instrument continued to be the Social Action Programme. The SAP was started in 1992-93 by the Government with a view to (a) improving allocations to the social sectors as a proportion of public sector expenditure (b) focus on primary health, primary education, population welfare and community based water supply and sanitation. The focus of the donor supported SAP project for the past decade has been on these sectors and issues with some improvement in social sector spending indicators. However, the SAP focused on the rural sector at a major cost to the urban sector, particularly the urban poor. It had to be complemented by other projects which have an emphasis on nutrition, scholarship schemes for the poor, and gender (Micro credit, Crisis Centres, Skill Development Centres, Fund for Women in Distress and Detention and Community Initiatives).

Donor agencies began to support SAP after a year of its implementation by the Government of Pakistan under donor funded projects SAP I and SAP II. In addition, a major donor supported project for community infrastructure and micro credit was started in 1999 by the name of 'Pakistan Poverty Alleviation Fund'. This project will disburse nearly $90 million to NGOs to build community infrastructure. However, the experience of the nineties suggests that effective service delivery, and not resource allocation, is the main issue to be addressed to overcome the social deficit in Pakistan. The issue, so to speak, is one of local rights.

In order to address the main issue of access to basic social services by the poor, the Government has undertaken an ambitious task of the establishment of local governments with an entirely new administrative structure. On August 14, 2000 the Local Government Plan 2000 was announced. This plan:

i. Reiterates the responsibility of the State to deliver municipal services to the rural areas. Specifically the government will remove the rural-urban divide and have disbanded existing district councils and urban local councils.

ii. Provides a new set of institutions which will be responsible for planning of services in an entire District Government, Tehsil Municipality and Union Councils;

iii. Ensures representation of women at 33 per cent;

iv. Recognises the role of local level community organisations: Village Councils and Citizen Community Boards and information access to the public;

v. Envisages government administration (line departments, policy and judiciary) to be managed by an elected head of the District; and

vi. Allows District governments to receive money from the provinces on the basis of a financial transfer and will have the right to raise taxes at the district level.

After the implementation of the Local Government Plan the Government will have to revisit all the projects which are delivering basic municipal services and are involved at the local level. It is anticipated that the Integrated Small Works Project and the Social Action Programme Project will be redesigned under this Plan. Provincial Finance Commissions will be instituted to apportion Provincial-Local resources according to socially desirable criteria.

The strategy to address poverty has not focused on asset redistribution. It has also not focused on controlling the cost of basic services or utilities for the poor. The focus continues to be on macro economic instruments prescribed by international agencies and a high reliance on market and community based mechanisms, propagated by international agencies, for the delivery of basic needs. Independent civil society and citizen groups, working in isolation from government mechanisms, with high dependence on external financing continue to be the only 'independent' voices in the socio-economic arena. Independent research and analysis of the socio-economic sectors remains highly limited.

(b) Health

Women, children, and the rural poor carry a disproproportionate amount of the country's health burden. Nationally, provincially, and regionally, variations in the quality of service by income groups are very high and contrary to popular perception both rich and poor households, pay for health services. Drug addiction, the use of pan and tobacco are a major health burden on the country. One in five men use pan and/or tobacco on a regular basis. In the elderly the most common ailment is impaired hearing followed by missing limbs (10%) and blindness (15%). In urban areas only 25 per cent of people and in rural areas 12 per cent have corrective lenses.

Children under five years of age have an average of four accidents a year requiring expert attention.

The health sector is characterised by three main types of health care: promotive; preventive; and curative. In a developing country with limited resources the focus of the health strategy should be on addressing gaps in promotive health care, preventive health care (primary health care); and in focusing on those aspects of curative health care that result from a violation of human rights. The major causes of deaths amongst women continue to be related to promotive and preventive health care for pregnancy; for children it continues to be nutrition, diarrhea and ARIs with no differential between boys and girls; and for the rural population the major issue remains access to health care.

Access to health care is impaired by the increasingly reduced role of government agencies and the associated rise in the private sector. 35 percent of the visits of rural females to health care providers are to private doctors. In all other groups private doctors provide between 45 and 65 percent of care. The growth in health care for profit has meant that the problem of physical access to health care providers for the rural population has increased.

The magnitude of malnutrition continues to be immense. One in every third child is malnourished in Pakistan. There is no gender differential in this. The overall availability of food items during 1999-2000 improved by 0.93 per cent compared to 1998-99. The per capita availability of wheat remained the same, rice and animal products improved (thus showing an aggregate improvement over the preceding year), and pulses, edible oil, fruit, vegetable and sugar decreased significantly. Although protein availability only declined marginally the overall caloric supply of food items (essential food) decreased from 2815 to 2708 calories. However, the ability of the poor to purchase food has diminished considerably in the same period. The result of this is clear in the National Health Survey of Pakistan: more than "35 per cent of children under five years of age are short for their age, over 10 per cent are underweight for their height, and over half are anemic. Comparing these results with earlier surveys show little evidence of improvement over the last 20 years. Above 20 per cent of adults are underweight or severely thin, and about 40 per cent of women of child-bearing age are anemic." More adult women are anemic than men and anemia is more common in households with a low income status.

The Government has responded to this crisis by introducing a Food Support Programme and by undertaking promotive and preventive measures such as social marketing, improvements in technology used and regulation

of market providers . This has included a focus on iodine deficiency, anemia control and breastfeeding. An evaluation of the IDD Control Programme shows that it has resulted in 73 per cent processors iodizing 35 per cent of the salt, 87 per cent of samples were adequately iodized and 79 per cent of the processors are using improved method of iodization. This has been largely due to strategies related to social marketing and improved regulation. The promotional programme on breastfeeding has been continued. The Breastfeeding Ordinance is being finalised which will regulate infant formulae available in the market. A media campaign to promote breastfeeding is underway.

More than 50 per cent of babies between 12-23 months in Pakistan are in danger of dying or incurring a serious illness or lifetime deformity because of lack of basic immunisation against six major diseases. Of major concern is the fact that in Punjab and Balochistan immunisation coverage has actually deteriorated in 1998-99. Immunisation shows no clear relationship with income levels, but is substantially higher in urban areas, thus indicating that it is possibly affected by knowledge and access. Across Pakistan private sector facilities for immunisation were within a 2 km reach of 60 per cent of the population compared to government facilities which were within the same distance for 55 per cent. In the early 90s the Government had targeted that by the end of SAP-I 90 per cent of these babies would be immunised. The Government's ability to deliver routine immunisation has deteriorated. Programmes implemented by the Federal Government, with the support of the military machinery, have had to be launched.

The major killer of children in Pakistan continues to be diarrhea and pneumonia. Both can be prevented through appropriate public and environmental health programmes and primary health care. Major causes of diarrhea are unsafe sanitation, and cause of death is avoided through timely administration of ORS, and drinking water. Between half and three quarters of the episodes of diarrhea are not treated with ORS. The proportion of children under five who have suffered from diarrhea in the past 30 days has decreased to 12 per cent. This is possibly due to an improvement in health promotion and awareness raising.

(c) Water and Sanitation

Nearly 50 per cent of Pakistanis today do not have a toilet. This number is as high as 63 per cent for rural households. Punjab has the poorest coverage and Balochistan the most. Moreover, 68 per cent of rural households do not have access to a drainage system; this coverage is the poorest for Balochistan and the highest for the Punjab. Nearly 63 per cent of the households do not have any municipal garbage collection service.

Although for drinking water overall coverage is better, this is only because of the high dependence on underground water and handpumps. These provide 57 per cent of the coverage, 60 per cent of which are installed by households themselves. This figure has not shown any change since the mid 90s.

Given that the government is the main service provider for piped water it is not surprising that the poorer households have the poorest source and furthest distance for accessing drinking water. 93 per cent of all piped schemes are installed by the Government. According to the Pakistan Integrated Household Survey (1998-99) 67 per cent of the people in the lowest income bracket in urban areas have no access to a sanitation system; 28 per cent have access to open drains and 4 per cent to underground drains as compared to the highest income bracket where 14 per cent have access to underground drains and 34 per cent to open drains. Major differences also exist between the provinces in quality and level of sanitation service. 56 per cent of the poorest households and 75 per cent of the richest households pay for water. A substantially higher proportion of urban households pay for water.

In water supply and sanitation the Government estimates that in 1999-2000 it has provided an additional 1.25 million people in urban areas and 1.75 million people in rural areas with water. It has also served an additional one million people in urban areas and 90,000 people in rural areas with sewerage services. In rural areas, of 8,404 schemes 1,968 schemes have been transferred to communities. The Government is continuing with major development schemes only in large cities. The focus remains on scheme completion and community management for 2000-1.

(d) Reproductive Health

For women the main killer continues to be complications at the time of pregnancy ie the delivery of pre and post natal care. The lifetime risk of dying from pregnancy related causes was one in 53. Only, one in three mothers went to a doctor during pregnancy and 39 per cent received post-natal care ie tetanus injection; this attendance was higher in urban areas and in the Punjab. In rural Pakistan nearly 45 per cent went to government hospitals/clinics, 22 per cent to private hospitals and clinics and 11 per cent to Traditional Birth Attendants (TBAs).

In 1998-99 only 18 per cent women were able to give birth under medical supervision of which more were able to use private hospitals and clinics. 82 per cent women gave birth to their children at home. Nearly one-fifth of the women at the time of birth only received assistance from

family members. 45 per cent received assistance from trained *dais* and 19 per cent from traditional birth attendants. In the 1990s improvements in the training of TBAs has improved the quality of care at birth that mothers received. However over half of the richer women in urban areas had access to doctors.

There was no decline in the 1990s in the number of women who are married in the 15-19 age group although there was some decline in the urban areas in the 20-24 age group. Almost all married women were aware of basic family planning methods with radio as the main media source; Balochistan had the lowest awareness level. This however, did not mean that they were able to exercise their right to family planning. Since the mid 90s there has been only a 2 per cent increase in the number of women using family planning bringing the total to 23 per cent. Interestingly, no relationship with income was found although there is a direct correlation with education. The reason given by women for not exercising family planning were, in order of priority, desire for more children, religious reasons (which indicates low awareness levels), and spouse.

Nearly all women were satisfied with their family planning method. This could possibly be due to the fact that the methods most commonly used are tubal ligation, condoms and IUDs. The government remained the main source of supply – 51 per cent - with almost all women satisfied with the quality of service. Nearly 70 per cent of users were within a 5 km round trip of the family planning service. The improvements with reproductive health have also possibly led to an improvement with infant mortality. This has come down to 89 per 1000 births since 1990-91.

Overall the government has been able to address only some of the major health indicators in the 1990s, health here defined broadly to include public and reproductive health as well. In the year 2000 no major trends and changes were seen in the health sector. The three areas in the health sector where a major positive impact has been demonstrated in the 1990s – and has continued in 2000- are the reproductive health programmes, control of child diarrhea and reduction in infant mortality. The government has been less successful in tackling the major issue of malnutrition and pre and post natal medical care for women. The government has also not been successful in addressing the problem of increasing deficiency in environmental and public health, particularly children's deaths due to pneumonia.

The ability of the government to reach its citizens is evident in its basic health programme. In 1999-2000 BHUs only treated 3 per cent of all cases in rural Pakistan and the number of people that government facilities have treated since the mid 90s has not changed. The under-utilisation of

the government's basic health facilities can only be addressed by ensuring local level decisions. This under-utilisation is due to inappropriate levels of service for citizens (especially as private facilities offer a menu of services with an ensured basic quality and staff courtesy), non-attendance by medical practitioners, and insufficient stocks. Only 55 per cent of BHUs reported a stock of contraceptives and 79 per cent reported antibiotics.

Major reforms required in the health sector are:

i. The role of the federal government. As health is a provincial subject, provincial governments do not fully coordinate with the federal ministry.

ii. Coordination between the ministries and departments responsible for this work. This includes two aspects

   - The need to have an integrated approach to health. This includes integrating promotive and preventive health, including environmental and public health, with reproductive and curative health. For example, diarrhea and/or malaria control can not be undertaken without coordination with the water and sanitation sector.

   - The cost of delivery of certain programmes and projects has increased. This is due to the fact that there has been an unnecessary proliferation of parallel programmes run by different ministries like the Lady Health Worker Programme and the Village Based Family Health Workers.

iii. The need to ensure the local level service delivery. The need to localise decisions related to service delivery and their management.

iv. The need to focus on improved preventive and promotive aspects of health. Although resource allocation in the government's programmes has shifted in favour of preventive health services routine immunisation programmes of the government show serious signs of deterioration.

v. Reach out to women and children. Ensure that female staff in health facilities increase. Some 28 per cent of government health facilities have no female staff.

vi. Ensure that the poor have basic access to health service regardless of their ability to pay, in particular, the price of medicines.

vii. The need to focus on urban health care with an emphasis on public health in intermediate and small cities as well.

viii. Focus on regulation of private sector.

(c) Education

Education is key to economic growth, improving people's opportunities and income earning power, and the successful implementation of other programmes. Education at different levels – primary, secondary, higher - and of different types – vocational and religious – plays a different role in the nation's development process.

The country faces major structural problems in the education sector today. These include:

i. The role of the federal government in a provincial function.

ii. The relationship between education and employment opportunities

iii. Access of women to education

iv. High drop out rate of school going children

v. A large unregulated informal sector – both private and religious

vi. Universities – quality and governance issues.

These issues are evident in the education indicators that Pakistan has: Literacy ratio of population under 10 years of age 45 per cent (male 56% and female 32%); in 1981 it was 26 per cent. There are 8 million out of school girls. Almost all the poor are illiterate. There are 50.05 million illiterate people who are above 10 years of age; women are by far the higher proportion of this (142% of male); and most of these people live in rural areas.

The Government of Pakistan also launched a new Education Action Plan. The plan sets out compulsory primary education for all as a target. This target is to be met through:

- 29/52 billion of the budget allocated to construction of school buildings. 0.8 billion is to be spent on teacher training with the main portion of that allocated to the construction of hostels.

- 90,000 new schools without buildings would be established in addition to the new schools with buildings (8504 schools) at a cost of Rs.8.6 billion

- enrollment in Universities would be doubled in 3 years.

- reforming the countries 22 examination boards.

- Rs. 50 million on a National Education Assessment System

The main issues in the primary education area are the lack of qualified teachers and the availability of quality teaching materials. In terms of governance the issues continue to be wholesale corruption and school maladministration. There are nearly 20 per cent ghost schools, which amounts to nearly 32,000 schools. In higher education the main issues are lack of qualified university teachers, rather than buildings or equipment. There is a need to reform curricula, examinations, and school text books. Poor testing procedure, excessive memorisation and widespread cheating need to be controlled.

Universities are funded by the federal government while they are administratively under the control of the provincial governments. They are faced with serious administrative problems, large budget deficits, an outmoded curricula, a defective examination system, and a lack of focus on research. Higher education is mostly traditional and obsolete lacking simultaneously the research potential. Updation is needed to keep pace with advancement at the international level. Capacity building of local universities to start research programmes in modern technologies in collaboration with universities of international repute requires more efforts.

(f) Shelter

Pakistan is signatory to a number of international conventions which include "adequate shelter" provision as a right. This has been included in the United Nations Vancouver Declaration on Human Settlements (1976) and at the Habitat Conference. These include conventions such as the CEDAW, CRC, CPRMW. The housing and shelter sector is currently faced with the following problems:

- Evictions of people living on their land.

- Small Size Residential Plots

- Housing Backlog

In order to address this problem a Task Force on ***katchi abadis***, Upgrading and Urban Renewal was set up. Key aspects of the Task Force's recommendations are: " The Government of Pakistan recognises that ***katchi abadis***, low/under- serviced areas and areas requiring urban renewal and upgrading are a reality, an integral part of the urban and national economies, and have emerged in response to the state's inappropriate planning and provision of services for the urban poor....There is a need, at this stage, to adopt realistic policies and strategies to address both the regularisation and upgrading challenge, and, the shortfall in land and housing for the urban poor. In order to address the magnitude of the problem the government will adopt short, medium and long term measures that do no rely on ad hoc initiatives – both regarding evictions and upgrading - but address systemic constraints and problems that the urban poor face in accessing land and housing services."

The policy principles include:

i. The need to build on previous and ongoing work undertaken for the regularisation and improvement of ***katchi abadis*** and the provision of services to low/under- serviced areas; strongly discourage future encroachment and squatting on public or private land through enforcement of all existing laws in this regard; support facilitation of services to existing ***katchi abadis***, low/under-serviced settlements and areas requiring urban renewal and upgrading;

ii. The need to facilitate an environment of mutual cooperation, responsibility and long term resolution to address the issue of land, housing and infrastructure services for the urban poor;

iii. The government reiterates its commitment to expediting the process of regularisation of ***katchi abadis*** as per the 23rd March 1985 policy and integration of ***katchi abadis*** in the city planning and service delivery systems. In order to facilitate the regularisation of ***katchi abadis*** process – as per the 23rd March 1985 policy – the government will undertake regularisation on a self-financing basis and will remove all major anomalies and discrepancies in the policy;

iv. An appropriate resettlement policy for people living without tenure on state land, needs to be formulated. No evictions of people living on state land without tenure will be undertaken till the formulation and implementation of such a resettlement policy;

v. A strategic plan, through a process of consultation with the citizens at the city level, will be formulated for urban areas. This plan will include all areas regardless of tenure and administrative jurisdiction;

vi. Transparency and information access on land, housing and services for the citizens of Pakistan will be ensured. The government will ensure changes in ordinances related to information access and the acquisition and sale of land; and

vii. Major investments, in land, housing and services, will only be undertaken after extensive public consultation and enquiry at the city level.

The Government of Pakistan allocated Rs 4 billion in 1999-2000 shelter. The budget for the Physical Planning and Housing Sector (which includes water supply and sanitation) has been reduced by 15 per cent for 2000-1. The recommendations of the Task Force, if taken up, by the present government could have a major impact on the sector, especially on the key structural and systemic issues.

(g) Environment

Environment, unlike the other socio-economic sectors, is in principle a public good. Unlike other public goods it is one that transcends international boundaries and generations. It relates to the depletion of existing resources, it is a 'right' that present generations hold for the future generations. In effect, environment is perhaps one of the critical 'rights' that are based on the opportunity cost of one right over the other: primarily related to economic generation through energy and job creation for present generations at the cost of environmental degradation for future generations.

The major milestone, globally, in the environmental debate this year was the launching in November 2000 of the Dams and Development, A new Framework for Decision-Making Report by the World Commission on Dams. The recommendations of the World Commission on Dams in their Report have far reaching implications for the geo-politics of the region. This included of course a subject of critical importance for the federation: the Kalabagh Dam.

The Three Year Development Programme (2001-2004) will aim to achieve medium-term targets of the following three objectives:

(i) Conservation of biophysical environment for sustainability of natural resource base.

ii. Rationalisation of production processes and consumption patterns for making them least cost and least detrimental to air, water and land resources.

iii. Reduction of pollution of living and working environment to bring within National Environmental Quality Standards (NEQS).

Under the Three Year Development Programme (2001-2004), development activities in various sectors would be made environment-friendly, ensuring sustainability. This will be achieved through institutional strengthening and capacity building, public awareness and participation, effective policing i.e. enforcement of NEQS and legislation, and safeguarding environment in the development process. The Plan stresses an effective coordination among different stakeholders involved in planning, implementation, and monitoring of development programmes and projects. It also reaffirms Government's obligations under international Conventions and Protocols to participate in regional and global initiatives on environmental amelioration.

Concluding Remarks

This paper is an attempt to raise the issue of the dichotomy that exists between social and economic rights, and human rights – civil and political. Today, at the turn of a new millennium, the citizens of Pakistan can hold the State responsible for the decade long ascent in poverty; for its apathy towards arresting it; and the inability to address the fundamental structural flaws in the economy that have contributed to its increase. We can also judge the State by how it has improved basic health care, access to primary education and improved shelter options for the poor. At the end of 2000 in the health sector the State stands responsible for the inability to improve preventive and promotive health care, due not to a lack of resources but to inappropriate delivery; to reduced enrollment for primary education in the public sector, when resource allocation is on the increase; and the brutality of evicting citizens from State land without the provision of alternative shelter options. Even where 'absolute social and economic rights' are not assessed, in relative terms the State in Pakistan is accountable for inappropriate governance structures, apathy, negligence and callousness in the provision of social and economic services.

Policy makers, researchers and international organisations define poverty in many different terms and ways: poverty in terms of a minimum income, poverty in terms of a minimum level of consumption; poverty in terms of access to basic education, health and shelter. All these forms of poverty, or

dimensions of poverty, impinge on the fundamentals of human dignity. In Pakistan all these are violated for an increasing number of its citizens.

The year 2000 also did not see any improvement on the part of civil society and citizen groups to address the issue of social and economic rights. These organisations, even when concerned exclusively with social and economic issues, continued to focus the energies on the delivery of actual services, primarily working independently of the State machinery. In a sense, both the state and civil society organisations have paid more attention to investment rather than the rights issues.

The question is: Are social and economic rights, rights anyway? Rights are claims on other individuals and collectivities and their realisation requires some mechanism to obligate other individuals or collectivities. Human rights though innate and intrinsic have nevertheless to be legislated, which makes them justiciable. There is thus recourse to law to secure claims or its threat to prevent violation. The justiciability of civil and political rights enables the human rights movement to focus on them.

However, an unemployed person, for instance, cannot go to a court of law to enforce the right to be employed, even in a society committed to full employment. The issue was vociferously debated at the time of the formulation of the of the 1973 Constitution. Some opposition members had moved to make basic human needs a justiciable fundamental right after a specified time. To this President Bhutto replied in his aide-memoire: "When we achieve our aim of establishing a socialist economy, to which you [Opposition] object, we would provide all this and more .... We shall also provide means for their enforcement in the fullness of time, but not through the writ jurisdictions of the High Courts. Your proposal would not only make the task of the High Courts impossible but would also lay insuperable obstacles in the way of the Executive for achieving the end to which it is dedicated, the welfare of the people." Article 29(3) merely provided that every year a report shall be laid before the National Assembly on the observance and implementation of the Principles of Policy.

The fulfilment of social and economic rights requires resources. However, the availability of resources does not guarantee that such will be the case. Resource distribution is not necessarily just. Securing human rights promotes an environment of justice. But securing human rights in situations of extreme poverty, which limits the very capabilities necessary to secure all forms of rights, presents the puzzle that this paper has only begun to identify. A major new research programme will be necessary for a systematic and systemic understanding of the rights puzzle.

International Development Targets

Annex-I

Indicators	Target
Income Poverty	Halving the Share of the Population living in poverty from 30% in 2000 to 15% by 2015
Extremely Poor	Reduce the proportion of the extremely poor to 12.5% of the world population by 2015
Illiteracy	Reduce adult illiteracy rate between 1990-2000. The target has been extended.
Education	Enroll all children in primary school by 2015. To ensure that, by the same date, boys and girls alike will be able to complete a full course of schooling; and that boys and girls will have equal access to all levels of education.
Life Expectancy	To raise the average life expectancy to 60 years by 2000. The target has been extended.
Infant and Child Mortality	Reduce infant and child mortality rates by two third by 2015
Maternal Mortality	Reduce maternal mortality rate by three-quarters by 2015
Malnutrition	Reduce by half the proportion of children under five who are under-weight by 2000. The target has been extended.
Reproductive Health	Provide access for all who need reproductive health services by 2015
Environment	Implement national strategies for sustainable development by 2005 so as to reverse the loss of environment resources by 2015
Gender Equality	Promote gender equality and the empowerment of women, as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable

Safety Nets	Provide special assistance to the marginalised and the vulnerable.
HIV/AIDS	Have by 2015 halted, and begin to reverse, the spread of HIV/AIDS, the scourge of malaria and the major diseases that afflict humanity
Productive Work	Develop and implement strategies that give young people everywhere a real chance to find decent and productive work

Source: Government of Pakistan, Planning Commission. *Three Year Poverty Reduction Programme, 2001-4.* Islamabad.

Covenants and Charters: Pakistan's Position

Annex-II

(S = Signed, N = Not Signed)

Covenants and Charters	Pakistan's Position	Related National Policies/ Departments or Institutions Responsible
General		.
International Covenant on Economic, Social and Cultural Rights, 1966	N	Principles of Policy as enshrined in the Constitution
Convention on the suppression of the traffic in persons, 1950	S	.
Convention related to the Status of Refugees, 1951	N	.
International Convention on Due Elimination of all Forms of Social Discrimination	S	.
International Convention on the Protection of the Rights of all Migrant Workers and Members of their Families	N	.
Employment		.
Hours of Work (Industry Convention), 1919	S	. Ministry of Labour
. Night Work (Women) Convention, 1919	S	- do -
Night Work of Young Persons (Industry), Convention 1919	S	- do -
Right of Association (Agriculture) Convention, 1921	S	- do -

Weekly Rest (Industry) Convention, 1921	S	- do -
Minimum Age (Trimmers and Stokers) Convention, 1921	S	- do -
Workmen's Compensation (Occupational Diseases), Convention, 1921	S	- do -
Equality of Treatment (Accident Compensation), Convention 1925	S	- do -
Inspection of Emigrants Convention, 1926	S	- do -
Making of Weights (Packages Transported by Vessels) Convention, 1929	S	- do -
Forced Labour Convention, 1930	S	- do -
Protection against Accidents (Dockers) Convention (Revised), 1937	S	- do -
Underground work (women) Convention, 1935	S	- do -
Minimum Age (Industry) Convention (Revised), 1937	S	- do -
Final Articles Revision Convention, 1946	S	- do -
Labour Inspection Convention, 1947	S	- do -
Freedom of Association and Protection of the Right to Organise Convention, 1948	S	- do -

Night Work (Women) Convention, 1948	S	- do -
Night Work of Young Persons (Industry) Convention (Revised), 1948	S	- do -
Right to Organise and Collective Bargaining Convention, 1949	S	- do -
Abolition of Forced Labour Convention, 1957	S	- do -
Weekly Rest (Commerce and Offices) Convention, 1957	S	- do -
Indigenous and Tribal Populations Convention, 1957	S	.
Discrimination (Employment and Occupation) Convention, 1958	S	.
Final Articles Revision Convention, 1961	S	.
Equality of Treatment (Social Security) Convention, 1962	S	.
Tripartite Consultations (International Labour Standards) Convention, 1976	S	.
Vocal Rehabilitation and Employment (Disabled Persons) Convention, 1983	S	.
Health and Reproductive Health	I.	.
International Conference on Population and Development (ICPD), 1994	S	National Reproductive Health Policy under consideration
Access to education, especially for girls		.

Reduced mortality rates		.
Increased access to quality reproductive health services, including family planning.		
Universal access to family planning no later than 2015.		
Health for All (WHO)	S	Ministry of Health
Education		.
Jomtein Conference, 1990. Education for All	S	Ministry of Education
Dakar Declaration, 2000. Education for All		- do -
Shelter		.
United Nations Vancouver Declaration on Human Settlements, 1976	S	National Policy on *Katchi Abadis*, Upgrading and Urban Renewal, 2000
Women and Children		.
Convention on the Elimination of all forms of discrimination against women, 1979	S	Ministry of Women Development
Convention on the Rights of the Child, 1989	S	Ministry of Women Social Welfare
To translate into national and provincial laws and programmes:		
- Protected against all forms of discrimination		
- Ensure to the maximum extent possible the survival and development of the child		

- Right to be protected from economic exploitation		
The Platform for action at the Fourth World Conference on Women (FWCW), Beijing 1995	S	Ministry of Women Development
Maternity Protection Convention (revised)	N	
Equal Remuneration Convention, 1951	N	
Ramsar Convention	S	Ministry of Environment
Framework Convention on Climate Change	S	- do -
Convention on Biodiversity	S	- do -
Agenda 21	S	- do -
Rio Declaration	S	- do -
International Plant Protection Convention, Rome 1951	S	Plant Protection Department, Ministry of Agriculture
Plant Protection Agreement for the South East Asia and Pacific Region, Rome 1956	S	PARC, Ministry of Agriculture
Convention for the Protection of World Cultural and Natural Heritage (World Heritage Convention), Paris, 1972	S	Pakistan National Commission for UNESCO
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington, 1973	S	Inspector General Forest, Ministry of Environment, Local Government and Rural Development
Convention on the Conservation of Migrating Species as Wild Animals, Bonn, 1979	S	Inspector General Forest, Ministry of Environment, Local Government and Rural Development

Convention on the Law of the Sea, Montego Bay, 1982	S	National Institute of Oceonography, Karachi
Vienna Convention for the Protection of Ozone Layer, Vienna, 1985	S	Ministry of Environment, Local Government and Rural Development
Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 1987 and amendments thereto	S	Ozone Cell, Ministry of Environment, Local Government and Rural Development
Agreement on the Network of Aqua Culture Centres in Asia and the Pacific, Bangkok, 1988	S	Ministry of Environment, Local Government and Rural Development
Convention on the Control of Trans-boundary Movement of Hazardous Waste and its Disposal, Basel, 1989	S	Ministry of Environment, Local Government and Rural Development
Convention on Biological Diversity, Rio de Janerio, 1992	S	Ministry of Environment, Local Government and Rural Development
United Nations Framework Convention on Climate Change, Rio de Janeiro, 1994	S	Ministry of Environment, Local Government and Rural Development
South Asia Cooperative Environment Programme (SACEP)	S	Ministry of Environment, Local Government and Rural Development
Commission on Sustainable Development (CSD)	S	Ministry of Environment, Local Government and Rural Development
Global Environment Facility	S	Ministry of Environment, Local Government and Rural Development
UN Convention to Combat Desertification (CCS) ratified in 1997	S	Ministry of Environment, Local Government and Rural Development

Human Development Index

Annex III

I.	Pakistan	India	Tajikistan	Average of Medium HD Countries
Life expectancy at birth (years)	64.4	62.9	67.5	66.9
Primary, secondary, tertiary enrolment (%)	43.0	54.0	69.0	65.0
GDP per capita ($ PPP)	1,715	2,077	1,041	3,458
Adult literacy rate (% age 15 and above)	44.0	55.7	99.0	76.9
Life Expectancy Index	0.66	0.63	0.71	0.70
Education Index	0.44	0.55	0.89	0.73
GDP Index	0.47	0.51	0.39	0.59
Human Development Index value	0.522	0.563	0.663	0.673
Human Development Index rank	135	128	109	-

Source: UNDP, *Human Development Report, 2000*

The Challenge Ahead

Annex-IV

Indicators	International Target	Pakistan Scenario		
		2001	**2004**	**2015**
Poverty and Employment				
Income Poverty	Halving the Share of the Population living in poverty from 30% in 1999-2000 to 15% by 2015	Rs. 24,000 per capita	Rs. 27,000 per capita per annum.	Rs.44,000
Extremely Poor	Reduce the proportion of the extremely poor to 12.5% of the world population by 2015	Absolute poverty in terms of food inadequacy is 30%	Absolute poverty in terms of food inadequacy will be reduced to 25%	10%
Productive Work	Develop and implement strategies that give young people everywhere a real chance to find decent and productive work	Unemploy-ment 10.4%	Unemploy-ment reduced to 10%	68%
Safety Nets	Provide special assistance to marginalised and vulnerable peoples	Zakat reaching out to 3 million persons	4 million	
Health and Reproductive Health				
Malnutrition	Reduce by half the proportion of children under five who are under weight by 2000	39% of children under 5 are malnourished	35% of children under 5 will be malnourished	20%

Health			70% of all citizens will have access to health services	95%
EPI Targets			Overall coverage of 6 major vaccines to 90%	100 %
			Reduction of Measles by 80%	100 %
Water and Sanitation		63% of all citizens have access to clean drinking water (83% in urban area; 53% in rural areas) (this figure is different in diff. parts of the doc)	66% of all citizens have access to clean drinking water (86% in urban areas; 56% in rural areas)	92%
Life Expectancy	To raise the average life expectancy to 60 years by 2000	62.9 year	64.4 years	69 years
Infant and Child Mortality	Reduce infant and child mortality rates by two third by 2015	90 per 1000 live births	65 per 1000 live births	30
Maternal Mortality	Reduce maternal mortality rate by three-quarters by 2015	400 by 100,000 live births	300 by 100,000 live births	180
Low Birth Weight Babies		25%	20%	12%
Reproductive Health	Provide access for all who need reproductive health services by 2015	CPR 30%	CPR 43%	

HIV/AIDS	Have by 2015 halted, and begun to reverse, the spread of HIV/AIDS, the scourge of malaria and other major diseased that afflict humanity			
			Reduction on Neo-Natal Tetanus by 2002	
Education				
Illiteracy	Reduce adult illiteracy rate between 1999-2000	-Adult literacy rate 52% -Female literacy rate 39% -Male literacy rate 64%	Adult literacy increased to 61% 47% 73%	84% 76%
Education	Enroll all children in primary school by 2015. To ensure that, by the same date, children boys and girls alike will be able to complete a full course of primary schooling; and that girls and boys will have equal access to all levels of education.	Primary enrolment Total 83% Boys 96% Girls 70%	Primary enrolment Total 94% Boys 102% Girls 85%	101 %
Women and Children				
Gender Equality	Promote gender equality and the empowerment of women, as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable			

Environment

Environment	Implement national strategies for sustainable development by 2005 so as to reverse the loss of environment resources by 2015			
Air Pollution		50% of population is affected by air pollution	60% will not be affected by morbidity producing affects of air pollution	90%
		Planned Sanitation facilities are available to 39%	43% (64% in urban and 31% in rural)	

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Macroeconomic Variables as Common Pervasive Risk Factors and Empirical Content of the Arbitrage Pricing Theory in Pakistan

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Abstract

The Arbitrage Pricing Theory (APT) of Ross [1976] is one of the most important building blocks of modern asset pricing theory, and the prime alternative to the celebrated Capital Asset Pricing Model (CAPM) of Sharpe [1964], Lintner [1965], and others. This paper briefly reviews the theoretical underpinnings underlying the APT and highlights the econometric techniques used to test the APT with pre-specified macroeconomic factors. Besides this, the prime objective of this study is to perform an empirical test of the APT in the Pakistani stock market by using pre-specified macroeconomic factors and employing Iterative Non-Linear Seemingly Unrelated Regressions (ITNLSUR). These empirical results will be, hopefully, helpful for corporate managers undertaking cost of capital calculations, for domestic and international fund managers making investment decisions and, amongst others, for individual investors who wish to assess the performance of managed funds.

1. The Arbitrage Pricing Theory - A Review

1.1. The Theory

After a number of theoretical, as well as, empirical failures of CAPM[1], Ross [op cit.] presents the APT as a testable alternative to the CAPM. Roll and Ross [1980] note that *the popularity of the CAPM is based much less on its theoretical underpinnings than upon the intuitive descriptions that surround it.* The basic argument behind the CAPM is that in a well functioning capital market, investors must be rewarded for assuming risks. In other words, to induce an investor to hold risky assets instead of riskless assets, like treasury bills, she or he must be promised a

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Acknowledgement: I would like to thank Minh Hang Le for helpful comments and discussion on an earlier version of this paper. Any remaining errors are the author's responsibility.

[1] See, for example, Roll[1977] for theoretical shortcomings of CAPM.

higher return than that of riskless assets. The CAPM assumes that the asset's returns are linearly related to a single common factor – the rate of return on the market portfolio. The APT is based on similar intuition but is much more general because it assumes that the random returns of each security is a linear combination of a small number of common, or pervasive, factors, plus an asset specific random term. Mathematically[2];

$$\tilde{R}_i = E(\tilde{R}_i) + \beta_{i1}\tilde{F}_1 + ... + \beta_{ik}\tilde{F}_k + \tilde{\varepsilon}_i \qquad (1.1)$$

where

$\tilde{R}_i$ is the random rate of return on the ith asset,

$E(\tilde{R}_i)$ is the expected rate of return on the ith asset,

β_{ik} is the sensitivity of the ith asset's returns to the kth common factor,

$\tilde{F}_k$ is the mean zero kth factor common to the returns of all assets under consideration, and

$\tilde{\varepsilon}_i$ is white noise that represents the asset specific risk or idiosyncratic risk associated with the ith asset.

In this kind of factor model, it is assumed that there are k systematic factors that are mainly responsible for the movements in the assets' returns. These factors are common to all assets; the components of return due to unsystematic factors such as firm-specific or industry events are represented by the idiosyncratic term.

The APT is derived under the following assumptions[3]:

1. Asset markets are perfectly competitive and frictionless;
2. All investors have homogenous beliefs;
3. Investors have monotonically increasing concave utility function;
4. The number of assets existing in the capital markets from which portfolios are formed is much larger than the number of factors i.e. $n > k$.

[2] CAPM could be viewed as a special case of APT.
[3] For a complete set of assumptions and derivation of the APT, see Ross (1976).

Given the above set of assumptions and with an additional no-arbitrage restriction, in equilibrium all the portfolios that can be selected from among the set of assets under consideration and that satisfy the conditions of (a) using no wealth and (b) and having no risk must earn no return on average. These portfolios that require no change in wealth are called arbitrage portfolios[4]. Mathematically, the zero change in wealth is written as:

$$\sum_{i=1}^{n} w_i = 0 \qquad (1.2)$$

If there are n assets in the arbitrage portfolio, then the additional portfolio return gained is:

$$\tilde{R}_p = \sum_{i=1}^{n} w_i \tilde{R}_i$$

$$\tilde{R}_p = \sum_i w_i E(\tilde{R}_i) + \sum_i w_i \beta_{i1} \tilde{F}_1 + ... + \sum_i w_i \beta_{ik} \tilde{F}_k + \sum_i w_i \tilde{\varepsilon} \quad (1.3)$$

Now,

1) Selecting percentage change in investment ratios that are small;

2) Diversifying across a large number of assets (this eliminates the idiosyncratic risk); and

3) Choosing weights, w_i , so that for each factor, k , the weighted sum of the systematic risk component, β_{ik} , approaches to zero.

Thus equation (1.3) becomes

$$\tilde{R}_p = \sum_i w_i E(\tilde{R}_i) \qquad (1.4)$$

The arbitrage portfolio, so constructed, has no risk (either systematic or unsystematic) and requires no new wealth. If the return on the arbitrage portfolio were not zero, then it would be possible to achieve an infinite rate of return with no capital requirement and no risk. But, as mentioned earlier, the derivation of the APT assumes the capital markets to be in equilibrium, and such an opportunity to obtain infinite returns without any risk and investment is not possible if the capital market is to be in equilibrium. Therefore, the equation (1.4) becomes:

[4] To form a portfolio that requires no wealth, one may short sell some assets or sell some already held assets and use the proceeds to buy other assets.

$$\tilde{R}_p = \sum_i w_i E(\tilde{R}_i) = 0 \qquad (1.5)$$

Ross [1976] shows that the algebraic consequences of the above equations is that the expected return vector must be a linear combination of the constant vector and the coefficient vectors. Algebraically, there must exist a set of k+1 coefficients, $\lambda_o, \lambda_1,....,\lambda_k$ such that

$$E(\tilde{R}_i) = \lambda_0 + \lambda_1\beta_{i1} + ... + \lambda_k\beta_{ik} \qquad (1.6)$$

where λ_k is the risk premium required by an investor per unit of risk due to unexpected shocks in the kth factor, and if there is a riskless asset with a riskless rate of return, R_f , then its sensitivity to the shocks in common factors would be β_{0k} and, we can write $R_f = \lambda_0$. By substituting equation (1.6) into equation (1.1)

$$\tilde{R}_i = R_f + \beta_{i1}(\tilde{F}_1 + \lambda_1)..... + \beta_{ik}(\tilde{F}_k + \lambda_k) + \tilde{\varepsilon}_i \qquad (1.7)$$

or in excess returns form

$$\tilde{R}_i - R_f = \beta_{i1}(\tilde{F}_1 + \lambda_1)..... + \beta_{ik}(\tilde{F}_k + \lambda_k) + \tilde{\varepsilon} \qquad (1.8)$$

The arbitrage pricing theory is much more robust than the capital asset pricing model for several reasons:

1. The APT makes no assumption about the empirical distribution of assets returns.

2. The APT makes no strong assumption about individuals' utility functions (at least nothing stronger than non-satiation and risk aversion).

3. Unlike the CAPM, the APT takes into account the effect of many common factors on assets' returns.

4. There is no special role of market portfolio in the APT.

1.2. The Empirical Tests of the AP

Although unlike the CAPM, the empirical test of the APT does not require market portfolio, but one important and rather difficult issue in the empirical tests of the APT is to find out the pervasive risk factors. Several methodologies have been adopted in this regard, for example,

factor analysis, pre-specified macroeconomic factors, factor mimicking portfolios, etc. As the prime objective of this paper is to test the APT in Pakistan with pre-specified macroeconomic factors, this paper will only briefly discuss the empirical tests of the APT with pre-specified macroeconomic factors[5].

1.2.1. The APT and Pre-specified Macroeconomic Factors

The fact that macroeconomic factors influence the stock market is well documented. For example, celebrated literature, like Lintner [1976], Modigliani and Cohn [1979], Chen, Roll, and Ross [1986], Fama [1981], and Antoniou et al. [1998], has focused on the impact of various macroeconomic variables on stock returns. The idea of using macroeconomic variables as proxies for the pervasive risk factors is very intuitive, as it makes sense to say that there is a co-movement between assets' returns and some economy wide factor, say, inflation. Although the statistical methods, like factor analysis, help to test the validity of the APT, but they *offer little in the way of economic intuition when attempting to interpret the estimated risk premia* [Priestley, 1996, pp. 870]. Starting with Chen, Roll, and Ross [1986], the researchers have been specifying, ***ex ante***, a set of macroeconomic variables as the proxies for common pervasive risk factors in the APT framework. But how should one specify, ***ex ante***, the macroeconomic factors that [may] have some relationship with assets' returns? To specify macroeconomic variables that may affect the stock returns, the researchers have utilised the traditional dividend discount model. These studies assume that stock prices '*p*' can be written as the expected discounted dividends:

$$p = \frac{E(d)}{r} \tag{1.9}$$

Where '*d*' is the dividend stream, '*r*' is the discount rate, and *E(.)* is the expectation operator. The above expression suggests that any economic variable that influenced the expected dividend stream or the discount factor would, in turn, affect the stock prices. Using this framework, many economy wide variables could be used as proxies of pervasive factors.

1.2.2 - Estimation of Factor Risk Premia

Another crucial issue in obtaining risk premia associated with macroeconomic factors is the methodology applied to test the APT. A vast number of techniques have been applied to test the multifactor APT. This

[5] For a detailed review of empirical tests of the APT, see Connor and Korajczyk [1995].

section presents a critical review of two of the most important methodologies i.e. two-step methodology and non-linear seemingly unrelated regression (NLSUR), which are used to obtain risk prices associated with pre-specified macroeconomic factors.

Two-Step Methodology:

The early focus of this cross-sectional methodology was to test the single factor model i.e. the CAPM [see, for example, Fama and Macbeth, 1973], but for the last two decades this methodology has been widely used to estimate the factor risk premia and asset sensitivities in the APT framework. In the first step of this approach, the estimates of true assets' sensitivities are obtained by using the following regression:

$$R_{it} - R_{ft} = \alpha_i + \sum_{k=1}^{K} \beta_{ik} f_k + \varepsilon_i \qquad (1.10)$$

Where 'R_{it}' is the vector of returns on the ith asset [portfolio] at time 't ', α_i is the constant, 'β_{ik}' is the ith asset's [portfolio's] sensitivity to the kth factor, 'R_{ft}' is the risk free return, and ε_i is the error term. In the second step, these estimates 'β_{ik}' of true betas are used as independent variables to obtain the estimates of factor risk premia. Mathematically;

$$R_{it} - R_{ft} = \gamma_i + \sum_{k=1}^{K} \lambda_k \hat{\beta}_{ik} + \nu_i \qquad (1.11)$$

In case of the CAPM, the term $\sum_{k=1}^{K} \beta_{ik} f_k$ is replaced by '$\beta_i R_m$', where 'R_m' is return on market portfolio. In the tests of the CAPM with two-step methodology, market index could be used as a proxy for the market portfolio [but, see also Roll, 1977, on market index as a proxy for the market portfolio]. On the other hand, there is no clear proxy for the common factors in the case of the APT. The early tests of the APT use factor analysis, principle components, or some variant to find out the common factors[6]. Starting from Chen, Roll, and Ross [1986], the researchers have been using pre-specified macroeconomic factors as a proxy for common risk factors. Some of the important studies that apply two-step methodology to estimate risk prices and assets' sensitivities with pre-specified macroeconomic factors are Chen, Roll, and Ross [1986], Chan, Chen, and Hsieh [1985], Ferson and Harvey [1991], Warga [1989], and Clare and Thomas [1994]. The overall conclusion of these studies is that there are a number of economy wide factors, like unanticipated inflation, industrial

[6] See, for example, Gehr [1978] or Roll and Ross [1980].

production, term structure, default risk etc., that carry a significant price of risk.

Problems with two-step methodology

a-Contemporaneous Correlation

The traditional two-step methodology is usually undertaken using Ordinary Least Squares (OLS)[7]. One of the essential conditions for the efficiency (minimum variance) of the OLS estimates is that there is no contemporaneous correlation between idiosyncratic returns [see, for example, Greene, 2000, pp.580-601]. Mathematically;

$$Cov(\varepsilon_i \varepsilon_j) = 0 \qquad \text{for all } i \neq j$$

Where 'ε ' is the error term from equation (1.10). If this condition does not hold, then, the resultant estimates of betas (the independent variables in the second step) will be inefficient and the associated standard error will be biased upward [Clare et al., 1998, pp. 1213]. But studies, like Connor and Korajczyk [1993, pp.1264], suggest that in reality there is a possibility of contemporaneous correlation. Therefore, the conclusion based on the two-step methodology, which does not accommodate contemporaneous correlation, will not be reliable.

b-Portfolio Formation & Errors-In-Variables (EIV)

The empirical tests that apply two-step methodology use portfolios instead of individual assets in the estimation process. One purpose of using portfolios in the two-step methodology is to eliminate the diversifiable risk [Clare and Thomas, 1994, pp. 317]. The second, and rather more important reason behind using the portfolios is to reduce the EIV problem [see, for example, Shanken, 1992]. The EIV problem occurs because in the second step, instead of using the true betas, the estimates of betas are used as independent variables. The empirical tests, like Friend and Blume [1970], of the two parameter model suggest that the betas of portfolios can be estimated more precisely

[7] See, for example, Chen et al. [1986].Some studies like Litzenberger and Ramaswamy [1979] also apply Weighted Least Squares and (WLS) or Generalised Least Squares (GLS). But, as Shanken [1992] suggests, these are not true WLS or GLS because the true covariance matrix or the error term is rarely known.

than those of individual assets. Therefore, we should use the portfolios rather than individual assets in the two-step methodology[8].

The EIV problem can be reduced, if not eliminated, by using the portfolios in the estimation process. But, the portfolio formation is a problem in itself as there are different techniques for forming portfolios. For example, beta sorted portfolios [see, for example, Fama and Macbeth, 1973], size sorted portfolios [see, for example, Chen, Roll, and Ross, 1986] or size based portfolios at the beginning of each year using asset returns of subsequent years [see Shanken and Weinstein, 1990]. The results of the APT are sensitive to the portfolio formation technique used, and there is an ambiguity about which technique to apply to form the portfolios [see, Clare and Thomas, 1994].

Given that the two-step methodology faces many problems, there is a need for a technique that avoids these problems. One such technique to estimate the factor risk premia in the APT framework is the use of Non-Linear Seemingly Unrelated Regressions (NLSUR)[9].

Non-Linear Seemingly Unrelated Regressions (NLSUR)

One important issue in the tests of the APT is the factor structure i.e. the form that the covariance matrix for the idiosyncratic returns takes. Ross [1976] uses strict factor structure (no contemporaneous correlation) in the derivation of the APT. Chamberlain [1983] and Chamberlain and Rothschild [1983] develop an asymptotical model, called approximate factor structure, which allows the non-diagonality in the covariance matrix of error terms. If the error covariance matrix follows an approximate factor structure but we impose strict factor structure, then too many factors may be identified [see, Trzcinka, 1986]. Therefore, it is crucial to explicitly allow for the approximate factor structure. Given an error covariance matrix structure that recognises contemporaneous correlation between the idiosyncratic returns, what we desire is a statistical model that will accommodate the approximate factor structure. One such methodology is the use of Zellner's[1962] seemingly unrelated regressions methodology that is extended by Gallant[1975] to accommodate the non-linearity in the models. Following Gallant [1975], Burmeister and McElroy [1985,1988] use the NLSUR approach to jointly estimate the assets' sensitivities and risk premia attached to pre-specified macroeconomic factors in the APT

[8] Also see, Litzenberger and Ramasway [1979] and Davidson and McKinnon [1993, section 7.2] for further details on EIV.

[9] Recently, this method has also been used to test the single factor model i.e. CAPM. See for example, Clare et al. [1998].

framework. Following are the advantages of this methodology over the traditional two-step methodology:

1. As the sensitivities and risk premia are estimated jointly, the EIV problem does not occur because we do not need to use the estimates of some true value as the independent variable.

2. As there is no EIV problem, there is as such no need to form portfolios and we can avoid the problem of selecting a particular portfolio formation technique.

3. This framework can be used to test, rather than impose, the restriction that APT imposes on the linear factor model [Antoniou et al., 1998, pp. 225].

4. When market portfolio is used as a pre-specified factor, then it should not be treated as an exogenous variable because the proxy used for the market portfolio is usually the market index, which is composed of similar securities that we use as exogenous variables i.e. returns on individual assets[10]. The NLSUR framework could be extended to non-linear three stage least squares (NL3SLS), which use simultaneous equation models and, therefore, accommodate the endogeniety of the market portfolio.

Due to the above advantages, this paper will employ an extension of NLSUR i.e. Iterative Non-Linear Seemingly Unrelated Regression (ITNLSUR), to estimate the risk premia associated with macroeconomic factors of Pakistan.

2. The Common Risk Factors for Pakistan

As mentioned in section 1, asset prices are commonly believed to react sensitively to the macroeconomic factors of the economy, which implies that there is systematic risk entailed by some economy wide factors. There are many studies that determine the risk price attached to macroeconomic factors of developed and less developed countries, for example, Chen, Roll, and Ross [1986] for the USA, Antoniou et al.[1998] for the UK, Priestley and Clare [1998] for Malaysia, and Brown and Otsuki [1990] for Japan. But in the author's knowledge, there is no study that determines the risk premia associated with the macroeconomic factors of Pakistan. By employing ITNLSUR estimation, this section will use the APT framework to find the risk premia associated with the macroeconomic factors of Pakistan.

[10] See Burmeister and McElroy [1988] for more on endogeneity of market portfolio.

2.1. Specification of Macroeconomic Variables

As mentioned earlier, the search for the potential sources of systematic risk for the APT usually starts with an evaluation of the traditional dividend discount model. While this approach opens up a plethora of possible candidates for systematic risk factors, we can use the evidence from previous tests of the APT for potential candidates. Most of the macroeconomic factors used in this paper are the same as those used by Chen et al.[1986] and Clare and Thomas[1994] (some of their macroeconomic variables are not used here due to non-availability of data for Pakistan). Table 2.1 presents the macroeconomic variables used as proxy for pervasive factors. Some of these macroeconomic variables are not used in the previous studies e.g. raw material prices, and domestic credit. These variables are used in this study because we believe that they may affect the discount rate in the dividend discount model i.e. equation (1.9). For example, an increase in domestic credit may be due to high demand of domestic credit, which may lead to an increase in domestic interest rates, and in turn an increase in discount rate, similarly an increase (decrease) in raw material prices could affect the revenue of firms that, in turn, would lead to a decrease (increase) in dividends.

Table-2.1: Macroeconomic Variables Used as Pervasive Risk Factors

Unexpected Inflation	(Change in the log of Consumer Price Index(CPI))
Money Supply	M1 in Banking Survey (MS)
Term Structure	Yield on long-term bond minus yield on short-term bonds.(TRM)
Exchange Rate	Pak Rupee to US$ rate (Market Rate)(EXC).
Industrial Production	Substituted by Manufacturing Production.(MP)
Domestic Credit	Domestic Credit (DCR)
Oil Prices	World Oil Prices (OP)
Raw Material	Raw Material Price Index (WPI)
Trade Balance	Visible Trade Balance (TB)

2.2. Data

The data for the above macroeconomic factors and for seventy randomly selected[11] securities listed in the Karachi Stock Exchange is monthly, covering the period April 1993 to December 1998. The data on all the macroeconomic factors (reported by OECD, IFC or IMF data series), and securities is obtained from Datastream International, UK. The excess returns on securities are calculated by subtracting one-month Treasury bill rate from each security's returns.

2.3. Unanticipated Shocks in Pervasive Factors

The empirical tests of APT with pre-specified macroeconomic variables, use unanticipated shocks or surprises in the macroeconomic variables, because the anticipated changes in the common macroeconomic factors are already included in the prices of securities and all the risk is due to unanticipated shocks. To date, three techniques have been employed to generate surprises in macroeconomic factors[12]:

a) The Rate of Change approach;

b) The Autoregressive (AR) and Autoregressive Integrated Moving-Average (ARIMA) approach; and

c) The Kalman-Filter approach.

In this paper, twelfth order AR model is employed to generate the surprises in the macroeconomic variables. The autoregressive (AR) approach assumes that investors forecast or make future expectations about macroeconomic variables, and use the AR technique to model these expectations. The residuals from these models are the surprises or unanticipated shocks to the particular variable. In the case of the AR approach, the time-series of macroeconomic variable is modelled as twelfth-order autoregressive process, and the residuals from the parsimonious version of this AR process are used as surprises [see, for example, Clare and

[11] Antoniou et al. [1998, pp.227] suggest that selecting securities in this manner raises the issue of survivorship bias which may make the estimated prices of risk conservative [see Greene, 2000, section 20.4, pp.927 for more on survivorship bias]. This problem can be avoided be forming portfolios of the stock. But, as mentioned in section 1, we do not know which method of portfolio formation is the best and the empirical results are vulnerable to the criteria of portfolio formation [see, for example, Clare and Thomas, 1994].

[12] See Priestley [1996] for the details and consequences of the use of different approaches to generate surprises.

Thomas, 1994]. The results of the parsimonious version of AR model, along with F-test and χ^2 values are presented in table 2.2. χ^2 values are Brauch-Godfrey (BG) test to check for first order autocorrelation in the residuals, and F-values test for the restrictions that insignificant lags are equal to zero. The results show that all the restrictions are easily accepted at 10% or lower level of significance, and the residuals are serially uncorrelated at 10% or lower level of significance, and therefore can enter as unanticipated shocks in APT estimation.

3. Empirical Content of the APT in Pakistani Stock Market

3.1. Specification of the APT as NLSUR

In the approximate factor structure, the error covariance matrix $\sum$ can be written as:

$$\sum = E(\varepsilon\varepsilon') = \begin{pmatrix} E(\varepsilon_1\varepsilon'_1) & E(\varepsilon_1\varepsilon'_2) & \cdots & E(\varepsilon_1\varepsilon'_n) \\ E(\varepsilon_2\varepsilon'_1) & E(\varepsilon_2\varepsilon'_2) & \cdots & E(\varepsilon_2\varepsilon'_n) \\ \vdots & \vdots & & \vdots \\ E(\varepsilon_n\varepsilon'_1) & E(\varepsilon_n\varepsilon'_2) & \cdots & E(\varepsilon_n\varepsilon'_n) \end{pmatrix}$$

Table-2.2: Parsimonious version of AR models for Macroeconomic Factors

1-Industrial Production(IP):

$$\Delta IP_t = \underset{(0.00052)^{**}}{0.001420} + \underset{(0.078355)}{0.13584}\,\Delta IP_{t-2} + \underset{(0.07842)}{0.16439}\,\Delta IP_{t-3} + \underset{(0.07824)}{0.200149}\,\Delta IP_{t-8}$$

$$\chi^2 = 0.3878^{\#}$$

2-Money Supply(MS):

$$\Delta MS_t = \underset{(0.00043)}{0.00072} + \underset{(0.06799)}{0.55557}\Delta MS_{t-1} + \underset{(0.06796)}{0.25302}\,\Delta MS_{t-3}$$

$$\chi^2 = 0.3673^{\#}$$

3- Domestic Credit(DCR):

$$\Delta DCR_t = \underset{(0.0002)}{0.0001} - \underset{(0.08074)}{0.36913}\,\Delta DCR_{t-1} - \underset{(0.0808)}{0.15451}\Delta DCR_{t-2}$$

$$\chi^2 = 1.0967^{\#}$$

4- Inflation (CPI):

$$\Delta CPI_t = \underset{(0.0003)}{0.000448} + \underset{(0.0729)}{0.34039}\,\Delta CPI_{t-1} + \underset{(0.0762)}{0.11812}\,\Delta CPI_{t-5} + \underset{(0.07570)}{0.17125}\,\Delta CPI_{t-7}$$

$$\chi^2 = 3.9171^{\#}$$

5- Term Structure (TRM):

$$\Delta TRM_t = \underset{(0.00025)}{-0.000003} + \underset{(0.08078)}{0.09448}\,\Delta TRM_{t-1} + \underset{(0.0772)}{0.16788}\,\Delta TRM_{t-12}$$

$$\chi^2 = 5.2310^{\#}$$

6-Oil Prices (OIL):

$$\Delta OIL_t = \underset{(0.16)}{0.00154} + \underset{(0.08168)}{0.15297}\,\Delta OIL_{t-6}$$

$$\chi^2 = 4.7844^{\#}$$

7- Trade Balance(TRB):

$$\Delta TRB_t = \underset{(0.006)}{0.0204} + \underset{(0.0670)}{0.5598}\,\Delta TRB_{t-1} + \underset{(0.0692)}{0.2688}\,\Delta TRB_{t-3} + \underset{(0.0461)}{0.1455}\,\Delta TRB_{t-11}$$

$$\chi^2 = 4.6538^{\#}$$

8-Exchaneg Rates(EXC):

$$\Delta EXC_t = \underset{(0.0017)}{0.00233} - \underset{(0.0491)}{0.1004}\,\Delta EXC_{t-10} + \underset{(0.04914)}{0.76643}\,\Delta EXC_{t-12}$$

$$\chi^2 = 0.8084^{\#}$$

9-Raw Material (RAW):

$$\Delta RAW_t = \underset{(0.0007)^{**}}{0.00134} - \underset{(0.0725)}{0.35207}\,\Delta RAW_{t-1} + \underset{(0.0676)}{0.2199}\,\Delta RAW_{t-5} + \underset{(0.0661)}{0.1331}\,\Delta RAW_{t-8}$$

$$\chi^2 = 1.5746^{\#}$$

a) # denotes BG test where critical values of $\chi 2$ are 6.634, 3.841,and 2.705 at 1%, 5% and 10% level of significance respectively. If the computed value is greater than the critical value, then the residuals are autocorrelated and vice versa.

b) ** denotes that figures in parenthesis are standard errors

Unlike the strict factor structure, the above covariance matrix assumes that the non-diagonal terms could be non-zero [see, for example, Greene 2000, pp.595-603]. Rewriting equation (1.1), the T equations for ith security are given by [see, Burmeister and McElroy, 1985, for further details]:

$$R_i = \lambda_o \iota_T + \sum_{k=1}^{K} (\lambda_k \iota_T + \tilde{f}_k)\beta_{ik} + \varepsilon_i \qquad (3.1)$$

$$R_i = \lambda_o \iota_T + X(\lambda)B_i + \varepsilon_i \qquad (3.2)$$

Where;

ι_T is a T vector of ones;

$R_i = (R_i(1),.....,R_i(T))'$ is T×1 i =1,2,.....,N

$\tilde{f}_k = (\tilde{f}_k(1),....., \tilde{f}_k(T))'$ is T×1 k =1,2,.....,K

$\varepsilon_i = (\varepsilon_i(1),.....,\varepsilon_i(T))'$ is T×1 i =1,2,.....,N

$B_i = (\beta_{i1},....., \beta_{ik})'$ is T×1 i =1,2,.....,N

$X(\lambda) = [\lambda_1 \iota_T + \tilde{f}_1,....., \lambda_K \iota_T + \tilde{f}_K]$ is T×(K+1)

Stacking equation (3.2) for N securities yields

$$R = [I_N \otimes X(\lambda)]B + \varepsilon \qquad (3.3)$$

Where I_N is an identity matrix, and $\otimes$ is Kronecker product.

Provided that T and N are sufficiently large relative to K so that NT>NK+K+1, Burmeister and McElroy [1985] propose to obtain NLSUR estimates of sensitivities and risk premia in the following steps:

1) estimate equation (3.1) using security-by-security OLS by replacing λ_k with a constant;

2) use the residual vectors from step one to get an estimate of $\sum$ with the following formula:

$$\hat{\Sigma} = [(1/T)\hat{e}_i'\hat{e}_j]$$

where $\sum$ is true N×N covariance matrix of the error terms, $\hat{\Sigma}$ is an estimate of $\sum$, $\hat{e}_i'$ is the transpose of residual vector with respect to security ' i ', and $\hat{e}_j$ is the residual vector with respect to security ' j '.

3) in step three, the consistent estimates of true assets' sensitivities and risk premia are obtained by minimising the residuals from stacked regression (3.3) the following expression :

$$\min_{B,\lambda} \varepsilon'(\hat{\Sigma} \otimes I_T)\varepsilon \qquad (3.4)$$

The NLSUR estimates can also be obtained through iterative algorithm. To estimate the factor risk premia and assets' sensitivities jointly through iterative algorithm. Burmeister and McElroy [1985, pp.274] propose to repeat the three steps outlined in section 2.3 and iterate until the system converges to its optimum value. The estimates obtained from iterative process i.e. ITNLSUR, are superior to simple NLSUR estimators because in addition to consistency of the NLSUR estimators, the ITNLSUR estimators are asymptotically efficient [Burmeister and McElroy, 1985, pp.274].

3.2. ITNLSUR Estimation for Factor Risk Premia

WinRats-32 is used in this study, to jointly estimate the factor risk premia 'λs' and assets sensitivities 'βs' through ITNLSUR [see Rats manual, section 14-172]. To obtain the risk premia and assets' sensitivities with ITNLSUR, we minimise the expression (3.4) and iterate until the system converges to its optimum value. For the iterative process i.e. to move from one point to the next, the procedure outlined in Berndt et al.[1974] is applied [Rats manual, section 14-171]. For the iterative process to converge toward the optimum value of the function, we need to provide some starting values for βs and λs, and the better the initial values, the easier it is for the system to converge towards its optimum value. To obtain the initial values for βs and λs, first the sensitivity coefficients are obtained through security-by-security OLS regressions using unanticipated shocks as independent variables. Then these estimates of coefficients and the innovations in macro factors are used as inputs in equation (1.6) to obtain the initial values for the λs [see, Lajeri and Dermine, 1999, section 5.1].

Finally, these βs and λs are used as initial values in the iterative algorithm to jointly obtain the estimates risk prices associated with the pre-specified macroeconomic variables and assets' sensitivities from the system of sixty securities.

3.3. The APT Pricing Restriction

One advantage of using the non-linear joint estimation technique to obtain estimate of risk prices and assets' sensitivities is that "... this framework can be used to test rather than impose the non-linear, cross equation restrictions the APT places on a more general, unrestricted linear factor model [Antoniou et al., 1998, pp. 225]". The linear factor model with k factors can be described as:

$$\rho_i = \alpha_i + \sum_{k=1}^{K} f_k \beta_{ik} + \varepsilon_i \qquad (4.1)$$

By comparing equation (4.1) and (1.7), it is obvious that the APT impose non-linear[13] restrictions on the linear factor model, namely:

$$\alpha_i = \sum_{k=1}^{K} \beta_{ik} \lambda_k \qquad (4.2)$$

The APT restriction (4.2) can be easily tested using a likelihood ratio test [see, for example, Priestley, 1996].

3.4. Empirical Results

The empirical results from the ITNLSUR estimation of the risk prices associated with the macroeconomic factors of Pakistan, are presented in Table 3.1. The t-ratios in Table 3.1 suggest that four macroeconomic factors carry a risk premium in the Pakistani stock market, these factors being unexpected inflation, exchange rate, trade balance, and oil prices. The χ^2 value i.e. likelihood ratio test shows that the APT restrictions can be easily accepted at the 5% significance level.

[13] The restrictions are non-linear because λ is unknown. See Burmeister and McElroy [1985, pp.273].

Table-3.1: Estimates of the Risk Premia carried by the significant factors

λ_1 (unexpected inflation)	0.001801**	(-2.430)
λ_2 (money supply)	0.000350	(0.139)
λ_3 (exchange rates)	0.000903***	(3.401)
λ_4 (term structure)	0.001020	(0.305)
λ_5 (trade balance)	0.001402**	(1.968)
λ_6 (industrial production)	0.004512	(0.023)
λ_7 (raw material)	0.001282	(0.753)
λ_8 (oil prices)	0.007640*	(1.708)
λ_9 (domestic credit)	0.001021	(0.021)
APT Pricing Retriction		
$H_o : \alpha_i = \sum_{k=1}^{K} \beta_{ik}\lambda_k$ I	χ^2 (50)=54.231#	

Figures in parenthesis in the above table are t-ratios: * significance at 10%, ** significance at 5%, *** significance at 1%. The statistic testing H_o is a likelihood ratio test, distributed χ^2 (.) under null. Approximate 5% critical value is 83.61.

4. Conclusion

In this paper, we have examined the risk-return relationship of the Pakistani stock market. The purpose of the study was to examine whether the APT has any empirical validity for the Pakistani stock market. Our results suggest that domestic macroeconomic factors - unexpected inflation, exchange rate, trade balance, and oil prices - are a source of systematic risk in the Pakistani stock market, and the APT pricing restrictions hold. These results can help corporate managers undertaking cost of capital calculations, domestic and international fund managers making investment decisions and, amongst others, individual investors who wish to assess the performance of managed funds. These results, however, do not suggest that the macroeconomic variables that are found to have significant risk premia in this paper are the only factors that carry systematic risk, but these results could be used as a benchmark to help the key market players in the Pakistani stock market upgrade their knowledge about the phenomenon of risk and return.

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Ricardian Equivalence Hypothesis: Some Empirical Tests for Pakistan Based on Blanchard-Evans Models

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During the last three decades, the Ricardian Equivalence Hypothesis (REH) has been an important theme of economic research both theoretical and applied in the industrial countries especially the US. However, very limited work has been done in the developing countries to test the validity and consistency of this hypothesis. In this paper an attempt has been made to present some empirical tests of the hypothesis for Pakistan using the macroeconomic data for the period 1960-88 based on the standard Blanchard-Evans Models of intertemporal allocation of resources as affected by the perceptions of the consumers about debt accumulation. The paper has been divided into three parts. In part-I, a brief introduction to the Ricardian Equivalence Hypothesis as well its origins has been delineated. In part-II, the Blanchard (1985) Model has been outlined along with the testable hypotheses as derived by Evans (1988). Part-III summarily presents the results of the Blanchard-Evans Models as applied to Pakistan data. These results fail to validate the Ricardian Equivalence Hypotheses for Pakistan. However the results are sensitive to the manner in which the critical variable namely "wealth" is defined and the manner in which the models are estimated. Therefore, further research is required on the subject especially in the contest of Pakistan's economy which has accumulated large public debt so as to analyse precisely the extent to which public debt is discounted by the consumers as future tax liabilities.

Part-I

Ricardian Equivalence Hypothesis

The Ricardian Equivalence Hypothesis (REH) postulates that under certain circumstances and for a given path of expenditures, the substitution of debt for taxes does not affect private sector wealth and consumption. This hypothesis is based on the premise that debt financing is only a change in the timing of taxation that has no impact on private consumption if the present value of the stream of taxation remains unchanged. Since REH has far reaching implications for the efficacy of fiscal policy in demand

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management of an economy, it has been a subject of extensive theoretical and empirical research in the industrial countries, especially the U.S. However, very limited work has been undertaken in the developing countries to test the validity of this important hypothesis of public finance.

The fundamental logic underlying this hypothesis of debt neutrality was originally presented by David Ricardo (Sraffa, 1951) in Chapter XVII entitled: *"Taxes on Other Commodities than Raw Produce"* of his celebrated *"The Principles of Political Economy and Taxation"*. Although Ricardo explained why government debt and taxes could be equivalent, he never sponsored the case for unlimited issue of government bonds. In fact, he warned against the consequences of continuous fiscal deficits in the following words: "From what I have said, it must not be inferred that I consider the system of borrowing as the best calculated to defray the extraordinary expenses of the state. It is a system which tends to make us less thrifty to blind us to our real situation."

The question of debt vs. taxes has important repercussions for the theory dealing with national income determination. In this theory, the aggregate consumption function plays a fundamental role, because aggregate consumption is often specified to depend on contemporaneous aggregate disposable income and on aggregate wealth. The question is whether the public's holding of bonds issued by the government should be treated as part of aggregate wealth. If consumers recognise that these bonds, in aggregate, represent future tax liabilities, then these bonds would not be part of aggregate wealth. If, on the other hand, consumers do not recognise or for some reason do not care about the implied future tax liabilities associated with these bonds, they should be counted as part of aggregate wealth in an aggregate consumption function. This question was recognised by Patinkin (1965) and he specified that a fraction k of the stock of outstanding government bonds is to be treated as wealth. Under the RE view, k would be equal to zero; under the view that consumers ignore future tax liabilities, k would be equal to one. Bailey (1971) also dealt with the question of whether future tax liabilities affect aggregate consumption in a model of national income determination, though his formulation of the aggregate consumption function does not explicitly include aggregate wealth. Despite this limitation, Bailey's model is one of the earliest attempts which recognise the role of public bonds in consumption and income determination.

The current debate on REH has its roots in a seminal paper by Barro (1974). In an overlapping generation model in which individuals have an infinite life span but altruistic bequest motives, Barro shows that if there

exists a chain of effective transfers between generations, there cannot be any net-wealth effects on aggregate demand. Formally an individual of generation *i* maximises

$$Ui\ (Ciy,\ Cio,\ U^*i\ +1)$$

subject to a first period budget constraint of

$$W - Ti = Ciy + Aiy \qquad (i)$$

And a second period budget constraint of

$$Ai,y(1+r) + Ai\text{-}1,o\ (1+r) = Ci,o+Ai,o \qquad (ii)$$

Where Ui is the utility of generation i, Ci is the consumption of generation i, Ti are taxes and Ai are the assets of generation i. The subscripts y and o refer to the period when the individual is young and then old respectively. Wage earnings are denoted by W, while the real rate of interest is given by r, and U* i+1 indicates the utility of the next generation – i.e. of descendents.

In this framework, the consumption and asset demand of the old and young can be written as functions of their net-of-tax bequests, wages and interest. The combination of constraints (i) and (ii) leads to total lifetime budget constraint given by

$$W(1+r) + Ai\text{-}1,o\ (1+r) = Ci,y\ (1+r) + Ci,o + Ai,o \qquad (iii)$$

This implies that the maximum utility level of an individual is indirectly determined by his wages, his bequest from his parents, and the interest rate. Barro then makes use of equation (iii) to prove his debt-neutrality hypothesis by showing that generation *i* can easily offset the actions of the government by increasing its bequest leaving the net bequest to his heirs unchanged. In doing so, the entire profile of market equlibria is unchanged and the government deficit is neutral. The same results occur if the analysis is extended to taxes being paid by generations further in the future.

Barro's model of debt-neutrality has invited wide-spread criticism both on theoretical and empirical basis while numerous extensions and endorsements of his original model have appeared which attempt to rehabilitate the REH. The proponents of Keynesian tradition believe that changes in stock of government debt and in the timing of taxes will have an impact on the private sector behaviour as well as the economy's equilibrium

allocations. Their contention is that the individuals suffer from fiscal illusion and as such cannot fully anticipate the future taxes embodied in the currently issued public bonds. Moreover, the possibilities of changes in government stock being accompanied by shifts in government spending cannot be ruled out in the practical world and this would automatically annul the logic underlying REH. The extent of monetisation of the public debt is likely to have its impact on the domestic price level, interest rates and consumption behaviour.

The literature on theoretical and empirical aspects of Ricardian Equivalence Hypothesis (REH) has grown exponentially in the decades of the eighties and nineties. Most of the studies on REH have their focus on advanced countries specially the US, but these studies have not succeeded in resolving the controversies associated with this important hypothesis.

The main studies which find support for REH are those of Kochin (1974), Barro (1978), Tanner (1979), Seater (1982), Kormendi (198), Aschauer (1985), and Seater and Mariano (1985). These studies find no evidence of there being an increase in consumer sprending resulting from a higher level of government debt. On the other hand, Feldstein (1978, 1979, 1982), Blinder and Deaton (1985), Boskin and Kotlikoff (1985), and Modigliani and Sterling (1986) produce empirical results which contradict the basic logic of REH. Evans (1988) reviews the studies mentioned above and points out that none of these studies derives the consumption function it estimates from a well-specified model that nests both Ricardian equivalence and an alternative in which households regard government debt as net wealth. For example, many of the studies motivate the models that they estimate by appealing to the life cycle model, which does not nest Ricardian equivalence. Still others are based on the permanent-income model, which does not nest any alternative to Ricardian equivalence. However he finds Blanchard (1985) as one of the few models in the literature that does nest Ricardian equivalence and such an alternative. Depending on whether a crucial parameter is zero or positive, households have infinite horizons, internalise all future generations, and exhibit Ricardian behaviour; or they have finite horizons, are at least somewhat disconnected from future generations, and exhibit non-Ricardian behaviour.

Evans (1988) examines the basic implications of Blanchard's paper but finds no evidence from the US data for Blanchard's alternative to Ricardian Equivalence. Thus he finds the consumption behaviour of US households in line with the basic logic of REH.

For developing countries, there is hardly any meaningful study which tests the fundamental postulate of Ricardian Equivalence. Kazmi (1991) is one of the early attempts which empirically examines the validity of Ricardian Equivalence for Pakistan using macroeconomic data for the period 1960-88. This study is followed by Kazmi (1992, 1994 and 1995) which taken together reject the relevance of REH for a developing country like Pakistan.

Part II

Blanchard-Evans Models

In this section, the Blanchard (1985) model is outlined as refined and extended by Evans (1988). It would be appropriate therefore to call it the Blanchard-Evans Model and while outlining the model here, only minor changes are made in the overall derivation and system of equations as incorporated in Evans (1988). This is imperative to maintain the consistency of the model.

Evans first discusses the basic assumptions of the Blanchard model namely that households face perfect capital and insurance markets but have finite horizons because a fraction μ of them dies during such period. Given these assumptions and some assumptions about preferences and the distribution of income and wealth, the aggregate consumption function assumes the form:

$$C_t = \alpha\left[\left(1+R_t\right)A_t - 1 + \sum_{i=0}^{oo}\left(1-\mu\right)^i \beta_{it} E_t W_{t+i}\right] \qquad (1)$$

Where C_t is aggregate consumption during period t, A_{t-1} is the stock of assets outstanding at the end of period t-1, R_t, is the real holding-period yield during period t on the assets carried over from period t-1, E_t is the expectations operator conditional on the information known by households during period t, W_t, is aggregate disposable wage income during period t, $\beta_{0t} \equiv 1$,

$$\beta_{it} \equiv \frac{1}{\prod_{j=1}^{i} 1+F_{jt}}, i > o \qquad (2)$$

F_{jt}, is the forward real interest rate in period t on bonds that will be issued in period $t + j - 1$ and that will mature in period $t + j$, and α and μ are parameters satisfying $0 < \alpha < 1$ and $o \leq \mu < 1$. Households treat the term in brackets as wealth, consuming the fraction α of it every period. Wealth equals A_{t-1}, the market value of all assets that have been accumulated, plus $W_t + R_t A_{t-1}$, current disposable income plus $\sum_{i=1}^{\infty}(1-\mu)^i \beta_{it} E_t W_{t+i}$, the expected present value of the future disposable wage income that will be received by current households. If $\mu > 0$, households discount taxes at a higher rate than they discount future interest income. In other words, one unit of taxes in period $t + i$ has the present value $(1 - \mu)^i \beta_{it}$ which is smaller than β_{it} the present value of one unit of interest income.

The aggregate budget constraint is

$$_{t}A_{t} \qquad _{t} \qquad A_{t} \tag{3}$$

Where Δ is the difference operator. Equation (3) states that aggregate disposable income $W_t + R_t A_{t-1}$ can be either consumed or accumulated as assets. It is assumed that the following variant of the expectations theory of the term structure holds:

$$_{t}R_{t} \quad A_{t} \qquad _{iE}E_{1}A_{t} \tag{4}$$

Using equation (3) to eliminate W_t, W_{t+1}, $W_{t+2,}$ from equation (1) and substituting from equation (4) results in

$$C_t = \alpha \sum_{i=o}^{oo} (1-\mu)^i B_i E_t (C_{t+i} + \mu A_{t+i}), \tag{5}$$

Consumption is therefore increasing in $E_t A_t$, $E_t A_{t+1}$, $E_t A_{t+2,}$ .... unless Ricardian Equivalence holds and $\mu = 0$. Consequently, the higher the households expect the future path of the government debt to be, *ceteris paribus*, and hence the higher are $E_t A_t, E_t A_{t+1} E_t A_{t+2}$ ..... the more households consume.

Evans then incorporates the common assumption in the consumption literature that real interest rates are constant and equal at every horizon. This assumption implies that for every $_{i}$ and $_{t}$

(6)

$$\beta_{it} = \beta_{i,}$$

Where β is parameter satisfying 0 < β < 1. Substituting equation (6) into equation (5) yields

$$Ct + \alpha \sum_{i=o}^{oo} (1-\mu)^i \beta i^i E_t (C_{t=i} + \mu A_{t=i}), \qquad (7)$$

Lagging equation (7) one period, multiplying both members by 1/(1 - μ), subtracting the resulting equation from equation (7) and arranging yields

$$\frac{\qquad}{(\qquad)} \qquad \frac{\qquad}{(\qquad)} \qquad (8)$$

where

$$U_t \equiv \alpha \sum_{i=0}^{00} (1-\mu)^i \beta i (E_t - E_{t-1})(C_{t+i} + \mu A_{t+i}) \cdot \qquad (9)$$

By construction, U_t is uncorrelated with all information available to households in period t – 1 and hence with C_{t-1} and A_{t-1}. Therefore, the ordinary least squares estimator of the coefficient on A_{t-1} has a zero probability limit *if* Ricardian equivalence holds and a negative probability limit if Blanchard's alternative holds.

Taking logarithms of both members of equation (5), using equation (2)– to eliminate β_{it}, and rearranging yields

$$\ln C_t = \ln \alpha + \ln(C_t + \mu A_t)$$

$$+ \ln E_t \left[1 + \sum_{i=l}^{oo} (1-\mu)^i \exp\left(\sum_{j=l}^{i} x_{it} \right) \right], \qquad (10)$$

Where $\chi_{it} \equiv \Delta \ln(C_{t+1} + \mu A_{t+1}) - f_{it}$ and $f_{it} \equiv \ln(1 + F_{it})$. Evans then shows that equation (10) can be approximated as

$$\Delta \ln C_t - r_t = \kappa - \left(\frac{1-\gamma}{\gamma} \right) \mu \left(\frac{A_{t-1}}{C_{t-1}} \right) + ut \qquad (11)$$

Where $r_t \equiv \ln(1+R_t), \gamma \equiv (1-\mu)\exp(\bar{x}, \bar{x}$ is the unconditional mean of $x_{1t}, k \equiv \bar{x} - [(1-\gamma)/\gamma]\ln[\alpha/(1-\gamma)]$, and

$$ut \equiv \sum_{i=0}^{oo} \gamma^i (E_t - E_{t-l})\Delta \ln(C_{t+l} + \mu A_{t+i})$$

$$-(1-E_{t-l})r_t - \sum_{i=1}^{oo} \gamma_{ii}(l - E_{t-1}) f_{it}$$

$$-(E_t - {}_l r_t - f_{lt-t}) - \sum_{i=l}^{oo} \gamma_i{}^i (E_{t-l} f_{it} - f_{i+lt-t}), \qquad (12)$$

By construction, $\Sigma_{i=0}\gamma^i(E_t - E_{t-1})\ \Delta\ln(C_{t+i} + \mu A_{t+i})$, $(1 - E_{t-1})r_{t,}$ and $\Sigma_{i=1}\gamma^i(1 - E_{t-1})f_{it}$ are uncorrelated with all information available to households in period t −1. It is assumed that the term premia $E_{t-1}r_{t-}f_{1t-1}, E_{t-1}f_{1t} - f_{2t} -_{1,} E_{t-1}f_{2t-}f3_{t-1}$, ...contribute negligibly to the variance of u_t. This will be true if the expectations theory of the term structure holds. It will also be approximately true if the expectational errors in equation (12) are much more variable then the term premia because, say, households cannot accurately predict the future evolution of rt,$f1t, f2t, f3t$,..... or $\Delta\ \ln(C_t = \mu A_t)$. In either case μ_t can be taken to be serially uncorrelated and uncorrelated with A_{t-1}/C_{t-1} as well. Therefore, the ordinary least squares estimator of the coefficient on A_{t-1}/C_{t-1} has a zero probability limit if Ricardian equivalence holds and negative probability limit if Blanchard's alternative holds.

Evans then suggests that ordinary least squares be used to estimate a regression of the form

$$C_t = \pi_o + \sum_{i=1}^{n} \pi_{ci} C_{t-i} \sum_{i=0}^{n} \pi_{di} d_{t-i} \sum_{i=0}^{n} \pi_{ki} \Delta \ln K_{t-i}$$

$$+ \sum_{i-0}^{n} \pi_{ri} r_{t-i} + \sum_{i-0}^{n} \pi_{gi} g_{t-i} + \hat{\upsilon}_{t,} \qquad (13)$$

Where D_t is the stock of government debt, $K_t \equiv A_t - D_t$, $c_{t \equiv} C_t/K_t$, $d_t \equiv D_t/K_t$, g_t is the ratio of government purchases to $K_{t,}$ the π's are regression coefficients, n is a nonnegative integer, and the $\hat{\upsilon}'s$ are the residuals from the regression. Let l_t and X_t be the set of information used by households in forming expectations at time t and the set of regressors

used in equation (13), respectively. It can be shown that if X_t is a subset of I_t, then

$$p\lim \hat{\upsilon}_t = \mu\left(\frac{\alpha}{l-\alpha}\right)\sum_{i=1}^{oo}\phi^i\left(Ed_{t+i}\middle|I_t - Ed_{t+i}\middle|X_t\right) + e_t \qquad (14)$$

In equation (14), the parameter ϕ satisfies $0 < \phi < 1$, and the error term e_t incorporates all effects that do not result from revised expectations of the future path of d_t and that cannot be predicted using X_t.

Now let us consider an intervention that, *ceteris paribus*, leads households to predict a higher (lower) future path for d_t than the one that can be predicted using X_t alone. Because the *ceteris paribus* restriction requires e_t to be zero, equation (14) implies that plim υ_t must be positive (negative) if $\mu > 0$ and must be zero if $\mu = 0$.

Simplifying equation (8) and (11), Evans establishes that the error term $\overline{U}_t$ in the equation

$$\overline{C}t = \delta\overline{C}_{t-1} + \theta A_{t+1} + \overline{U}t \qquad (15)$$

is serially correlated and correlated with $\overline{U}_{t-1}$ and A_{t-1} as well. Similarly, the error term $\bar{u}_t$ in the equation

$$\Delta \ln \overline{C}_t - \bar{r}_t = \varphi + \omega\left(\frac{A_{t-1}}{\overline{C}_{t-1}}\right) + \bar{u}_t \qquad (16)$$

is serially correlated and correlated with $A_{t-1}/\overline{C}_{t-1}$. In equations (15) and (16), δ, θ, ψ, and ϖ are parameters.

Evans then shows that under the null hypothesis of Ricardian Equivalence $\overline{U}_t$ is a first-order moving average, $\overline{C}_{t-2}$ and A_{t-2} are uncorrelated with $\overline{U}t$, and $\theta = 0$. In contrast, if Blanchard's alternative hypothesis holds, $\theta < o$. In other words, the Ricardian equivalence can be tested against Blanchard's alternative by examining the estimate obtained for θ.

Similarly, the estimated co-efficient of A_{t-1}/C_{t-1} in equation (16) would determine whether consumers are Ricardinan or otherwise. If the value of the co-efficient is zero, the Ricardian Equivalence Hypotheses is validated and if its value is negative, Blanchard's alternative would hold and

consumers would be classified as non-Ricardian. If the co-efficient turns out to be positive, consumer behaviour would be considered to follow the middle path between the two extremes.

Part-III

Testing of Ricardian Equivalence for Pakistan

To recapitulate, the theoretical model developed by Blanchard has shown that the planning horizon of the government and individuals recognised the possibility of death or dynastic extinction, so that the individual discount rate would be higher than that of the government leading to current taxation being treated differently from future taxation. Since this model nests both Ricardian and Non-Ricardian alternatives, it is useful for modelling deviations from strict equivalences. An extension and empirical testing of Blanchard's model has been attempted by Evans (1988) with results based on quarterly post-war U.S. data generally consistent with the Ricardian Equivalence Hypothesis . The following two equations are estimated by Evans to test REH:

$$Ct = aoCt\text{-}1 + a1At + et \qquad (i)$$

$$D\ ln\ Ct\text{-}1 - rt = b0 + b1\ ((At\text{-}1)/(ct\text{-}1))+vt \qquad (ii)$$

Where Ct and Ct-1 are current and lagged value of the per capita real consumption, At-1 is the market value of assets lagged by one period, rt = ln (1+Rt), Rt being the short term nominal rate of interest, et and vt are error terms and a0, a1, b0 and b1 are parameters.

In the Blanchard model, a1 and b1 are functions of an important parameter, μ defined as the rate at which households "die" and are replaced by households completely unconnected with the old ones. The full equations of the Blanchard-Evans model are:

$$Ct = (1\text{-}a)/(b(1\text{-}\mu))\ Ct\text{-}1 - (a\mu)/b(1\text{-}\mu)\ At\text{-}1 + ut \qquad (iii)$$

$$DlnCt - rt = ko - (1\text{-}k1)/(k1)\ \mu\ (At\text{-}1)/(Ct\text{-}1) + vt \qquad (iv)$$

The magnitude of μ is thus critical in determining whether consumers behave according to Ricardian Equivalence or not. If μ is zero, households act as if they are infinitely lived or they fully care for the welfare of the future generations through intergenerational transfers. If μ is somewhat above zero, households behaviour reflects long but finite horizons

indicating that they are somewhat disconnected from their descendants. According to Blanchard, if μ is nearly one, households act as if "they are disconnected from their own biological selves. Therefore, μ measures not only the finiteness of life and the disconnectedness of generations but also the myopia with which households foresee future taxes. In addition, μ serves as a metaphor for how imperfectly human capital markets operate."

The crucial test of Blanchard-Evans model is that if a1 and b1 turn out to be zero, the consumers belong to the Barro-Ricardo category. However, if they are negative and significant, they would be Non-Ricardian. If a1 and b1 are positive, the consumers' behaviour could be considered as a middle path between the two extremes of pure Ricardian and Non-Ricardian positions.

The OLS estimates of consumption function for Pakistan based on the Blanchard-Evans models using different definitions of the wealth variable are given in Table I and Table II. In equation 1 of Table 1, the wealth variable which is defined so as to include public debt, money supply (M2) and capital stock, has a co-efficient equal to 0.034 which is not significant at the 5% level, implying that consumers are strictly Ricardian. When wealth (A') is defined in a more restricted sense such that it includes public debt and money supply, then the regression co-efficient of A' assumes a positive value which is significant at the traditional 5% level, as is evident from equation 2. When wealth is defined in terms of money supply (M2) only, the co-efficient of the lagged variable is again positive and significant (equation 3). Therefore, the results of the last two equations support neither the Ricardian nor the non-Ricardian position. In fact, the consumers follow the middle path between the two diametrically opposed situations.

In Table II, results of equation (ii) of Blanchard-Evans models are presented. In this case, the dependent variable is the difference between growth rate of real per capita consumption and the term rt = log (1+Rt) where Rt is the short run nominal interest rate, while the ratio of wealth stock to the consumption per capita lagged by one year is the independent variable. In equation 1 of Table II, we use the wealth definition as used in equation 1 of Table I and find the co-efficient of At-1/(Cp)t-1 to be positive and significant at the 5% level, which implies that RE proposition does not hold. The reasonable value of R2 (0.426), D.W equal to 1.608 and F-statistics equal to 21.045 indicate that the fit of the equation is quite good. In equation 2, wealth is defined to consist of debt and M2 only, giving parameter estimates of 0.016 which is not significant at the 5% level, an indication that RE holds. However, the low value of R2, DW and F-statistics of the equation do not permit much confidence to be placed in the

parameter estimates. Similar conclusions can be drawn from equation 3, where wealth is defined to include only M2 and the values of R2, D.W and F statistics are too low to provide any reasonable level of confidence in the results of the equation. In short, virtually all variants of the Blanchard-Evans model as applied to Pakistan data reject REH.

The above results indicate that the Ricardian Equivalence Hypothesis is an extreme and oversimplified generalisation and a very rough approximation of consumer behaviour which takes into account the public debt and the bonds issued to realise that debt. As part of intertemporal allocation of resources between consumption and savings, therefore, further research is required to test the validity of this important hypothesis of public finance, especially for developing countries like Pakistan.

Similar conclusions about consumer behaviour have been derived in Kazmi (1995) a study about tax-discounting in Pakistan, which suggests that consumer response to fiscal policy reflects neither the extreme Barro like rational anticipation of future tax liabilities nor extreme type of fiscal myopia. It follows a middle path between the two extremes.

Table-1: Tests of Ricardian Equivalence

Dep. Var: CP= Real Per Capita Private Consumption

	OLS	**OLS**	**OLS**
C	-36.646 (-0.844)	23.894 (1.581)	24.794 (1.769)
(CP)t-1	0982 (17.684)	0.845 (10.629)	0.806 (10.042)
At-1	0.034 (0.910)	-	-
A't-1	-	0.220 (2.399)	-
A"t-1	-	-	0.374 (2.866)
R^2	0.983	0.986	0.987
D.W	1.570	1.4178	1.465
F	596.680	942.966	1019.290
SSR	5904.700	4821.170	4464.550

Definitions:

A: Wealth variable which includes public debt (privately held), M2 and capital stock (K)

A': Wealth variable which includes public debt (privately held) and M2

A": Wealth variable which includes M2 only

Table-2: Tests of Ricardian Equivalence

DEP. VAR: Dln Cp - rt

	OLS	**OLS**	**OLS**
C	-0.225 (-5.377)	-0.045 (-0.657)	-0.011 (-0.169)
At-1/(Cp)t-1	0.052 (4.587)	-	-
A't-1/(Cp)t-1	-	0.016 (0.144)	-
A"t-1/(Cp)t-1	-	-	-0.054 (-0.377)
R^{-2}	0.426	-0.038	-0.033
D.W	1.608	1.119	1.229
F	21.045	0.21	0.142
SSR	0.27	0.049	0.049

Definitions:

A= Wealth variable which includes debt, M2 and capital stock.

A'= Wealth variable which includes debt and M2.

A"= Wealth variable which includes M2 only.

DlnCp = Annual growth rate of consumption (real per capita).

rt= Log (1+Rt)

Rt= Short run nominal interest rates.

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Socioeconomic Aspects of Child Labour- A Case Study of Children in Auto Workshops

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Abstract

Federal Minister for Labour Manpower and Overseas Pakistanis, Omar Asghar Khan has announced the draft of the labour policy. The policy focuses on the law to eliminate child labour in the country. According to the Minister the law would be implemented from January 2001 and before the year 2005 there would be no child or bonded labour in Pakistan. Moreover, Under ILO obligation Pakistan has to achieve the objective of elimination of child and bonded labour by the year 2005. ILO plans to impose sanctions on the exports of those countries where child and bonded labour continues. Furthermore, the country has to abide with the convention of the International Labour Organization as a member of this club[1].

Most of the studies about child labour in Pakistan are based on micro-data. The present study/survey is another addition to the previous studies with some additional variables. The focus of the study is socio-economic aspects of child labour in auto-workshops, as 18 per cent of child labour is engaged in this establishment[2]. Some comparisons between the conclusions of the present survey and that of the previous ones have also been made. On the basis, policy recommendations have also been proposed.

Introduction

Child labour is prevalent in Pakistan in all sectors of the economy, though it mostly exists in the informal sector of employment and in the home-based industry. Pakistan is a developing country with per capita income of US$ 480 and 12 per cent of the population lives below an income of US$ 1 per day[3]. Pakistan has introduced legislation to eliminate child labour. Pakistan as a member of the ILO has signed a number of conventions. Even though various conventions and seminars have been held in the country, the problem still exists.

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[1] The Daily *"News"* 24 November, 2000

[2] NCCR-UNICEF [1998] Enforcement of Employment of Children Act 1991 in the North West Frontier Province, Pakistan

[3] UNICEF [1999] State of the World's Children 1999.

The major sectors absorbing child labour in the country are manufacturing, transport, trade, agriculture, construction, and services. Child labour in the manufacturing sector (small scale and informal sector) is found in the sports industry, surgical goods industry, cottage industry, chemical industry, power looms, footwear industry, ***bidi*** making[4], fisheries, carpet weaving, engineering and iron shops, furniture and fixtures. In the construction sector child labour is engaged in stone quarrying, building and road construction, steel shops, and the brick kiln industry. In the transport sector, child labour is found in auto workshops, service stations, and in garages as helpers, porters, loaders, and cleaners,. In the trade sector, it is found as shop assistants and street vendors. The agriculture sector absorbs child labour in fisheries, forestry, dairy and poultry farming, and agricultural labour. In the services sector child labour is found as domestic servants, cobblers, watch makers, electricians, mechanics, painters, tin packers, paper pickers, and trash pickers. It is found in hotels and restaurants as service boys, in laundry shops, barber shops, tailoring and embroidery shops as well.

Pakistan is essentially an agrarian economy, with most people depending on some form of agricultural activity for their livelihood. Within this context, it is common to find children playing an important economic role within the family. In the rural areas, agriculture is the main occupation, absorbing more than three-quarters of child labour. In urban areas, about three-fifths of child labour is engaged in production activities. Moreover, the rural and urban areas have different socio-economic conditions, so the determinants of child labour vary to some extent.

The estimates of child labour in Pakistan vary widely. Hussain [1985] estimated 14 million child workers, which makes 40 per cent of the child population of the country. Cochrane *et al* [1990] have calculated 31 per cent child labour force participation for boys and 7 per cent for girls in the age group 10-14 years. Ahmed [1991] referred to the *Economic Survey 1988-89* and put the number of working children around 2.194 million in the age group 10-14 years, of which 2.01 million are actually working and 0.184 million seek work. He stated that the actual figure must be much higher as children under 10 years of age are not covered by this official estimate. Sathar [1993] has estimated 19 to 25 per cent of male child workers and 22 to 32 per cent of female child workers in the country.

Mahmood *et al* [1994] have estimated the magnitude of child labour in the country in the age groups of 5-9 years and 10-15 years. The children in the age cohort 5-9 years are most vulnerable to child labour, their physical, mental and conceptual development being critically jeopardised. In the age group of 5-9 years, 39 per cent of the total population of children

[4] Curling tobacco leaves to smoke.

in this age group works. In the age group of 10-15 years, 77 per cent of the population of children works. For the entire age cohort of children 5-14 years, 58 per cent are working. This gives a child labour force of 19 million, of whom 7 million are below the age of 10 years, and another 12 million are between the ages of 10-14 years.

The estimates of child labour vary widely due to lack of systematic data collection and availability of micro-based data only. As most of the research work is based on case studies covering a few villages, a city, a sub-national area, at best a province, state or an equivalent region.

The latest nation-wide survey of child labour was undertaken in 1996, by the Federal Bureau of Statistics in collaboration with the Ministry of Labour, Manpower and Overseas Pakistanis, and International Programme on the Elimination of Child Labour (IPEC) as a component of the International Labour Organization (ILO). The survey was the first of its kind in Pakistan. According to the survey, there are 40 million children in the age group of 5-14 years, which is close to one-third (30 per cent) of the total population of the country. More than 50 per cent of the children are in the age group of 5-9 years. Among them the male children outnumbered female children with a sex ratio of 106 to 100. In both age groups of 5-9 and 11-14 years, again male out-numbered female with a sex ratio of 107 and 105 to 100, respectively. The majority of the children, i.e. 28.7 million (72 per cent) live in rural areas. Rural areas have relatively higher male/female sex ratio than urban areas.

Among the 40 million children aged 5-14 years, 3.3 million, i.e. 8.3 per cent are economically active. According to the survey the volume of child labour is about 3.3 million of which 2.4 million (73 per cent) are boys and 0.9 million (27 per cent) are girls. The quantum of child labour increases with age, i.e. the older the child, the higher is the rate of labour force participation. The volume of male child labour is about 2.1 million in the age group of 10-14 years which is about seven times greater than the level of 0.3 million in the age group of 5-9 years. Similarly the volume of female child labour in the age group of 10-14 years (0.6 million) is about three times greater than in the age group of 5-9 years (0.2 million). It is also noted that male child labourers outnumbered female child labourers in both rural and urban areas. The ratio of rural areas in child labour is about eight times higher than that of urban areas. This may be due to unpaid farm activities performed by family members in the rural areas.

The provincial distribution indicates that the volume of child labour in the Punjab is about 1.9 million, which is about three-fifths (60 per cent) of the total child labour in the country. Next comes NWFP, which has

about 1 million child labourers, and then Sindh with 298.30 hundred child labourers. The lowest figure of 13.72 hundred is for Balochistan, where less number of households have reported child labour[5].

Child Labour Legislation in Pakistan:

Although the UN Convention deals with all the aspects of children's rights, there are six provisions, which apply directly to working children. These include the right to be protected from economic exploitation (Article 32), the right to be protected from abuse (Article 19), right to access to primary education, the right to be protected from all forms of harm, neglect and sexual abuse (Article 34), and the right to be protected from all forms of exploitation (Article 36). Collectively, these provisions try to protect children from adversity that accompanies child labour by shielding them from risks and abuses they encounter daily due to their vulnerability and unequal bargaining power. Despite Pakistan's ratification of the Convention, none of the above is observed in the case of child workers in auto workshops as is evident from the results.

After signing the 1990 International Convention on the Rights of the Child, the Government of Pakistan repealed the obsolete Employment of Children Act 1938 and enacted a new law called the Employment of Children Act 1991.

Part 1 of the Act defines children as persons below the age of 14, which is at variance with the convention, that regards all persons below 18 as children.

Part 2 of the 1991 Act prohibits the employment of children in any occupation and process related to transport or ancillary operations, manufacturing of matches, crackers and fire works, ***bidi*** making, carpets, cement, cloth dyeing and weaving, mica, soap, wool cleaning, building and construction, slate and pencil (making and packing), agate products and toxic substances such as pesticides, chromium, benzene, asbestos, etc. However, the catch is that the above prohibition exempts cases where any of these hazardous occupations are carried on by a person with the help of his family members.

Part 3 of the Act permits child employment in occupations other than those mentioned above and attempts to regulate the conditions of work of children. Thus they are prohibited from working between 7 p.m. and 8 a.m. The maximum working hours permitted are seven with a break of at least

[5] Federal Bureau of Statistics [1996] Child Labour Survey 1996, Government of Pakistan, Islamabad.

one-hour after three hours of continuous work. No overtime is allowed, nor is a child allowed to take up two jobs simultaneously. A working child is entitled to at least one weekly holiday. All establishments employing children are required by this law to notify the government about the nature of work and working conditions. These establishments are expected to conform to health and safety standards prescribed by the government and to ensure clean and hazardous free working conditions for children.

Part 4 of the 1991 Act prescribes for breach of any provision of the act by employers. These include imprisonment for a period extending to one year and a fine of up to twenty thousand rupees. While these penalties are more severe than those provided under the earlier child labour legislation, they are mild when we consider the impact on the health, safety and psyche of the child when the provisions are violated. Moreover, they are not enforceable against family members and unregistered establishments.

Manufacturing units employing less than 10 persons on a regular basis do not fall within the definition of factories and are not regulated by the factories act. Thus, the Employment Act of 1991 may at best help reduce the number of children employed in hazardous occupations in the formal sector where the overwhelming proportion of working children is actually employed[6].

There is substantial child labour legislation in Pakistan, including the Employment of Children Act 1991 which established a minimum age and conditions of work in some occupations and bans child labour altogether in others. However, on the one hand these various laws and Acts have largely been ignored, and on the other many are so vague that they have left wide open room for legally perpetrated abuses.

The legislation for the protection of children lacks adequacy. The constitution prohibits the employment of children under the age of 14 in factories, and hazardous employment. There has so far not been a single court ruling interpreting the word "hazardous" under this article. Moreover, labour laws do not include labour in the agricultural sector and informal sector, where the majority of child labour is employed.

The penalty for employing children or for violating the regulatory provisions of the law is mild. The Workman's Compensation Act 1923 provided for Rs. 15,000 in case of death or injury to an adult labourer. For children the compensation is Rs. 4,000. Persons pledging children for work are fined Rs.50, those who accept a pledged child are fined Rs. 200[7].

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[6] Hussain, Akmal [1997] Overcoming Poverty, in *The News*, August 3, 1997.
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Determinants of Child Labour:

Several formal models [Levy (1985), Rivera-Batiz (1985) and Sharif (1994)] of the household economy take into account the economic contribution of children to household income to explain the decision of supply of child labour by parents.

Although the data on the remuneration of child workers is scarce and investigations on child labour supply have found mixed evidence, the general conclusion seems to be the same that the children are paid less than adults, even when they perform the same task [Bequele and Boyden 1988; Jomo 1992]. The effect of lower earnings on child labour depends on the wage elasticity of child labour supply, and here too the evidence is mixed. Some studies find that employers have no difficulties recruiting children even at very low wages, while others find elasticities in the range of 0.8 to 1.0, although elasticities seem to be lower for older children [Levy 1985; Rosenzweig 1981]. Still low wages of children is a cause of demand for children as workers.

Many researchers have focused on the determinants of schooling attendance to analyse the reasons for child labour, even recognising that school attendance is not the "inverse" of child labour. Children who are not enrolled in school are not necessarily involved in child labour activities, while many children who are enrolled in school also work, either in household enterprises or after school hours. In some cases schooling problems contribute to child labour. The inaccessibility of schools or their poor quality often spurs parents to engage their children in work. And many children may have to work in order to afford the direct costs associated with school attendance, such as fees and school books. Cost of schooling enhances the supply of child labour [Abdalla 1988].

Schooling facilities negatively affect the supply of child labour. Schooling facility is a function of the cost of schooling, government expenditures on education, private schooling system, the quality of education, job orientation of education and the distance of school from home.

Methodology and Survey

Objectives:

The study is carried out to ascertain:

1. Socio-economic background of child labour and the employers in auto workshops

2. The reasons why these children work and the reasons for leaving school

3. The element and the extent of exploitation, i.e. working hours, midday break, physical punishment, amount of payment, and mode of payment, etc.

4. The utilisation of children's income as contribution towards family income

5. The extent of awareness concerning children's rights amongst the children and their employers

6. Recommendations for effective solutions of the issue

Data Collection:

A comprehensive interview schedule was developed. It comprised various dimensions of the issue involved in the problem of child workers in auto workshops. To take an in-depth understanding of various issues, and to investigate the unexpected aspects of the problem, the technique of Focus Group was involved.

Child's Perspective

A structured interview schedule was developed. It had questions pertaining to various dimensions of the issue of child labour in auto workshops, such as demographic information, school history, reasons for leaving school, previous work history, duration of present job, reasons for working and economic aspects, psychological environment, and working conditions, etc

Employer's Perspective

The structured interview also included a part to investigate the perspective of employers of the children or the owners of the workshop. The employers were asked the reason for employing children, wage structure and pattern, the benefits provided to the child in addition to wages, leisure, etc. The survey was conducted in 60 auto workshops of district Pakpattan. The workshops surveyed were of rural and urban areas and the sample was selected randomly.

The children were classified into three categories according to their age group, i.e. less than 8 years, 9 to 11 years, and 12 to 14 years. The workshops were categorised into two types. First, heavy vehicle workshops

such as tractors, trailers, trucks, lorries and mini buses etc. Secondly light vehicle workshops such as cars, jeeps, rickshaws and motorcycles etc. Another classification of workshops was the authorised workshops by manufacturing companies and non-authorised workshops.

The data was selected through interviewing the children individually through the structured interview schedule. Preferably the employer was not allowed to be present while interviewing the child. Similarly, by interviewing the owner of the workshop or *Ustad* the information was collected. The response rate was more than ninety per cent.

Results and Discussion

An analysis of child labour in auto-workshops reveals that:

- Child labour in auto workshops[8] is 30 per cent i.e. a relatively higher incidence of child labour in this category
- There is extensive violation of the Convention on the Rights of the Child and Employment of Children Act 1991
- Child labour also exists in authorised workshops, i.e. either the companies and corporations do not have their code of conduct regarding child labour or do not obey it
- Child labour exists equally in heavy as well as light vehicle workshops

The detailed results are shown in the tables. The age groups of the sample are shown in Table No. 1. The average statistics of the child labourers are discussed in Table No 2. The working conditions are discussed in Table No. 3. Table No 4 and 5 gives information about the perspective of the father/head of household of working children. Household size of the child labourers is shown in Table No. 6. The reasons for leaving school and starting work is shown in Table No. 7 and 8.

Table-1: Child Labour in Age Groups

	Age Group (Years)	No of Children (Percentage)
1.	-8	12.5
2.	9-11	37.5
3.	12-14	50.0

[8] Ratio of children to total workers in auto workshops (in percentage)

It is evident from the above table that child labour participation in auto-workshops increases with increase in age.

Table-2: Average Statistics of the Children

Age	11 Years 01 Month 13 Days
Income	Rs. 32.88 Per Week
Daily Working Hours	11.45 Hours
Duration of Midday Break	27.17 Minutes
Working Experience of Children	2 Years 01 Month 04 Days
Time to Complete the Training	3 Years 11 Months 19 Days
Distance of Workshop From Home	3.5 K.m
Completed Years of Schooling	3.9 Years

It was found that the wages were paid weekly and no child or parents have taken an advance as against many other forms of child labour, like child labour in carpet weaving, in brick kilns and in agriculture. It shows:

- There is no bonded child labour in auto workshops
- Under market forces employers do not give advance due to abundance of supply of children as compared to demand
- The parents or children do not take advance due to the perception that the job is apprenticeship type, moreover they consider skill acquirement is better than education from the point of view of employment, as formal education does not guarantee a job.

All the above factors keep the wages of children low.

The number of hours that children work is critically important. Fatigue is a major cause of accidents and can impair intellectual development. The daily working hours (11.45) calculated in the present study are higher than calculated by Khan [1982] and Awan and Khan [1992]. The fact is that the survey was conducted in the months of April and May, which have longer days than the winter season. But the result exactly matches the results by Chand[1983].

The midday break is less than an hour, and is a lunch break and rest. The employers provide lunch for the majority of the children.

Average years of child's experience estimated in the present study is two years. According to the employer, it needs approximately four more years on average to complete the training. This means the total duration of training is six years. Such a long period of training with a long working day for a skill suggests a number of possibilities that may be

- The trainee is dull, not interested in the skill, unable to learn properly or the learning is very difficult
- The skill master is not interested in their learning, unable to teach, intentionally delays the period
- The major part of the job is work, not learning

Most of the child workers come from far distances, as the average distance from home to workshop is 3.5 kilometers. It is also noted that the majority of the children (75 per cent) come on foot. Only 4.75 per cent use bicycles and approximately the same percentage use a bus or other public transport. If the time consumed in travel is included in job activities, the daily working hours will exceed the calculated hours.

The average completed number of years of schooling by working children indicates that the majority of the children have not completed the primary level of education.

Table-3: Percentage Statistics of Children

(Children)	(Percentage)
Beaten up by the Employer or *Ustad*	95.65
Live in the Workshops	7.5
Occasionally Live in the Workshops	4.5
Enrolled in Formal Education	Nil
Fathers are employers	4.16

The factors which contribute to make work hazardous are the age of the child, the hours and conditions of work, and the physical and psychological strain of the activity. A large majority of child workers (95.65 per cent) accepted that the employers beat them up.

The data reveals that 7.5 per cent of the child workers do not go back to their home everyday and sleep in the auto-workshops, while 4.5 per cent of children have to live in workshops occasionally due to workload. They are provided only a little place to sleep.

None of the children is enrolled in formal education. This means that child labour in auto-workshops have such difficulties that to combine education with work is not possible. A number of likely reasons are:

- Children have no time to attend lessons due to long working hours
- Non-availability of teachers and informal education
- Fatigue does not make it possible for the children to think about education

Table-4: Occupation of Father

	Type of Occupation	Percentage
1.	Employers	31.18
2.	Farmer with Land ownership	27.27
3.	Wage Earners	18.18
4.	Self-employed Non-agriculture	15.59
5.	Landless Farmers	13.63
6	Government Employee	Nil
	Total	**100.00**

The highest number of children, that is 31.18 per cent, come from households where fathers/head of the households are engaged in private employment. It may be inferred that the job is not secured or the source of income is not secured. So the households supply their children as labourers. Second highest proportion (27.27) come from the farmers with land ownership. This is not surprising because all these households have a small piece of land, as they have the capital, so their source of income should be secured. But the small holding of land is insufficient to support the family so the children are supplied as labourers. Moreover, the seasonal conditions in the income of the farmers support the option of child labour. These conditions lead to the decision of the head of the households to engage their children in skill acquiring as against engaging them in agriculture. The fluctuation in income enhances the supply of child labour, the point is supported by the evidence that child labour supply is nil from the households having head of the household as government employee.

As concerns the land-less farmers, they should supply child labour more as compared to the farmers with land ownership, due to the fact that households with no capital are relatively more vulnerable and poor. In fact, these farmers may have more desire to engage their children in such type of

work but their landlords do not spare the children. The landlords keep them engaged in unpaid activities.

15.59 per cent of child labour come from self-employed non-agriculture households and only 9 per cent children come from unemployed households. It contradicts the conventional approach that unemployment is the major cause of supply of child labour.

Table-5: Education of Fathers

	Years of Education	Percentage
1.	Nil (Illiterate)	42.85
2.	1-5	33.35
3.	5-8	14.28
4.	9-10	4.76
5.	11-12	4.76
6.	13-14	Nil
	Total	**100.00**

The highest proportion of child labour (42.85 per cent) come from illiterate families. In the present study the average completed years of education of fathers is 3.95 years. It is also evident from the results that the increase in the education of the head of the household decreases the incidence of child labour. Hamid [1994] has also given the same results.

Table-6: Households (Who Supply Child Labour) with Children

No of Children	Household (Percentage)
1	0.00
2	4.16
3	0.00
4	5.10
5	12.50
6	16.66
7	20.83
8	12.50
9	4.16
10	4.16

The results in the table show another reason to leave school and put the child to work, that is larger families. The size of the family was mostly large in the survey. It is found that 20.83 per cent of the working children come from families having 7 offspring. Similarly 16.66 and 12.5 per cent come from households with 6 and 5 children respectively. The more the children, the more the parents are unable to provide them better options, that is why they choose to work. The study gives the clue that the families with large number of children cannot afford schooling expenditures of all the children so some children work to support themselves and school going children of the household. It is also calculated in the present study that the average number of children per household (who supply child labour) is 5.95. Lloyd [1994] described that the larger household size increases the probability of child labour. It may be concluded that inadequacy of a family planning programme can also be attributed to the existence of child labour.

Table-7: Reasons for Leaving School

	Reasons	Children (Percentage)
1.	Lack of Resources	48
2.	Lack of Interest in Education	32
3.	Beaten up by the Teacher	12
4.	Parent's Preference for Work	8
	Total	**100**

Since schooling is the main factor demanding time, it stands to reason that the cost of schooling would be an important determinant of the likelihood of child work [Siddiqi and Patrinos 1995].

Siddiqi and Patrinos [1995] view schooling as the most important means of drawing children away from child labour. The type and amount of work a child performs can directly affect school performance. The more vigorous and time consuming the work, the more likely that the child will score poorly on tests, miss school, and repeat grades. The children who work continuously from a very young age are also more likely to drop out of school after having completed only a minimum level of education.

Harsh attitude of teachers, high schooling cost and lack of interest in education propels dropouts and so the supply of child labour [Chand 1983]. Children are forced to work due to lack of education facilities [Ahmed 1991]. Lack of schooling facilities propels child labour [Bonnet 1993]. Children work because of non-availability of schools compounded by the poor quality of education [Bequele and Boyden 1988]. The extreme

poverty of households contributes to low school enrolment rates. The parents commented that since schooling did not guarantee better jobs for their children, it is better to send them to work [Salazar 1988].

In the survey, children who had left school were asked to highlight the reason for leaving school. Most of them replied that it was due to lack of resources. The second reason given was the lack of interest in education. Some children revealed the reason for leaving the school as being beaten up by the teacher. The above two reasons reveal that at least their parents had attempted to educate them but did not succeed.

There are 8 per cent children who work because their parents removed them from school and preferred work, which indicates the helplessness of these children. They are expected to accept the double authority of fathers, as a parent as well as the master employer.

Table-8: Reasons for Employers Employing Children

	Reasons	Employers (Percentage)
1.	Lower wages	50
2.	Training purpose	25
3.	Parents insistence	25
4.	Both for training and lower wages	40
5.	Children suit the job	Nil

The majority of the employers (50 per cent) accepted that they kept children due to lower wages. A slightly less than the above number of employers gave the reason as both training and low wages.

Skill acquirement by children positively affects the supply of child labour. The children as well as the parents consider the work as vocational training so parents send their children to work and children show their willingness [Hafeez 1979]. The majority of the children hopes that their participation would enable them to learn a skill for the future [Abdalla 1988].

It was also found that some of the employers said that children are employed due to the insistence of the parents of the children. The reason is given in Table No. 7 that these children work due to parents' preference for work but it seems that the employers disguise the implicit meaning that they are easily available, less demanding and easily exploited economically.

No employer gave the reason that the job is more suitable for the children.

Conclusion

Child labour engaged in auto workshops is considered to be apprentice type so the wages are comparatively lower than other types of child labour. The finding matches the results of other studies[9].

Growing children are eager to learn about the world, about its dynamics and its wonders, its customs and its rules. They absorb information with miraculous ease, as if knowledge itself were fuelling their development, learning from the world around them, from school, from play, from parents, from teachers, from other children and sometimes also from work. What kind of learning, however, is a child to imbibe from work in auto workshops with long daily working hours with a short midday break, beaten up by the employer, and sleeping in workshops in isolation from the family. The situation violates most of the rights in the Convention on the Rights of the Child and basic humanity.

The general observation indicates the poor health of the children, bad, smoky, dusty and dirty surroundings of the work places. Moreover 8.3 per cent of the workshops are roadside workshops and most of them are puncture shops.

It has also been found that the income of these children is not fully utilised in the household expenditures, only 45 per cent of them give their salary to their mothers or fathers. They only partly contribute to their families.

The majority of the children left school due to poverty, lack of interest in education and harsh attitudes of the teachers.

The lower value of Standard Deviation of wages of children shows that the employers have fixed the wages collectively so the market forces work for the uniformity of wages in auto workshops.

None of the children believe that schooling is good, which is exactly contradicted by the results of Khan [1982] where the majority of the children believe schooling to be good. This indicates that the working children are unaware of their exploitation and work seemed to them an opportunity to learn skills to acquire better jobs. The result matches the findings of Hafeez [1988].

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[9] Khan, Shaheen [1982]

As the average income of the father/head of the household calculated in the present study is Rs. 1965 per month only, that is the child labour producing families fell in the lowest quintile of income groups. The majority of children come from poor families and poverty a main cause of child labour has already been revealed in the studies by Hafeez [1988], Chand [1983], Hussain [1993], Grootaert [1998] and Chaudhry [1998]. Hamid [1994] narrates that the majority of the children (37 per cent) fell in the lowest income group of less than Rs.200 per month.

Recommendations

As the parents of children consider that the children in auto workshops are being trained, formal education along with training may be a better option instead of total elimination of child labour at once. For the purpose, afternoon and evening schools must be organised for working children. Setting up research and monitoring centers for children is also needed.

Finding out about child labour to determine the exact magnitude, nature and effects, a thorough qualitative analysis of the specific groups of child labour and their working and living conditions also needs to be done. Training on design management and evaluation of child labour projects and programmes are proposed.

Promoting the welfare and development of the children, protecting the working child and providing health and social welfare services are proposed. Moreover, withdrawing, rehabilitating, offering alternatives and/or compensating child labourers are also required.

The study proposes the elimination of the economic, social and physical exploitation of child labourers. It stresses on the provision of protection from performing work that hampers their physical and mental development. Advocating effective laws and their enforcement and assisting in identification of contraventions of the law, to control factors that generate the demand for child labour as well as that generate the flow of children into the workforce is required.

Education should be in easy access to the poor and financial support in the shape of less expensive education should be provided. Physical punishment of all sorts should be strictly prohibited in educational institutions and the offender be given appropriate penal punishment. The rights of the child should be made a part of the teacher's training curriculum and also be given exposure in school curriculum. Motivation of school teachers should be improved through improvement in salaries,

working conditions, housing, etc. and arrangements for training and supervision of their work.

The schools should develop strategies with which the illiterate parents should not feel left out. A more encouraging and supportive attitude towards the children, whose parents are not educated is proposed. Parents with children between 5 to 7 should be given special encouragement to send their children to schools.

NGOs working for the rights of children should concentrate on this segment of neglected children. They should design campaigns to make the public, policy makers and parents aware of the serious repercussions on a child's future once exposed to physical, sexual or economic abuse.

Employer's organisations can play an important role by helping business and industries using child labour to improve their efficiency and competitiveness through production and personnel practices that increase incentives for adult workers and decrease reliance on children. Firms need to establish their own codes of conduct that prohibit the direct and indirect employment of children.

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Interest and the Modern Economy

Arshad Zaman & Asad Zaman*

Introduction

Can the modern economy function without a market for interest-based credit? This question has acquired some urgency in the wake of the recent Shariat Court ruling banning interest in Pakistan. Some pundits have pronounced that great harm will result from the banning of interest[1]. Actually, such pronouncements are based on a lack of understanding of both the modern economic system, as well as the nature of the Islamic prohibition of interest. As we hope to demonstrate clearly below, the modern economy can function very well, indeed better in some ways[2], with a prohibition on interest rate payments of the Islamic type.

Some Common Misunderstandings

Many people believe that modern economics demands that there should be no restrictions on the functioning of markets. Clearly, this is not the case. Every society, in accordance with its values, imposes restrictions on the functioning of certain markets. Thus we do not allow markets to function in illicit drugs, gambling, prostitution, slavery, etc. Moreover, even though we know that illegal markets do function in these goods and services, no one advocates that just because markets exist they should be *allowed* to exist. Until quite recently, in conformity with Christian teachings against usury, Christian-modern societies did not allow markets for interest-based credit. It is only with the progressive crisis of faith in Christianity that such markets have come to be permitted, and are now seen to be normal.[3]

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[1] For example, H. Alavi writes that the ban on interest rate is a " threat to the stability and viability of the Pakistan economy," in an article in *Dawn* on 9 Feb 2000. Unfortunately, instead of providing the economic basis for his statement, Alavi writes mainly about principles by which the Quran should be interpreted, stepping far outside his own field of specialisation.

[2] For example, M Khan (1986) has shown that interest based credit increases the risk of banking crises. Our results below support this conclusion, though the mechanism producing crises is different in our paper. Also, Presley and Sessions (1994) have shown that *mudarabah* financing enhances capital investment because of its efficiency as a revelation device, relative to conventional interest based finance.

[3] Even so, until recently the majority view has been that governments should intervene to keep these rates low. It is only in the last 30 years or so that this majority view has been

Muslims have not suffered any such crisis of faith, and continue to view these markets as morally reprehensible. It is therefore entirely "modern" for Muslim societies to have laws that reflect their values.

A major misunderstanding regarding the prohibition of interest is that such a law will make it impossible to earn a return on capital. As a consequence, investments will dry up and the growth of the economy will be reduced or eliminated. In fact, as we will show below, Islamic law provides for a number of permissible alternatives to interest, and hence allows for earning a return on capital. The economic function which the interest rate performs can be fulfilled without using the particular form which it takes in modern banking. This may seem surprising since the opposite is frequently asserted in the popular press, but this point is well understood by economists. For example, one of the current leading texts in macroeconomics, Obstfeld and Rogoff (1996), states that in the presence of profit-sharing or other arrangements, `*the ban on ... interest ... would not interfere with the efficiency of the economy'*.

There is no reason to suppose that investment will decline under a switch to the Islamic system. Implementation of the Islamic Law would eliminate returns on risk-insulated fixed returns (on credit), it brings into existence other types of return not only on entrepreneurial capital but on permissible credit-like transactions. For example, Islamic law permits profits on the purchase and re-sale of goods with a mark-up (*murabaha*), which banks can use to fulfill the businessman's need for credit to finance the purchase of assets. This is a very common mode of financing in the Islamic banks and financial organisations that have been created. This method is virtually risk free and creates an instrument for credit very much like conventional interest-based loans. At the other end of the spectrum, we have Islamically permissible common stocks, which have high returns and high risks.[4] What is relevant here is that while the mix of financial instruments available would change in an Islamic system, they would not differ much in functionality from the mix currently available in a modern economy.

A third misunderstanding concerns the critical role of credit in the nature of modern investment and business spending. Contrary to popular

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assailed. Here too, with the financial crises of the last two decades (and more), a significant backlash is building up.

[4] For a thorough discussion of the range of Islamically permissible instruments and also a justification of why certain types of transactions are permitted while others are not, see Usmani (1998). Also, as shown by Khan and Mirakhor (1989), the IS-LM framework for macroeconomic analysis would work almost exactly as it does in a conventional economy.

misconception, the majority of funds which finance business needs in the USA, for example, is raised as equity (and not loans) on the open market (that is, common stocks, which are perfectly permissible under Islamic Law). Kester (1986) lists debt-to-equity ratio for major categories of business in USA and Japan, and shows that most of these ratios are substantially below unity, so that (Islamically permissible) equity financing is much more prevalent than (interest-based and prohibited) debt financing. This amount of debt would be reduced even further were it not for the artificial tax advantage of debt-based financing in these countries (since interest payments can be written off). As a practical matter, equity financing is widely used and has many advantages over debt-based financing, listed in many texts on corporate finance—see for example, Ross, *et. al.* (1995). These advantages are also discussed in a later section of this paper.

A fourth misunderstanding relates to the critical role of bank credit in supporting the prosperity of Pakistan. We must realise that while Pakistan is a new state, it is one of the oldest economies in the world; pre-dated only by modern Iraq and Egypt. For several thousand years of its existence, interest-based credit has been against the law in Pakistan. It is only in the last 50 years that interest-based bank credit was introduced in the economy, and its consequences are the stuff of current newpaper headlines. While there are complex reasons that account for the present crisis in banking (and non-bank financial intermediaries), no one can deny that a link between bank credit and the returns on the commercial undertaking that it financed would have been a good thing.

Finally, the degree of change required is commonly over-estimated. In fact, during the process of Islamisation under the Zia regime, banks have already rewritten their lending procedures to come into apparent conformity with Islamic Law. Thus, in principle, interest-based transactions have been replaced by those based on ***murabaha*** (markups and transactions costs), leasing, and some ***musharaka***, all of which are permissible under Islamic Law. Appearances are deceiving, however, and only the form of the transactions have changed, with no change in the underlying transaction.

Unfortunately, for inexplicable reasons, foreign transactions have been effectively excluded from the Shariat Court ruling. Since the government is the largest player in the market for credit, and interest-based foreign borrowing is its mainstay, as a practical matter, there is unlikely to be any change in the banking system already prevailing in Pakistan. Changes will occur only if there is an attempt to bring about real change in the form of the underlying transaction rather than the nomenclature being used to describe the transaction. Finally, it is unclear whether the executive body of

the government will move to implement the Shariat Court ruling in detail, or whether they will be satisfied with the nominal implementation that is already in existence.

The present paper is concerned with the issues that will arise if Pakistan moves towards a genuinely Islamic system, as opposed to one which is Islamic in name and appearance only.

Debt Versus Equity Financing for Business Needs

Although there are many details, at a broad level we can categorise business needs for funds into two categories: working capital and investment. Working capital is needed for example when a business buys goods, often on credit, with the expectation of getting money from selling them. When credit from the original seller is not available, short term interest based loans are frequently used for financing the holding of inventory. The Islamic alternative here is *Murabaha*. Instead of taking a loan from a bank to purchase goods, the bank purchases the goods and resells them to the business at a profit. This profit takes the place of interest. For longer term loans for investment purposes, the Islamic alternative to an interest-based loan is *Musharka*, where the bank becomes a silent partner in the enterprise. A share of profits replaces interest as the gain on capital. In both cases, abstracting from complexities, we can model the Islamic transaction as being equity based -- the return paid to the bank has some relation to the earnings generated by the business. The earnings of the business is a random variable (for inventories, because the timing of sales is random and hence the present discounted value of the resulting cash stream is random). In both Islamic instruments, some of this uncertainty is passed on to the lender. The alternative instrument is debt-financing, where the business must pay a fixed return regardless of its own performance. In this section we consider the question of financing business activities from the business point of view: Will businesses prefer debt financing to equity financing?

From a purely practical point of view, equity based finance is typically more common than interest-based finance in the US and Japan, as shown in Kester (1986). This shows that businesses tend to prefer equity based financing. This is in spite of the fact that debt based financing is advantageous due to tax laws in the US and Japan which permit businesses to write off interest expenses, but not dividend payments. Without this tax advantage, the proportion of equity financing would be even higher than it currently is. There seems no reason to suppose that completely eliminating interest based loans would cause any distress to businesses.

From a purely theoretical point of view, we have the Modigliani-Miller Theorem (1958, 1964). According to this theorem, it is economically equivalent whether business financing is done using common stocks (which is the Islamically permissible form of financing) or bonds (which are interest bearing and hence banned). Thus, at least for the purposes of financing business activity, theory recognises no difficulties with switching to purely Islamic forms. Critics have argued that the M&M Theorem fails to hold when real world complexities are taken into account. Taking these complexities into account actually favours equity based financing over debt based financing for many reasons (See Ross *et. al.* (1993) and Jensen & Smith (1986) for a discussion). The fundamental issue which emerges is that the value of a firm is equivalent to its stream of incoming payments. All claims on the firm must be paid out of this stream. Equity based finance is co-ordinated with this stream, while debt based finance is externally prescribed. In bad times, interest payments must continue at the same rate, while equity based payments are reduced. Due to this, the probability of bankruptcy and financial distress are increased when debt based financing is used[5]. Since this issue is critical to some of our arguments to follow, we spell it out further in the next paragraph.

Consider a situation where a business has a random stream of earnings. For simplicity, suppose that it will earn $1000 with probability 90 per cent and $100 with probability 10 per cent. Then the expected earnings are $910 and so, on the average, an interest repayment of $200 will be well within the capability of the business. However a fixed liability of $200 will cause the business to go bankrupt (or go into financial distress) about 10 per cent of the time in this scenario. If this same $200 is repaid as a 22 per cent share of returns, there will be on the average the same repayment to the lender ($220 in 90 per cent of the cases, and $22 in 10 per cent, averaging out to $200). However the probability of bankruptcy or financial distress is reduced to zero.

Overall, we can conclude Other than tax advantages (which are artificial, in the sense that they merely re-distribute income and are not net gains to the economy), there is basically only one situation where businesses

[5] On this, see also Mohsin Khan (198?): "…the Islamic system may well turn out to be better suited than the interest-based banking system to adjust to shocks that can lead to banking crises. In an equity-based system shocks to the asset positions of banks are immediately absorbed by changes in the nominal values of shares (deposits) held by the public in the banks. Therefore, the real values of assets and liabilities would be equal in all points of time. In the traditional banking system, since the nominal value of deposits is guaranteed, such shocks can cause a divergence between real assets and real liabilities, and it is not clear how this disequilibrium would be corrected…"

will prefer debt-based financing to equity based financing. That is when the public perception of their returns is lower than what the businessmen know it will be. In such a situation, the public/banks will demand a greater share in equity than the equivalent payment in debt. Instead of seeing this as a problem with equity financing, one could equally well view it as a problem of informational asymmetries. The problem could be resolved by sharing information in such a way that common perceptions emerge. It should also be possible to solve this problem using more complicated sharing rules instead of a flat percentage.

that business will not be fundamentally affected by a complete ban on interest rates. On the whole, there will be favorable effects due to reductions in probabilities of financial distress and bankruptcy. These may be counterbalanced to some extent by problems arising due to informational asymmetries. These are small effects, and should not have much overall impact on the big picture.

Effects of Transition to Islamic Law on Banks

Naïve faith in the workings of "the invisible hand" leads to the belief that whatever practices are in existence are necessarily optimal. The ease with which multiple equilibria arise in modern game-theoretic formulations has led economists to reconsider such comfortable assumptions. In models with mutiple equilibria, historical circumstances determine the one which is arrived at, and there is no guarantee that the best equilibrium will be selected. In addition, economics as a whole is well equipped to analyse marginal changes, but shifts from one equilibria to another bring into play big changes which we are ill equipped to analyse.

The mere fact that interest-based loans exist is not enough to show that their existence is necessarily an optimal way to organise business and banking. Since interest is banned in Judaism, Christianity and Islam, there have been many periods in history where interest has not been used. The illusion that current times are the best and most sophisticated has always been present throughout human history. This has led certain authors to suggest that in the 'primitive past' economic affairs were simpler and thus interest could be avoided. A serious study of history disabuses this naïve idea -- historical studies show that sophisticated and complex business transactions were conducted in many periods of history, including the Khilafate Usmania, which had its own version of a global economy.

Current organisation of banks appears curiously inefficient from an economic point of view. We have large banks which make small (relative to

the banks assets) loans to diverse businesses, each of which has random returns. If the bank accepts return based repayment (as in Islamic system), then, since the bank has a diversified portfolio, the laws of probability guarantee that its return will show much less variability than the returns of individual businesses. This will reduce the overall risks in the system, since the banks will absorb a portion of the risk of the individual investors. If instead the bank demands fixed repayment on loans, this will increase the risks faced by the individual investors (leading to higher probabilties of business failure and financial distress). Since the banks portfolio is large and diversified, it is more efficient for it to bear (smaller) risk; instead, the interest based system magnifies risk for the individual investors who are already more vulnerable. Given the apparently greater efficiency of the Islamic type system, why are banks not organised along these lines? One answer could be that historically banks have offered fixed interest rates to depositors, creating a fixed set of liabilities. It is easy to construct formal models where banks, having a fixed stream of liabilities, would require fixed stream of payments from borrowers to be able to meet their liabilities, and would be hurt by a transition to the Islamic system. However, for the system as a whole, it would be optimal to make a transition to the Islamic system where banks would obtain profits which are based on business outcomes and would also pay depositors a random, return-based amount. There is a tradeoff made in this transition: the risks to businesses are passed on, in a much attentuated form due to diversification, to the consumers, who will now have random returns on their deposits. We will return to a more detailed discussion evaluating the costs and benefits later in this article.

Effects of Interest Ban on Consumers

As just discussed, the consumers would face a more variable stream of returns on deposits. There would be compensation in the form of reduced risk of bank failures, as we will show later on. In an Islamic society, practicing Muslims would face no loss from this transition as the consumers would prefer a variable rate of return. Their option is to keep money out of banks which leads to zero returns, or invest it directly, which consumers are ill-equipped to do. Serious Muslim investors do obey the law, thus depriving the economy of money which may be useful in increasing investment and hence the growth of the economy. Thus there is a distinct possibility of growth in available funds for investment following a move to Islamise the banking system. Even Europeans have become aware of the vast potential of attracting the funds of Muslim investors, and are creating instruments to tap into this fund. The Islamic Dow-Jones average and FTSE index, as well as several funds which invest in only Islamically permissible instruments have recently been created. This leads to the possibility that the creation of a

truly Islamic banking system may actually attract foreign investment from Islamically minded investors, instead of reducing it, as has been suggested by several opposed to the move.

Another issue of importance to consumers is the financing of loans for consumer purchases, such as houses and cars. These can easily be handled via the instrument of *Murabaha*, where the bank purchases the item, and resells it to the consumer on installments for a profit. Muslim groups have already implemented schemes of this kind in the USA and Canada, showing their feasibility. See website www.lariba.com for one such group, legal and economic feasibility studies, and other relevant statistics. If the transaction runs smoothly to completion, there are virtually no differences between it and the conventional interest based financing (other than the artificial tax advantage of the interest based loan). In case of default, the Islamic method appears superior. It would save the banks some portion of the legal costs currently spent on repossession from recalcitrant consumers and resale, since they would have title to the assets.

Effects of Interest Ban on Government Finances

Unlike businesses, governments finance a wide range of activities (education, infrastructure, public goods, military) which are not directly renumerative. Thus it would be difficult for them to take loans which would be financed out of future revenues. Can governments function if they are denied access to interest based loans, currently widely used by all governments all over the world?

Contrary to what may be supposed, David Ricardo showed that the government can always replace financing via debt by financing via taxation (or vice-versa). This proposition has come to be known as the Ricardian Equivalence Theorem. For our purposes here, more important than the debate over the validity or failure of Ricardian Equivalence in practice[6] is that it expresses a fundamental and important insight: Government borrowing must sooner or later be repaid by taxes, since this is the only source of government revenues. Under perfect foresight, infinitely long living consumers are indifferent between government financing from taxes and that from loans, since they realise that eventually they will repay the loans in the form of higher taxes. Failure of Ricardian equivalence results from the short horizons of consumers, and lack of equality of discount rates applied, among other possibilities.

[6] See Han-Yung Jung's (1994) Ph.D. Thesis for an empirical evaluation and references to the literature.

We do not mean to suggest that governments *should* replace borrowing by taxation; this is not politically feasible. What is important to realise is that borrowing is not a new and different instrument for financing; it is fundamentally a method for pushing taxation forward onto later times. Governments are happy to do this, since they can borrow and later the government will be saddled with the debt. Consumers are also willing to do this since they discount payments by future generations. Thus there is a large measure of lack of responsibility and foresight, as well as long range planning, which encourages the government tendency to finance via debt rather than taxation. This shows that banning of interest based debt will encourage responsible government, by not giving them the option of saddling future governments and unborn generations with debt. This by itself may well be of great value and welfare increasing. As documented by Ferraro and Rosser (1994) the Third World currently owes more than 1.5 trillion dollars to the First World and the annual net flow from the poor countries to the rich countries has been over 50 billion dollars in the past decade[7].

The conventional view is that the government borrows for the development of projects which enhance productivity. The increased revenues from the additional productivity would be used to pay back the loans without imposing any debt burden on future generations. If the conventional view is true, then borrowing to repay interest on previous loans should be very rare or nonexistent. In practice, a large number of new loans go towards financing interest payments on previous debts, showing that sufficient additional productive capacity was not generated due to the earlier loan. The evidence supports the alternative view that corrupt governments borrow for private benefits. In this case, later generations and governments are saddled with a debt burden without any compensating benefit in the form of productivity gains due to improved infrastructure. A ban on interest protects future generation from the corruption of earlier governments by denying these governments the possibility of taxing later generations by creating debt. This is clearly of great benefit in a country such as Pakistan, where no one denies the deep corruption in government. However such a ban may also have the effect of preventing productive investments by the government, which may not be able to finance them. Thus we need to find a way to allow the government to finance genuinely

[7] Each year seventeen million children die from the combined effects of poor nutrition, diarrhea, malaria, pneumonia, measles, whooping cough, and tetanus, diseases that are rarely fatal in the developed countries. One in twenty of these impoverished children dies before reaching the age of five. A large proportion of these deaths is attributable to the burden of debt repayment faced by the poorer countries.

valuable and productive projects, without allowing them to borrow in an indiscriminate fashion. Islamic law and heritage does allow a number of options, all of which can accomplish this goal of discrimination. It is important to note that the government and the powerful elite would be expected to resist these alternatives since a responsible government would take away the easy opportunties for windfall profits enjoyed by those with easy access to loans which need not be repaid by individuals but will be paid by the public in the future.

Islamically permissible ways of financing projects without taking interest based loans depend on the nature of the project. For revenue generating projects such as power generating dams, it would be best to finance out of the revenues of the project. If the project revenues are insufficient, this a clear indication of the economic nonviability of the project. Projects such as highways and bridges could, in principle, be financed from tolls to be paid. Such forms of finance may prove insufficient for various reasons. In these cases, the beneficiaries from the projects should be taxed. Roads increase land values, and the owners should be taxed. Similarly beneficiaries from other development projects should be made to contribute to the projects. There is an example of Khalifa Umar in which he asked everyone to put in a day of work in building a road. Creative financing like this will reduce corruption, get the people involved in the development project, overcome resistance to government revenue collection since the benefits will be directly visible, and encourage greater participation in the government. Certain projects, such as educating the poor, cannot be paid for either out of revenues generated out of the project or by the target population (since it is too poor, and the benefits too diffuse and long range). In such cases, the Zakat fund can be employed and also appeal to public donors may be made. The tremendous success of public charities such as Edhi trust shows that there is no lack of willingness of the public to participate in good projects. Resistance to paying taxes and supporting government projects arises solely from well-founded suspicions of corruption in the government. To the extent that banning interest will force the government to reduce corruption in order to be able to win the confidence of the public and attract funding for its projects, this will be a change all to the good.

Another important beneficial effect of preventing the government from taking interest based loans will be the freeing of capital for domestic investment. It has been widely observed that when the government issues bonds paying high real interest rates, the public invests in them in preference to productive interest. Peter Farkas (1998), mentions that one of the reasons for the collapse of Russian industry is that the lucrative returns available on

financial markets led to reduction of capital available for productive investments. In this connection, Mehra and Prescott (1985) have shown that the U.S. treasury bills in the last century have payed a real interest rate of around less than 1 per cent. This 1 per cent could be regarded as compensation for inflation risk. This leads to the possibility that a genuine risk free government bond could be financed at zero per cent interest rate in real terms. A credible and honest government should be able to obtain financing for its legitimate projects by issuing Islamically permissible indexed bonds at zero per cent interest. Such a policy would also not compete with private sector needs for financing productive investments.

Some General Effects of the Prohibition of Interest

We have considered the effects of banning interest based loans on consumers, banks, business, and government, separately. In this section we consider some global effects which could be expected from the Islamic law. Several socially beneficial effects would result from such a ban.

Financing for superior investment projects: Since banks are effectively insulated from the outcomes of business in the system of interest based loans, they lend on criteria different from the intrinsic merit of the investment. Potentially very good investments would be passed up if the investor does not have enough collateral to guarantee repayment in case of an unfavourable outcome. If return to banks is based on investment outcome, as under Islamic law, we may expect that the mix of investment projects financed would shift towards the more profitable and hence the economically more valuable projects. As a practical matter, the rate of failure of new business startups in the USA is close to 70 per cent. This high rate is partly due to the fact that banks are willing to finance poor projects if they have sufficient collateral to ensure that they will be repaid. Such a high rate of failure inflicts large deadweight losses on society. It seems likely that if banks take greater interest in outcomes, these losses can be reduced.

Better utilisation of information: Since banks finance many projects, they have potentially valuable information to share with investors. A typical new business startup may be a first or second effort, whereas the bank is likely to have made loans to several similar businesses. Under conventional interest-based financing backed up with collateral, the bank has no real incentive to share its information -- it is guaranteed a fixed return in any case. In the Islamic system, the return to the bank depends on the return to the investor and hence the bank will have a great incentive to ensure that the new investor has the best possible information for planning. Realising that small investors have relatively poor information available,

many government agencies have tried to fill the vacuum and provide relevant information. However a financially interested party would obviously do a better job of providing this service.

More opportunities for the poor and better income distribution: The current collateral based system for financing business effectively locks the poor out of participation in the economic activities of the nation as a whole. Schemes like ROSCA (committees in local terminology) show creative efforts to get access to finance by those who are ineligible to borrow from banks by conventional criteria. Banning interest should have the effect of allowing for greater access by the population to finance, and hence lead to a better income distribution.

Maintenance of Independence and Sovereignty: The use of debt as a tool for control is ancient. Blaisdell (1929) shows how the Ottoman Empire was subjected to European influence by the use of debt. In modern times, the IMF and WB interfere with sovereignty on all fronts. Substantial pressure can be brought to bear on indebted countries to formulate policies contrary to the national interest. It is no longer denied even by the WB that its policies have generally caused much harm to the poor. Motivated mainly by ensuring repayments, IMF structural adjustment programmes have generally been harmful to nations which have adopted them. It is quite interesting to note that nearly all the IMF/WB debt has been contracted by interim governments in Pakistan, which were not responsible to the people, and did not look forward to future repayment. Representative governments as well as responsible military leaders have generally avoided binding the country to debts which would adversely affect the future.

Avoidance of Debt Crises: As we have argued, interest-based loans lead to irresponsible borrowing and lending. This in turn leads to banking crises from time to time as fixed obligations cannot be met from a payment stream which is random and variable. Such crises inflict tremendous hardships and costs on all segments of society, but most of all on the poor. For example, Ferraro and Rosser (1995) details the current debt crisis facing the world and the hardships inflicted on many parties by this crisis. If the world as a whole moves towards an non-interest based system, it seems likely that such crises could be avoided.

Justice: As Tawney (1926) and others have noted, the divorce between issues of morality, ethics and justice on the one hand and material affairs, economics and business on the other hand, was effected over the period of sixteenth and seventeenth century in Europe. Things have proceeded so far that Milton Friedman (1997) feels no discomfort in arguing that `Profits

should be the only business of business,' even if these profits lead to deaths[8]. Thus it sounds strange to modern ears to bring up issues of ethics and justice, on the basis of which interest has been banned for such a long period in the common heritage of mankind. The issue is that reward should only be given for productive behaviour. It is on this principle that lotteries and gambling are banned in Islam, since the winners gain without having done anything productive. Similarly the mere ownership of capital is not considered a productive act (much as capitalists may wish to convince us otherwise). It is to counter these ethical considerations that justifications were offered for interest in terms of the `rewards for waiting' etc. in early European debates on the issue. As a silent partner in a business enterprise, a capitalist is entitled to reward for the risk he takes. The risk-free reward embodied in interest is not just, since the capitalist gets it without doing anything productive -- mere ownership not being considered a productive activity.

Conclusions

We have made a detailed examination of the institution of interest and shown that prohibiting it would not lead to discernible difficulties for modern institutions. In many different ways, the resulting changes would be beneficial as a whole to society. The question that naturally arises in the mind of a skeptic would be that if the interest-based system is so inefficient, why has it continued for so long?

As far as the private sector is concerned, in the USA and Japan, it seems likely that businesses would finance close to 100 per cent of their needs by equity based methods if it were not for the tax advantage of interest based loans. Thus a law favouring interest based financing is responsible for the persistence of interest. In the public sector we have listed many reasons why irresponsible governments and corrupt politicians would favour the use of interest based loans over alternative Islamically viable instruments. The fact that debt allows manipulation of the other party creates an incentive for the powerful to use interest based debt as a tool. When the powerful of the world have reasons to prefer interest based loans, we need look no further for a reason for its prevalence.

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[8] See Friedman vs. Alameda (1997). Alameda discusses a case in which Chevrolet decided to manufacture defective Pintos knowing it would lead to about 700 deaths on the basis of profit loss considerations showing that an immediate recall and correction of defect would be more expensive than the eventual liability suits resulting from the deaths. Friedman counters by saying that all moral judgements are relative and subjective and hence businesses should not get involved in making moral decisions, but just pursue profits.

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Obstacles Facing Saudi Exporters of Non-Oil Products

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Abstract

This study explores the obstacles facing Saudi exporters of non-oil products. The sampling frame comprised 411 firms, which have been involved in exporting for at least two years as identified by the Saudi Export Development Center. The research has investigated twenty five obstacles that have some relation to non-oil export products. Competition with foreign firms was found to be the first obstacle with the highest mean of (3.212) followed by lack of information about potential export markets with a mean of (2.887). Moreover, with regard to the ways Saudi exporters might overcome these obstacles, the investigations suggested to Saudi exporting firms fifteen factors that might improve Saudi non-oil exporting products.

Introduction

For many organisations, exports are a necessary part of their business operations. Without exports, local production cannot reach overseas markets and this will negatively affect domestic income. Exports increase the rate of economic development and thereby help the government achieve its objectives.

Export diversification is one of the most important objectives that Saudi Arabia seeks to achieve. Saudi Arabia is seeking to decrease its dependence on crude oil as the main source of income (Saudi Export Directory, 1996). Saudi Arabia has become a main center of exports in the area. This has led to competition among exporters to win, satisfy and compete in the global marketplace. Therefore it is important to identify the factors that may affect export success, especially when there has been a lack of empirical research at the firm level.

This article comes up with the following problems: little share of Saudi non-oil products, little confidence from Saudi exporters, no clear vision for the exporters, lacking abilities to enter other markets, Saudi non-oil precuts cannot compete with foreign products. Therefore this study

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will try to help avoid the obstacles and difficulties facing the sector of exporters, to help governmental establishments participate in solving the problems, and to support Saudi exporters to meet the needs of targeted markets.

The main objective of this study is to find out what obstacles, if any, face Saudi exporters, and to suggest ways in which such obstacles can be overcome. For the purposes of this study, non-oil products are any products other than crude oil and firms are classified as successful or less successful exporters, based on the measurement of export performance.

Literature Review

Table 1 indicates the values and quantities of Saudi non-oil exports between year 1995 and year 1999 to the world markets. Table 1 shows the increase and decrease of the quantities of Saudi non-oil products.

Table-1: Non-oil Saudi's Exports to the World Markets

Year	Value in Million	Qty. in 1000 tonnes
1995	6052	199834
1996	6863	228634
1997	6755	214893
1998	5798	278901
1999	5332	175449

Certain decisions need special care when managers are setting up an exporting system, particularly the choice of country (Deresky, 1994). Saudi non-oil exporters have missed the opportunity of an Arab free trade area agreement that give all Arab products 40 per cent discount of customs tariffs when entering any of the Arab countries. However Table 2 shows illogical exporting movement, the highest percentage was for United Arab Emirates and the second country was the United States. Jordan and Egypt were the lowest.

Table-2: 1999 Saudi Non-oil Exports by Major Countries

Country	Value US$ Million	%
United Arab Emirates	762	14.3
United States	489	9.2
Kuwait	452	8.5
India	244	4.6
Hong Kong	235	4.4
Bahrain	211	3.9
Egypt	198	3.7
Japan	197	3.7
Singapore	144	2.7
Jordan	141	2.6
Rest of the world	2259	42.2
Total	5332	100

While much has been said about the relationship between size and export involvement, there appears to be a lack of empirical evidence to indicate the obstacles facing Saudi exporters and the assistance requirements Saudi exporters need to overcome these barriers.

Saudi exporters, like exporters in most countries, may face two different types of barriers, internal or external. Although the export operation from Saudi Arabia abroad does not involve many administrative procedures, some exporters have commented about the delay caused by such procedures in relation to the seaports, commercial banks and the custom organisation (Saudi Chambers' Council, 1994).

Most Saudi exporters are newly engaged in export activity and as such they lack information about international markets and the regulations procedures in the markets (Saudi Chambers' Council, 1992; *Al-Aaktassiad wal aamal*, 1994; Saudi Chambers' Council, 1994; Almajalla, 1994).

Finance and insurance risks are another form of internal barrier encountered by Saudi exporters, especially small exporters and the local commercial banks are reluctant to give guarantees to them. Other exporters lack insurance cover against export risks (Saudi Chambers' Council, 1992; *Al-Aaktassiad wal aamal*, 1994; Saudi Chambers' Council, 1994).

Although the location of Saudi Arabia is strategic, the cost of transportation from Saudi Arabia to overseas markets is considered high compared to other countries' transportation costs. (Saudi Chambers' Council, 1992; *Al-Aaktassiad wal aamal*, 1994; Saudi Chambers' Council, 1994; *Al-Eqtisadiah*, 1994; *Tegart Al Riyadh*, 1996). Seaport taxes are considered another barrier for Saudi exporters (*Al-Aaktassiad wal aamal*, 1994; *Al-Eqtisadiah*, 1994).

External Barriers

High customs taxes in other countries are one of the important external barriers that are used to protect their local production. Al-Aali (1995), discovered that obstacles facing Saudi exporters were: variations in product standardisation; high competition in overseas markets; cost of importing material; lack of information about overseas markets; changes in foreign currency and cost export customs. This finding can not be generalised, because Al-Aali's study concentrated on only two types of industry, chemicals and food. However, the type of obstacles faced could be determined by the type of industry. Also, the findings of this research carried out in Saudi Arabia show that exporters face organisational, financial, production and marketing obstacles.

Arguably, there are no major differences between the barriers facing Saudi exporters and those faced by exporters from other developing countries. In Turkey, for example, Bodur (1986) shows the difference in the type of obstacles faced by two different types of exporters.

Factors Connected with Export Success

Based on the success factors associated with Canadian firms, Kamath *et al* (1987) consider four crucial factors for export success:

1. The fundamental strength of having good people at both the managerial and work force levels;
2. A clear philosophy and corporate mission;
3. Action skills leading to good implementation of company strategy;
4. Close attention to the specifics of company's exporting situation and activity (a market – by – market, product by product, or contract by contract approach to business).

The degree of success of Japanese firms in international markets compared to the American and British has led to the question: what are the factors contributing to the success of Japanese firms? Kotler and Fahey

(1982) state understanding and use of marketing has played a major role for Japanese success in the international market.

Another form of success that helped the Japanese to break down the American and British stronghold in Saudi Arabia is highlighted by Yavas *et al* (1987: 242) as follows:

> **"Careful product design to suit local needs, better value for money, timely delivery, long-term dependability, and the meticulous attention given to after-sales services. Having local repair facilities, spare parts, and adequate warranties are extremely important to Saudi customers. The Japanese are sensitive to this need to the extent that they have employed traveling clinics with factor-trained technicians in Saudi Arabia, in addition to permanent facilities."**

There are several factors that are motivating firms to become exporters. However, firms may also face obstacles to their export operations, and in this section we will discuss the barriers that exporters might encounter.

While much has been said about the relationship between size and export involvement, there appears to be a lack of empirical evidence to indicate the obstacles facing Saudi exporters and the assistance requirements Saudi exporters require to overcome these barriers.

Saudi exporters, like exporters in most countries, may face two different types of barriers, internal or external. The former are the local barriers which are related to the internal procedures and regulations; these to some extent are controllable. The latter are related to the importing countries, such as the import procedures and regulations, which are to some extent uncontrollable.

Although the export operation from Saudi Arabia abroad does not involve many administrative procedures, some exporters have commented about the delay caused by such procedures in relation to the seaports, commercial banks and the custom organisation (Saudi Chambers' Council, 1994).

Also, the lack of international market information is another internal barrier. Most Saudi exporters are newly engaged in export activity and as such they lack information about international markets and the regulation procedures in these markets (Saudi Chambers' Council, 1992; *Al-Aaktassiad wal aamal*, 1994; Saudi Chambers' Council, 1994; *Almajalla*, 1994).

Al-Aali (1995) indicates that high customs taxes in other countries are one of the important external barriers that are used to protect their local production. He also indicates that in view of the relatively poor Saudi

experience in exporting, Saudi exporters face high competition in international markets from more experienced firms.

Method

The Questionnaire

A questionnaire was used to collect the required data partly because of practical effectiveness. In this respect, Clover and Basley (1979) indicated that prospective respondents can be reached at a relatively low cost by the use of a questionnaire and a quick turnaround time can usually be expected. During the planning stage, it was felt that there were very few reliable research studies and little information about obstacles Saudi exporters faced for non-oil products. Therefore, it became evident that the information needed for this research could best be obtained through a mail questionnaire filled in by the marketing or executive managers. According to Sellitez *et al* (1960), questionnaires are especially beneficial to a researcher who seeks information about the internal operations of an organisation. As Mason and Bramble (1978) and Caswell (1989) suggest, a questionnaire has the advantage of increasing the generalisation of data, and at the same time gives the respondents freedom to express their points of view.

The questionnaire was designed to ensure that respondents followed precise specified instructions. The questionnaire was divided into sections informing the respondents of the nature of the information requested. This was done in order to provide motivation for the respondents to continue and avoid monotony in completing the questionnaire. The questionnaire did not request any form of personal identification that may have inconvenienced the respondents and jeopardised anonymity. It was felt that such measures would eliminate any threat to the participants that might cause bias in their responses.

Describing the Sample

Previous research studies conducted in Saudi Arabia reported major difficulties in obtaining information from Saudi manufacturing firms. The problem is that most Saudi firms are not accustomed to the idea of externally conducted surveys. Many enterprises fear that the release of information about their activities will benefit competitors. Consequently, attempts to investigate Saudi firms have always encountered difficulties: no survey of the type proposed here has therefore been carried out without complications in Saudi Arabia in the past. It was therefore decided that it was necessary to obtain responses from 411 exporting firms that have at least two years of export experience in order to have a reasonable basis for statistical analysis. The data collection process was implemented during the months of Sept to Nov 1998.

The researcher faced difficulties with the respondents. Owing to the poor quality of the postal service, some firms did not receive the questionnaire, and in some cases the researcher had to deliver it by hand. Some people thought the questionnaire a waste of time because they did not recognise the importance of such research to their export development. By the middle of November 1998, which was the cut-off date, 108 questionnaires had been returned, of which nine were unusable, leaving 99 usable responses. The response rate was, therefore, 24 per cent, which was considered to be an acceptable response rate.

Details of Respondents

The respondents from non-oil exporters, type of industry, number of export market, years of starting exporting, years of experience, and size of firm are shown in Table 3.

Table-3: Social Data and Business Classification -- Total Sample

	Exporting Firms	
Type of Industry:		
Textile, leather and paper products	5	5.0%
Furniture	3	3.0%
Animal and farm products	3	3.0%
Chemical products	14	14.1%
Plastic products	16	16.2%
Food and beverages	10	10.1%
Mineral products	18	18.2%
Building materials	17	17.2%
Engineering and electric products	9	9.1%
Other products	4	4.0%
Number of export markets:		
1 –6	51	51.5%
More than six countries	48	48.5%
Years of exporting:		
Less export experience	45	45.0%
More export experience	54	55.0%
Years of Experience:		
Less experience	49	49.0%
More experience	50	51.0%
Size of Firm:		
Small	29	29.0%
Medium	50	51.0%
Large	20	20.0%

The target population of this study is all non-oil producing exporting firms in Saudi Arabia. The source of information about the target population is the Saudi Export Directory (1995) that is published by the Saudi Export Development Center. Respondents included all types of non-oil industry, which was considered as giving the respondents greater expertise in their different fields and therefore would have a better understanding of the use of questionnaires in the field of research. Number of export markets was assumed to play an important and significant role in dividing the type of strategy (either concentration strategy or diversification strategy). It was assumed that years of starting export would be a strong influence on the responses to the questionnaires.

Experience is a major factor in firms' positions. Therefore, it was assumed that experience would be valuable for a research study because firms would have gained knowledge that would benefit the research and contribute to the subject matter of this study. The firms were identified as being either small, medium or large size according to the number of employees.

Questionnaire Analysis

All data were keypunched, verified, and computerised in order to produce the highest attainable level of accuracy. The questionnaires were edited and coded, using a COBOL coding form for the purpose of computer processing. The analysis was carried out on a personal computer, using the Statistical Package for the Social Sciences Extended Programme package (SPSS-X).

Results

Table 4 presents a list of 25 obstacles facing Saudi exporters. Respondents were asked to rate these obstacles on a five-point scale (0-4). Mean scores were calculated for each item. The items are presented in Table 2 in rank order, based on the mean.

The first obstacle, competition with foreign firms in export markets, gave the highest mean, 3.212. This was followed by lack of information about potential export markets with a mean of 2.887, and dumping strategy in some export markets, with a mean of 2.856. However, the fourth and the fifth obstacles facing Saudi exports, which are increasing tariffs in other countries and restrictions in importing countries, could be classified as external economic barriers; they are to some extent uncontrollable. These are the five most important obstacles facing Saudi exporters.

Table-4: The Obstacles Facing Saudi Exporters

Obstacles to Saudi Exporting	The Mean
Competition with foreign firms in export markets	3.212
Lack of information about potential export markets	2.887
Dumping strategy in some export markets	2.856
Increasing tariffs in other countries	2.808
Restrictions in importing countries	2.763
Unclear trade agreement with other countries	2.740
Cost of importing raw material	2.677
Lack of the right personnel involved in exports	2.649
High transportation cost out of S.A	2.531
Lack of experience in exporting	2.500
Supplying services in foreign markets	2.389
High cost of Saudi seaports	2.326
Differences in product standards	2.302
Complex export procedures	2.263
Insufficient companies specialising in export	2.208
Cost of intermediate local products	2.118
Obstacles related to Saudi seaports	2.077
Unfamiliarity with export documents & licenses, shipping and procedures	2.031
High transportation cost in S.A	2.010
High standard requirement of technology in the industry	1.891
Difficulties in finance from international markets	1.806
Cost of labour in S.A	1.762
Insufficient production capacity to meet foreign demand	1.698
Lack of insurance cover	1.691
Differences in exchanging currency	1.660

Moreover, with regard to how Saudi exporters might overcome these obstacles, the investigations suggested fifteen factors to the firms which might improve Saudi exporting. Table 5 shows these factors and how important each one is to improving Saudi exports, in the perception of the

respondents. These factors are ranked in order of the means depending on the firms' responses.

The items rated most highly by respondents were that of giving more discounts to exporters for transportation and loading, establishing an up-to-date computer information system to provide the exporter with information about any international market, incentive agreement with other countries for exemption from customs duties, greater support for exporters from the Saudi embassies and speeding up export procedures.

From these responses, it can be seen that even though the Saudi government gives some incentives to Saudi exporters, exporting firms are still looking for more support from the government and this opens up areas for debate which should be covered by another study.

Table-5: Factors which may Improve Saudi Exports

Factors which may improve Saudi Exports	The Mean
Give more discounts to exporters for transportation and loading	3.535
Establish up-to-date computer information system to provide exporters with information about any international markets	3.505
Incentive agreement with other countries for custom exemptions	3.465
The S.A. embassies should be more active in supporting exporters	3.367
The procedure of export should be faster	3.323
Support the organisations responsible for exports	3.260
Give exporters a special price to exhibit their products abroad	3.250
Reduce the customs duties on import of intermediate products for exporters	3.213
Special price from SABIC companies to exporter firms	3.205
Establish special bank to support exporters in their operations (especially new exporter)	3.145
Allow new exporters to exhibit their products abroad, free of charge	3.134
Give subsidy to exporters	3.116
Establish special companies responsible for export activities	2.796
Special price for exporters when they bring labour into Saudi Arabia	2.747
Encourage overseas companies to invest in Saudi Arabia	2.368

Approximately 48 per cent of the firms (successful exporters) carried out market research before taking an export decision, while about 10 percent of the firms did not undertake market research before taking an export decision. In the other group (less successful exporters), 25.8 per cent of the firms carried out market research before taking an export decision. However, 15.7 per cent of the firms did not carry out market research before they took an export decision.

In measuring export success by the export ratio, it was found that approximately 21 per cent of the firms (successful exporters) had a separate export department to handle export activities while 27.6 per cent did not. On the other hand, of the less successful exporters, 14.3 per cent of the firms had a separate export department while 36.7 per cent of them did not.

Summary and Recommendations

The importance of exports in contributing towards economic growth is widely recognised in Saudi Arabia. However, there has been a lack of empirical research at the firm level. The study, therefore, is a contribution to define the obstacles Saudi exporters face of non-oil products. Furthermore, this study provides new information on the export behaviour and performance of non-oil producing firms in Saudi Arabia; and suggests fifteen factors that might improve Saudi Exports.

According to the firms' respondents, the major obstacles faced by Saudi exports are: competition with foreign firms in export markets; lack of information on potential export markets; and dumping strategy in some export markets. These three barriers can be classified as marketing obstacles, and are to some extent controllable. The fourth and fifth obstacles are increasing tariffs in other countries and restrictions in importing countries; these can be classified as external barriers and are to some extent uncontrollable. The above barriers are the five most important obstacles faced by Saudi exporters.

A number of factors were suggested to firms that may improve Saudi exports and overcome such obstacles. The most important five factors, in the perception of respondents, are as follows: giving more discounts to exporters for loading and transportation, establishing an up-to-date computer information system to provide exporters with information about the international market; incentive agreements with other countries for custom exemption; Saudi Arabian embassies being more active in supporting exporters; and, finally expediting the procedure for export in Saudi Arabia.

Further some firms complained about the high electricity connection fees; therefore, the investigation suggests special electricity connection fees for export firms may be adopted.

Although the Ministry of Industry has provided some incentives for Saudi firms, Saudi exporters are still looking for more support from the Ministry of Industry and other related ministries and agencies. Their main needs could be met by:

- Establishing a new organisation that has executive authority. Such an organisation should be linked (at a high level) with the Saudi government to be responsible for export activities.

- Granting more discounts to exporters for loading and transportation (allowing for WTO regulations).

- Establishing an up-to-date computer information system to provide exporters with information about any international market.

- Arranging incentive agreements with other countries for custom exemptions, to arrange an open market between these countries. This would be a task for the Trade Ministry.

- Speeding up export procedures in Saudi Arabia and better linkage with embassies.

- Introducing special electricity connection fees for exporting firms.

- Co-operation between firms, that produce similar products, to import raw material via one order, from the same supplier, instead of ordering them individually, to reduce costs.

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Capacity Utilisation in the Large-Scale Manufacturing Sector: An Empirical Analysis

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Abstract

This paper is concerned with the quantification of the rate of capacity utilisation and its major determinants in the large-scale manufacturing sector of Pakistan. A cross-section analysis has been made for 68 five digit industries for the period 1995-96. A number of hypothesis have been tested using the regression technique. Keeping in view the problem of load shedding in Pakistan, it has been taken as an important variable affecting the rate of capacity utilisation in the manufacturing sector. Regression results are in conformity with the earlier studies that supply factors are playing a major role in determining the rate of capacity utilisation. Among supply factors electricity consumption has appeared to be statistically significant.

Introduction

An important factor determining industrial output employment and employment is the maximum utilisation of the existing stock of capital in developing countries. These countries are generally characterised with a scarcity of capital stock on the one hand and underutilisation of the capital stock on the other. Pakistan also faces a similar perplexed situation as the average rate of capacity utilisation in the manufacturing sector is very low. For example, Farooq and Winston (1978) cited in their studies that industrial capital stocks in both Pakistan and Korea are idle over 85 per cent of the time (p. 227). Similarly, Hogan (1967), Winston (1971), Kemal and Allauddin (1974), and Pasha and Qureshi (1984) have also reported a low rate of capacity utilisation in the manufacturing sector of Pakistan. Hence, the detailed analysis of the low rate of capacity utilisation in the manufacturing sector of Pakistan is self evident.

A number of factors are considered responsible for the low rate of capacity utilisation. However, with reference to Pakistan one could argue that since 1980 there has been widespread load shedding across the country. The problem of irregular supply of electricity accentuates particularly during the summer. This may have affected the rate of capacity utilisation in the large

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scale manufacturing sector of Pakistan. Contrary to the earlier studies this paper explicitly takes into account load shedding/irregular electricity supply (which is proxied by electricity consumption) as an important variable affecting the rate of capacity utilisation in the manufacturing sector of Pakistan.

The organisation of the paper is as follows: Section-II describes methodology and data description. In Section-III the existing rate of capacity utilisation in the manufacturing sector is calculated. Section-IV develops a model of capacity utilisation followed by testing different determinants of the rate of capacity utilisation. Section-V discusses regression results. Finally Section-VI concludes with some major findings.

II. Methodology and Data Description

For the analysis of capacity utilisation 68 industries at the five digit level of Pakistan Standard Industrial Classifications were selected. These industries account for 82 per cent of total value added of large-scale industries. Cross-sectional data for the year 1995-96 has been utilised. For estimation purposes the OLS technique has been used. The source of data is the CMI (1995-96) and Pakistan Statistical Year Book (1998). The data on capacity utilisation has been calculated by using a formula (which will be given in Section-III). The quality of data is always a problem in developing countries, increasing the likelihood of measurement error in regression analysis and Pakistan is no exception to this. As a rule of thumb if the rate of capacity utilisation is below 50 per cent, we could say that the rate of capacity utilisation is low in the large-scale manufacturing sector.

III. The Rate of Capacity Utilisation

Although economic literature provides many ways to measure the rate of capacity utilisation (see Leeuw 1962; Schultz 1963; Winston 1974a, b; Betancourt and Clague 1975), however, Lim (1976) recommends a time measure, Ut, as a more reliable measure of capacity utilisation. In this method, the rate of capacity utilisation is expressed as the ratio of actual number of working hours of a plant to total number of working hours available in a year. The technique has one drawback in that it does not make any allowance for maintenance and repair of plants and machinery. A refinement to the Ut measure is the inclusion of an intensity measure Uit, which takes into account the intensity of the operation of the plant. For example, if the entrepreneur intends to run the plant at 100 per cent of Ut, there would not be any difference between the Ut and Uit measures. However, if the entrepreneur's intention is to run the plant by only 50 per cent Ut would be adjusted downward by half.

As no substantial difference in the rates of capacity utilisation based on Ut and Uit measures has been found by Lim (1976), Ut is still said to be a good approximation of capacity utilisation. We have used the time measure Ut of estimating the rate of capacity utilisation in Pakistan's manufacturing sector by making an allowance for the maintenance and repair of plant and machinery. The technique has been selected mainly because of its simplicity. This method can be simply written as:

$$Ut = \frac{DW.HW.SW}{DA.HA.SA}$$

Where;

DW = Actual days worked per year by the firm
HW = Actual hours worked per shift by the firm
SW = Actual number of shifts operated by the firm
DA = Potential days available per year
HA = Potential hours per shift assumed
SA = Potential number of shifts per day

For the **potential** values in the denominator we have assumed total number of potential working days per year 300; number of potential working hours in each shift 8; and finally the maximum shift coefficient/ number of shifts per day 3. An allowance of 65 days per year has been made for the maintenance of plant and machinery. Thus, the maximum capacity utilisation from our point of view is the level of output which firms achieve if they were working at 7200 total hours per year. In other words, capacity utilisation can be expressed as:-

$$Ut = \frac{DW.HW.SW}{300 \cdot 8 \cdot 3}$$

In the above formulation, variables that affect the rate of capacity utilisation are the number of days worked per year, hours worked per shift, and the number of shifts per day. The assumption of 3 shifts may not be realised in practice for many types of industries. For some industries such as chemicals, cement, mineral processing, and fertilisers which are continuous process industries, the assumption of three shifts may hold true. However, there are non-continuous process or batch making industries. Generally these industries produce several types of products in batches, operating generally in only one shift. However, some units may produce one type of product in several sizes in one or two shifts, and a very small number operate three shifts. As the above formula

is a theoretical measure of a plant's maximum capability, by definition, the capacity measure would be uniform for both continuous and non-continuous or batch process industries. According to Winston (1971) there is a wide variety in the number of shifts a firm considers normal, and therefore the level of operation it reports to any data-collecting agency as "full utilisation" of capacity (p. 41). Hence, it makes sense to accept self-imposed, subjective standards of full utilisation and ask whether performance measures up to them (Winston 1971, p 42). It is quite possible that the standard maximum working hours may conflict with the entrepreneurial standards of correct capital use. However, owing to the scarcity of capital in developing countries, the firm's idea of full utilisation of capital is generally disregarded and it is assumed that utilisation of the existing stock of capital through an increased total number of working hours/shift work is possible and relatively costless (see Winston, 1971 for theoretical discussion).

The criteria for selecting industries is based on total demand for the product of each industry. Consideration of the demand element is important because demand constraints may be a major obstacle to full utilisation of capital stock in most industries. We have selected those industries where exports or imports are at least 10 per cent of their total output. The implicit assumption behind this is that these firms have no shortfall of demand. But in some industries even without significant exports or imports there may not be any demand constraint. For example, we have noticed that in the vegetable ghee, starch, fertilizer, and cement industries the number of working days per year are more than our assumed number. Hence these industries may have sufficient domestic demand without having 10 per cent exports or imports. Another possibility is that these industries may be carrying out maintenance during the day rather than having to close the factory down.

Some provision is also made for seasonal industries. For the sugar industry, because of its seasonal nature, i.e., not working the full year, we have assumed 6000 as the maximum total working hours during a year.

The details of capacity utilisation pattern in 68 industries is provided in Table-1 which shows that capacity utilisation ranges from very low 24 per cent to very high 115 per cent. The average rate of capacity utilisation is 45 per cent per annum. However, average capacity utilisation is slightly more than 60 per cent when weighted either by the value of fixed assets or by value added. Industries where capacity utilisation is very high are vegetable ghee, starch, cotton spinning, alkalies, glass, fertilizers, and cement. Only 16 industries out of a total 68 industries show capacity utilisation above average while the remaining 52 industries work below average (Table-1).

Table-1: Average Rate of Capacity Utilisation

	Industries	Capacity Utilisation
1.	Canning of fruits and vegetables	0.36
2.	Canning of fish and sea food	0.29
3.	Vegetable ghee	1.06
4.	Other vegetable oils	0.60
5.	Sugar	0.55
6.	Feeds for animal	0.24
7.	Starch	1.01
8.	Salt	0.34
9.	Spirits & wine and fruit products	0.35
10.	Other Soft Drinks	0.35
11.	Cigarettes	0.64
12.	Cotton spinning	1.03
13.	Woollen textiles	0.45
14.	Silk and art silk textiles	0.58
15.	Finishing of textiles	0.35
16.	Made up textile goods	0.42
17.	Carpets and rug cotton	0.20
18.	Carpets and rugs Woollen	0.32
19.	Spooling and thread ball making	0.35
20.	Other textiles	0.45
21.	Tanning and leather finishing	0.30
22.	Other leather products	0.42
23.	Plywood and products	0.30
24.	Medicines and drugs	0.31
25.	Unani and other medicines	0.30
26.	Alkalies	1.00

Cont.

	Industries	Capacity Utilisation
27.	Acids, salts and intermediates	0.50
28.	Dyes, colours and pigments	0.51
29.	Fertilizers	1.10
30.	Paints, varnishes and lacquers	0.40
31.	Perfumes and cosmetics	0.30
32.	Soap and detergent	0.42
33.	Matches	0.56
34.	Petroleum products	0.40
35.	Tyres and tubes	0.48
36.	Retreading tyres and tubes	0.35
37.	Rubber foot-wear	0.32
38.	Glass	1.04
39.	Glass products	0.56
40.	Bricks and tiles	0.35
41.	Cement	1.15
42.	Cement products	0.35
43.	Other non-metallic mineral products	0.36
44.	Iron and steel mills	0.47
45.	Iron and steel foundries basic industries	0.45
46.	Re-rolling mills	0.35
47.	Cutlery	0.34
48.	Metal furniture	0.36
49.	Wire product	0.40
50.	Metals barrels and drums	0.33
51.	Bolts, nuts, rivets etc.	0.33
52.	Engines and turbines	0.34
53.	Agricultural machinery	0.36

Cont.

	Industries	Capacity Utilisation
54.	Textile machinery	0.36
55.	Other industrial machinery	0.37
56.	Electrical industrial machinery	0.34
57.	Radio and television	0.30
58.	Electrical appliances	0.29
59.	Insulated wires and cables	0.40
60.	Ship and boat building	0.37
61.	Rail road equipment	0.32
62.	Motor vehicles	0.36
63.	Motor Cycles, auto rickshaws	0.35
64.	Cycles and pedicabs	0.36
65.	Jewellery and musical instruments	0.31
66.	Toys	0.47
67.	Pens and office supplies	0.30
68.	Other manufacturing	0.32

Simple Average	0.45
Weighted Average (weighted by the value of fixed assets)	0.65
Weighted Average (weighted by value added)	0.64

It is very clear from Table-1 that more than 50 per cent of the industrial capacity was lying idle in 1995-96 and there are large inter-industry variations in capacity utilisation.

The correlation coefficient between capacity utilisation and the average number of shifts in our analysis is 0.99 which is positive and very high. This implies that any increase in the number of shifts would be a means of increasing capacity utilisation in the manufacturing sector of Pakistan.

IV. A Model of Capacity Utilisation in Pakistan

Our model of capacity utilisation in Pakistan attempts to estimate a multiple regression equation (explaining inter-industry differences in capacity utilisation) using cross-sectional data for 68 industrial groups for the year 1995-96. The main question under consideration is why the existing stock of capital is not fully utilised in Pakistan's manufacturing sector. The model to test the various hypotheses concerning factors affecting capacity utilisation is specified in the following form;

$$Cui = a1 + b1x1i + b2x2i \ldots bnxni + ui \quad (1)$$

Where Cui is a capacity utilisation in industry i and x1i x2i..xni are the explanatory variables for industry i. ui is the error term.

Hypotheses and Variables

The following are the variables included in the model:

Electricity Shortage (lel): In our opinion an important factor affecting capacity utilisation in Pakistan's manufacturing sector may be the irregular power supply/load-shedding. Owing to the increased demand for electricity, the government has used a load-shedding programme since the 1980s. Industries may be reluctant to increase total working hours in view of the possibility of power shut down at different periods of time.

The seriousness of electricity shortage may also be observed by a WAPDA press release. During 1990-91, industrial units were advised to reduce the use of electricity from 5 pm to 8 pm. This timing was selected because of the increased demand for electricity at this time of day. The main points are stated below:-

> All steel furnaces which get electricity from separate feeders, the supply of electricity to them is shut down from 5 to 8 p.m.
>
> All steel and re-rolling mills which are supplied from mixed feeders, the supply of electricity will shut down from 5 to 8 p.m.
>
> All textile mills are directed to reduce the consumption of electricity voluntarily between 5 to 8 p.m. If they do not, WAPDA will be forced to stop supplying electricity.
>
> Continuous process industries such as cement, chemical plant, medicine making units, fine paper, glass, and pottery etc. which get

> electricity from feeders separate from WAPDA, are advised to cut down the electricity load by 25% between 5 to 8 p.m.
>
> Comparatively less important industries, i.e. industries which work in one or two shifts, will be closed between 5 to 8 p.m.

Although the above WAPDA statement was released during the early period of the 1990s, the problem still remains intact. Load shedding is likely to continue especially in summer and even to increase in the future. It has been forecast that by the year 2010 the country will require the generation of more than 34, 191 MW electricity and installed capacity will not be higher than 19,000 MW. Thus Pakistan is likely to face an energy shortage in the future.

UNIDO (1990) has referred to a study report by the United States Agency for International Development (USAID), according to which Pakistan is losing about $500 million annually of value added in manufacturing due to load-shedding (p. 90). It has also been reported that hydro-season induced load-shedding results in an 18 per cent loss of manufacturing value added for small industries, compared with 5.5 per cent for large industries (UNIDO, 1990, p. 90). Pasha and Qureshi (1984) have also reported that the percentage of days to total days lost due to power failure was the highest (27%) during 1971-76 (p. 41).

The data shows that the consumption of electricity by the industrial sector has declined from 1029.16 TOE to 975, 788 TOE in 1993-94 and 1996-97 respectively (*Pakistan Energy Year Book*, 1999). This might be due to the power breakdown and irregular supply of electricity to the industries. The escalation of electricity tariffs might be an additional reason for the decline in the consumption of electricity.

On the basis of all this information we hypothesise that power shortage/breakdowns may be an important factor hindering capacity utilisation and introducing more shifts into the system. The major difficulty that we face is the lack of data on the actual and desired consumption of electricity in industries to substantiate the effect of shortage of electricity on capacity utilisation. To get round the problem the electricity consumption as a proportion of value added is proxied for load shedding on the basis of the assumption that there is a functional relationship between output and electricity consumption on the one hand and capacity utilisation and electricity consumption on the other. We assume that output is a function of electricity consumption. (See appendix for the statistical relationship). As the former is

also a function of capacity utilisation a positive relationship may be postulated between capacity utilisation and electricity consumption as well.

Our hypothesised positive relationship between electricity consumption and capacity utilisation in fact stems from some other studies where the consumption of electricity has been proxied to measure capacity utilisation in industries. For example, Kim and Kwon (1971) used electricity consumption as a measure of capacity utilisation. Hence, after establishing this positive relationship in the manufacturing sector of Pakistan we implicitly assume that as power is shut down, consumption of electricity is disrupted in industries, thus both output and capacity utilisation may be affected. However, the limitation of this assumption is that if firms get electricity supply from some other sources e.g., they use their generators etc., output and capacity utilisation may not be affected much.

Exports/Demand Pressure (lexp/lag): A positive relationship is hypothesised between exports and capacity utilisation. It is generally expected that higher exports would enable a firm to utilise more of its production capacity because of higher demand for the product. The proportion of exports to total output (lexp) has been taken to reflect demand for the product. Alternatively we have also tested total demand pressure on an industry with the assumption that higher demand for a product would lead to more capacity utilisation and vice versa. Following Goldar and Renganathan (1991) we have taken the annual average growth rate of production between 1977-78 and 1984-85 (lag) in each industry to reflect total demand pressure on industries.

Imported Raw Material (lim): This variable is taken as the ratio of imported raw material to total inputs and reflects industry's dependence on imported raw materials. An inverse relationship is expected to prevail between capacity utilisation and imported raw-materials. The logic behind this negative relation is that the difficulties in getting foreign exchange or import licences in time create problems for the availability of raw materials and reduce capacity utilisation.

Average size of the firm (ls): This variable can be measured either in terms of value of fixed assets per firm or total employment per firm. We have used both of these measures. A positive relationship between capital utilisation and size of the firm is hypothesised. Larger firms are more capable of maintaining a high level of capacity utilisation and vice versa.

Number of firms (ln): The number of units in the industry is taken as a proxy for the extent of competition or market structure within the industry. It is positively related to capacity utilisation. The assumption is that the more

the number of firms, the greater will be the degree of competition and hence, more inducement to utilise the stock of capital.

Labour Productivity (lvl): This is taken in terms of total value added per employee. A positive relationship is assumed to prevail between labour productivity and capacity utilisation.

Capital-value added ratio (K/V): This variable is the ratio of fixed assets to value-added by industry. It corresponds to the capital-output ratio for a firm. A different type of relationship between the capital-output ratio and the rate of capacity utilisation has been given by Malcolmson (1973). It is emphasised that capital-intensive undertakings are characterised more by plant indivisibilities, implying concave costs of adjustment of capacity. In such cases there will be a greater tendency to create capacity ahead of demand. This implies that, in the initial years of a plant's life, there may be some built-in excess capacity. The other reason is that capital-intensive investment frequently embodies the transfer of complex technology, and it takes a longer time for management in developing countries to master the operations of such plants. These arguments imply a negative relation between the capital-output ratio and capacity utilisation.

V. Results

Our model has two sets of data. The first set takes the average size of the firm in terms of total employment per firm (ls). The second set measures the average size of the firm in terms of total value of fixed assets per firm (lsa). We have checked all our estimates for the presence of heteroscedasticity by applying different tests but found no element of heteroscedasticity.

Initially we have tested our model by taking into account all variables in the model. Four variables out of the seven are insignificant and do not seem to have any impact on capacity utilisation. These are number of firms (ln), capital value added ratio (lk/v), exports (lexp) and imported raw material (lim). On the other hand average size of the firm (ls), labour productivity (lv/l) and electricity (le) are highly significant at the 1 per cent level. All the significant variables have the correct expected signs. The R^2 is 0.60 (Table-2).

We have also measured total demand pressure in industry by taking average growth rate of output between 1984-85 – 1995-96 (lag) and tested the model by using the first set of data. The average growth rate (lag) is insignificant and overall statistical results are not different from the earlier ones (see Table-3).

Table-2: Regression Results (First set of data)

Variable	Estimated coefficient	t-ratio	
ln	-0.132	-0.314	R^2 = 0.60
ls	0.156	4.875*	R = 0.55
lvl	0.167	3.103*	
le	0.232	5.467*	F(8 60) = 11.915
lkv	-0.073	-1.301	
lexp	0.021	1.187	
lim	0.016	0.643	
cons	-1.683	-7.564	

* significant at the 1% level.

Table-3: Regression Results (First set of data)

Variable	Estimated coefficient	T-ratio	
ln	-0.017	-0.573	R^2 = 0.73
ls	0.976	2.670*	R = 0.69
lvl	0.172	3.108*	
le	0.203	4.951*	F(8 60) = 17.712
lkv	-0.051	-0.895	
lag	-0.005	-0.216	
lim	0.028	0.251	
cons	-1.932	-1.232	

* significant at the 1% level.

In the second set of data, labour productivity (lvl) has become insignificant along with number of firms (ln), exports (lexp), and imported raw material (lim) while capital value added ratio (lkv) is significant at the 1% level (Table-4). The correlation coefficient between lkv and lvl is 0.654 implying multicollinearity between capital value added ratio and labour productivity. This may be one of the reasons for an insignificant effect of labour productivity on capacity utilisation.

Table-4: Regression Results (Second set of data)

Variable	Estimated coefficient	t-ratio	
ln	-0.098	-0.298	R^2 = 0.58
lsa	0.131	4.124*	R = 0.50
lvl	0.085	0.873	
le1	0.230	5.517*	F(8 60) = 9.998
lkv	-0.158	-2.315*	
lexp	0.029	0.096	
lim	0.023	0.646	
cons	-1.763	-7.126	

* significant at the 1% level.

Finally, dropping all insignificant variables we have reported our final results by using both sets of data (Tables-5 and 6).

Table-5: Final Regression Results (First set of data)

Variables	Coefficients	t-ratio	
ls	0.139	4.686*	R^2 = 0.56
lvl	0.188	3.928*	R = 0.53
le1	0.199	5.787*	F(4 63) = 26.66
Constant	-1.931	-9.796	

* 1% level of significance.

Our final results show all the three variables viz; average size of the firm (ls), labour productivity (lvl) and electricity consumption (le1) are highly significant at the 1% level (Table-5). The value of R^2 indicates that 56 per cent of the variation of dependent variable is explained by the independent variables. The value of F test shows that the model is well specified.

The regression results using the second set of data are reported in Table-6. In this model all variables viz: average size of firm (lsa), electricity consumption (le1) and capital value added ratio (lkv) are significant at the 1% level. There is a negative relationship between capital value added ratios and capacity utilisation. The F test shows that the overall fit is good. The value

of R^2 shows that 54 per cent changes in capacity utilisation are explained by average size of firm, electricity consumption and capital-value added ratio.

Table-6: Final Regression Results (Second set of data)

Variables	Coefficients	t-ratio	
lsa	0.152	6.728*	$R^2 = 0.54$
lel	0.237	5.574*	$R = 0.52$
lkv	-0.214	-3.837*	$F(4\ 63) = 23.135$
Constant	-1.730	-8.940	

* 1% level of significance.

The number of firms (ln) appears insignificant, implying that market structure does not affect capacity utilisation in the manufacturing sector of Pakistan. A similar result has been found by Kemal and Aluaddin (1974) and Pasha and Qureshi (1984) in their empirical studies. Winston (1971) however, reported the number of firms significant at the 95 per cent level of confidence (see p. 47).

Imported raw materials also appear insignificant in our statistical results. However, earlier Winston (1971), reported the significance of imported raw material at the 99 per cent level of confidence for the year 1965-66. During the sixties, the import policy of Pakistan was highly restricted and licenses were issued for imports of raw materials and machinery. But gradual liberalisation of imports may have reduced the significance of this variable. Many industries such as transport, drugs and pharmaceuticals, agricultural machinery, industrial machinery, steel, motor vehicles such as the car industry etc. still depend on imported raw materials (CMI, 1995-96), but because of a more liberal import policy it may no longer be a hindrance to capacity utilisation.

The size of firm measured either in terms of employment or value of fixed assets is highly significant at the 1 per cent level (Tables-5 and 6). There is also no significant difference in the coefficient of average size of firms in terms of two measures (Tables-5 and 6). Thus, other things being equal, larger units have higher rates of capacity utilisation. Our result is in conformity with the results of Pasha and Qureshi (1984) who quoted the significance of average size of firm at the 5 per cent level (see p. 48). Islam (1978), also provides similar evidence for the manufacturing sector of Bangladesh.

The electricity variable is significant at the 1 per cent level. The sign of the coefficient is consistent with our expectations. The magnitude of the coefficient shows that a 1 per cent change in electricity consumption will bring about a 0.20 per cent change in capacity utilisation. Given the positive and strong relationship between electricity consumption and capacity utilisation, we may say that any uncertainty in power supply may affect further utilisation of idle capacity.

Labour productivity (lvl) is significant at the 1 per cent level (Table-6). There may be many explanations for the positive relationship between capacity utilisation and labour productivity. If high labour productivity reflects high capital intensity then it may be said that capital intensive firms have a high rate of capacity utilisation. However, in our regression analysis a negative relationship has been found between capital-value added ratios and capacity utilisation and a contradiction exists in capital intensity in terms of high labour productivity and high capital-value added ratios. One plausible reason may be that the functional relationship among different variables under production function analysis are based on many stringent assumptions which in reality may be difficult to sustain. High labour productivity may be reflecting economies of scale and efficiency of firms and these firms may have a greater tendency to utilise their capacity.

The capital-value added ratio is also significant at the 1 per cent level. The negative relationship between the capital-value added ratio (lkv) and capital utilisation confirms Malcolmson's (1973) type of argument that capital-intensive plants may have a tendency to remain idle for most of the time due to indivisibility of the plant.

IV. Conclusion

Our analysis has shown that on average the rate of capacity utilisation is very low and a sizeable capacity lies idle in the manufacturing sector of Pakistan. However, a margin of error always remains in statistical analysis and results should be interpreted with caution. A number of factors have been tested determining the rate of capacity utilisation. Regression results show that the consumption of electricity, labour productivity, average size of firm and the capital-value added ratio are the major factors affecting the rate of capacity utilisation in industries. The nature of these factors is domestic and a prudent policy may be helpful in increasing the rate of capacity utilisation in the industrial sector of Pakistan.

Appendix

Statistical Relationship Between Electricity Consumption and Output

We have run a regression to quantify the functional relationship between output and electricity consumption in both linear and log linear form for 68 industries (Table-1) for the year 1995-96. The statistical results are as follows:

$$Q = \underset{(2.878)}{191.58} + \underset{(4.432)^*}{2.984\ Ele}$$

$$R^2 = 0.23 \qquad F = 19.637$$

Where Q is value added at constant factor prices of 1975-76, Ele is the consumption of electricity by different industries.

$$LogQ = \underset{(16.750)}{2.913} + \underset{(11.152)^*}{0.735 logele}$$

$$R^2 = 0.65 \qquad F = 124.363$$

Where Q is value added at constant factor prices of 1975-76, and ele is the consumption of electricity. Both values are in log terms. The statistical results show a positive and highly significant relationship between output and electricity consumption in industries at the 99 per cent level of confidence. The coefficient of log shows that a 1 per cent increase in electricity consumption is associated with a 0.7 per cent increase in output. It means that for any given increase in output a more than proportional increase in consumption of electricity is required. This implies that more generation of electricity would be required to produce more output.

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Note:

The Economy of Seepage and Leakage in Asia[1]: the most dangerous issue

Gilbert Etienne[*]

Pakistan, India, Bangladesh, Vietnam, Indonesia, China and other Asian countries already face very serious challenges in infrastructure, agriculture, State owned enterprises and environment. Inspite of the increase in private investments, local or from outside, the situation could get worse in the next decade or so for lack of public finance. Such a shortage is bound to slow down future growth, particularly in China, Indonesia and Vietnam, and prevent an acceleration of growth in South Asia. One major remedy would be to reduce seepage and leakage of public money which has taken on such enormous proportions, that it looks like being the most critical issue for the coming decades.

The leakages so often referred to in Pakistan are, in fact, far from confined to that country, as shown below. However, such leakages have worse effects in Pakistan than in India and China, because of the much more precarious financial situation of Pakistan.

There is, at last, a **healthy reaction against corruption**. The World Bank, the IMF, the OECD, several governments of rich and poor countries are now striving to curb this rising disease. However, what I call ***the economy of seepage and leakage*** goes beyond corruption. I see the problem as having three tiers: ***misallocation of resources in general***, the result of government policies or weak administration: excessive subsidies, real estate speculation, wasteful expenditure, neglect of most urgent investments in infrastructure and lack of public operations and maintenance expenditures. Then come **losses of revenue:** tax fraud, smuggling, poor enforcement or collection of fees and taxes; finally ***corruption*** including a variety of malpractices. All these factors severely curtail public investment and recurrent expenditure devoted to productive tasks, at the time when public funds are badly needed and in short supply.

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[1] I wish to thank my old friend and colleague Norman Scott who helped me to improve the first version of this paper. This is an enlarged and updated version of a paper first published in June 1997 by the MARC.

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In spite of sound trends aimed at a reduction of the scale of government activities in industry and services, the **State** has still a major role to play as an agent of development, even though the rightist dogmas have replaced, since the 1980's, the leftist dogmas.

While this paper is confined to Asia, it seems likely that some of the following observations apply to Latin America and Africa. According to the OECD estimates: "Every year some eighty billion $ are paid out world-wide in the form of bribes" and it may be the "tip of the iceberg". Besides, these data are confined to corruption only (*OECD Observer*, No. 216, March 1999).

The estimates given below are of course very rough, yet they underline the magnitude of the problems and the diversity of losses for governments. Most of them come from local reports and surveys.*

China: smuggling 12 billion in 1998;
tax evasion 30 billion $ in 1993: unpaid taxes in construction projects 2 billion dollars in 1997;
illegal electrical connections 804 million $ in 1993;
expenditures on official banquets, nearly 15 billion $ in 1993;
real estate speculation, 50 million sq. m empty in 1993, costing 24 billion $;
illegal taxes raised by local authorities, 800 million to 1.4 billion per year, part of them ending in private pockets;
bad debts of State owned enterprises, around 200 billion $ in 1998;
diversion of State budget funds to set up private luxury flats 2 billion $ in 1997;
diversion of funds from grain departments for "illegal actions"
6.7 billion $ between 1992 and 1998.

President Jiang Zemin has often condemned "illegal operations of banks and frauds by enterprises". Zhu Rongji, the Prime Minister is particularly active, going round to local offices in order to curb malpractices.

India: non recovery of telephone bills, 750 million $ in 1995;
tax evasion, about 30 billion $ per year;
overinvoicing of exports and underinvoicing of imports to and from USA, 2 to 4 billion $ in 1994;

subsidies, often of questionable value, equivalent to 15% of GDP in 1997;
illegal assets abroad 40 billion $;
default loans mostly from public sector enterprises, 11 billion $ in 1996;
free or very cheap electricity supply to farmers for opportunistic reasons:
diversion of funds allocated for electric networks maintenance or for irrigation works to private pockets;
losses in electric power supply, 40 to 50% of total output, half of it in pilfering and other malpractices estimated at 1.2 billion $ per year.
Cumulative financial losses of State Electricity Boards 2.8 billion $ 1998.

In India too, some political leaders and many representatives of public opinion have taken a strong stand against such leakages, and the judicial system has become more active in fighting corruption. Yet a lot remains to be done.

Pakistan: smuggling 3 billion $ per year;
tax evasion 3 billion $;
losses due to corruption 2.5 to 5 billion $ per year;
default loans to the banks 3 billion $;
size of the black economy: 30 to 40 billion $;
power thefts from Karachi Electric Supply Corporation: 35% of power generated. 450,000 illegal connections in Karachi and 46,000 defective meters.

In addition, as a consequence of the continuing Afghan wars, narcotics and arms trafficking increase the already large flows of black money. Efforts are being made to fight such malpractices, but there is a long way to go[2].

We do not have comparative data on other Asian countries but seepage and leakage are considerable. According to the *Asian Development Bank, Annual Report 1998*, "corruption (alone) has added 20 – 100 % to the cost of procuring governments goods and services in several countries". Following the 1998 Report of Transparency International, Bangladesh, Vietnam and Indonesia seem to suffer from more corruption than the three above quoted countries, Thailand and the Philippines are at a rather similar level.

[2] After writing this paper the military coup in Pakistan occurred and it will be interesting to see the results of the fight against leakage and corruption.

Some of the most glaring cases of seepage and leakage are found in infrastructure. It is not uncommon to find that corruption, wrong allocations of public money, high subsidies, lack of maintenance expenditures, weak management and poor tax collection, pilfering (in the case of electricity) are interconnected.

The need for more **public expenditure** run into hundreds of billion $ for the next five years or so, particularly in infrastructure. A few years ago, several Asian governments had put much hope on private, foreign or local investments in line with formulas such as BOT (build-operate-transfer) or BOO (build-operate-own) for electricity and transport. Experience has shown that FDI (foreign direct investments) are reluctant to enter such costly and risky projects, so that only a few of them are being implemented. That reluctance is greater now, following the East Asian crisis and the difficulties of China, Vietnam, India and Pakistan.

As a result, most Asian countries cannot escape massive new public domestically financed investments and considerable increases in their current public expenditures for maintenance and operations- wholly insufficient since many years – of transport systems and electricity networks.

The gaps between supply and demand of electricity have already led to billions of dollars of losses for the economies concerned. It is continuing in India and Bangladesh, while in China the gap has been reduced with the slowdown of the economy.

The continuous losses of **industries and services in the public sector** is another large source of leakage and of default loans affecting the banks. These shortcomings are the most serious in China because the public sector is more important than in India and Pakistan. However, reforms are slow in all three countries.

Other topics, much less openly discussed, concern **agriculture** which still plays a major role in Asia, except in Japan, South Korea and the province of Taiwan. It contributes to 20-30 per cent of GDP, and employs 50 to 60-70 per cent of the active population, except in China where it seems to have fallen below 50 per cent. Basic research, extension services, hydraulic works have suffered for the past fifteen years from acute shortage of public money, from Pakistan to China, including several countries in South-East Asia. These defects explain, to a large extent, why the production increase of major crops has slowed down, and is aggravated when the weather is unkind (drought and/or floods). One cannot put excessive hopes on the market and private initiative. A clever farmer can by

himself invest in a drip system to irrigate his few hectares of orchards, make much money and create employment. On the other hand, it is beyond the farmers' ability to maintain or improve irrigation canal systems covering 100 – 300,000 ha or build large size reservoirs, dykes and major drains.

One should also mention the enormous needs for more public funds (in addition to private ones) in order to curb the deterioration of the **environment**. In China, "the economic cost of air and water pollution has been estimated at 3-8 per cent of G.D.P. a year" (World Bank Report, *China 2020*, 1997). The situation is quite comparable in India and Pakistan with costs of 4 to 6 per cent of G.D.P.

Where can public money be found? Foreign aid and FDI cannot cope with such challenges, hence the need to improve local finance, banking and taxation. Curbing seepages and leakages could help replenish the exchequer. At the moment the Chinese are the most active, but even there, a lot more remains to be done. Pakistan, Bangladesh, Indonesia, Vietnam are in a particularly tight financial situation. In India, the 1999-2000 budget aims at more investments in agriculture and infrastructure, but it is not sure that they will materialise.

Part of the leakages (corruption, smuggling, tax evasion) is not the sole responsibility of Asian ruling elites. Questions must be asked from their **foreign partners**. Here also, there is a move in rich countries – it started earlier in USA with the *Foreign Corrupt Practices Act* (1977)- to fight against such malpractices. In a way, one sometimes wonders whether in the long run, the image of a foreign company refusing to engage in ***bakshish*** might not have some commercial value. Besides, is it not in the general interest of foreign firms to deal with countries which are in a better financial situation?

Finally come **political factors**. Neither in Western countries and Japan, nor in most Asian countries is the political leadership particularly impressive. At the moment, personalities like Zhu Rongji who has thoroughly understood the implications of leakages – and not only corruption – are not so common in either rich or poor countries.

When tackling these issues, Westerners must avoid the frequent **pitfall of sermonising** and emphasising "good governance". Corruption and leakages are not lacking in rich countries, even if they are less widespread. The question is a practical one. We are in a much less tighter financial situation, with much less acute poverty and less population pressure than Asian countries. That is why we can afford a certain amount of loss and

waste. See for instance the case of France. The economy is doing reasonably well while 30 ex ministers, over 100 former or present parliamentarians and mayors and a quarter of present or ex heads of the 40 biggest corporations are "under formal investigation over various corruption scandals" (*The Economist, 5-6-99*).

In spite of the considerable economic and social achievements obtained in Asia, especially in the last twenty years, future progress may be in jeopardy, unless the economy of seepage and leakage is at least reduced. The present situation has reached, in many countries, such a critical point, that fast economic growth does not seem likely for the next five to ten years, if not more.

* Sources: All the data come from official reports or statements quoted in the following newspapers or journals from the countries concerned:

China : *Beijing Information*, 9-11-98; *China Business Review*, May-June 1994; *China Daily*, 3-5-94, 23-3-98, 7-5-98, 22-12-98, 6-4-99, 28-6-99.

India : *Times of India*, 30-1-97; *The Hindu*, 13-2-97; Ministry of Finance Report on Subsidies, 1997; *Economic Survey*, 1996/97; World Bank Report on Power, March 1998, quoted by Joel Ruet, Paris, CERNA, 1999. *Economic Times*, 6-9-99.

Pakistan : *Dawn*, 29-8-96, 10-10-96, 8-4-99, 26-5-99. *Human Development Report in South Asia*, 1999.

Book Review

Satu Kahkonen and Mancur Olson (Eds.), A New Institutional Approach to Economic Development; Vistaar Publications, New Delhi, 2000. pps 354. Price Rs. (Indian) 595/-.

Recent successes attributed to the field of economics have been outside the theoretical conservative boundaries of the subject. Modern economic thought is expanding rapidly in all directions: in the study of politics, law, and sociology, economists and other specialists using theories of economic thought and models have had significant influence. The book focuses on ideas that have driven the expansion of economics, namely collective choice, new institutionalist and neo classical political economy. The book has been divided into two main parts. The first deals with "the broadening of economics and emergence of an integral approach to social science" that are fundamental to any economy. The second part includes "some applications of the integrated approach" to India.

There are four basic concepts that are the building blocks for economic thought. The first of these basic principles is that individuals in a given society have preferences, purposes and utility functions. Secondly, they have various resources that help them produce goods and services that satisfy these preferences. Thirdly, incomes of households are constrained by resources available to them and the level of technology which is subject to change through resource development and innovation. The last idea is that markets are natural entities that emerge spontaneously and not planned entities of the government. Given these four premises, how has the field of economics broadened its horizon? The writers have tried to cross the theoretical boundaries of the subject by reconciling two main points. One was that some goods and services namely public goods and expenditures are not sold in the market and once they are made available to an individual they will be consumed by the entire society. The second point that had to be crossed is where income of individuals and groups depend on the availability of production resources and their productivity but also on the use of power. So if economists today want to explain what effects house hold income has on the rate of growth of income and its distribution, they have no choice but to take government, law and politics into account. Mancur Olson's article "Dictatorship, democracy and development" deals with different political systems and how their magnitude of power tends to hinder or facilitate economic gains. The fact that economic independence is determined by political and social independence is highlighted throughout the book.

All the authors who have contributed to this volume have conducted original research. They have discussed and explained a wide range of subjects that includes both economics and social science aspects.

One of the positive points about this book is the fact that though the writers are of diversified backgrounds all the contributions made focus on the same approach that is Satu Kahkonen and Mancur Olson's view, which cannot disengage social science from economics. The second part of the book is more interesting for students of the developing world for it talks about topics that are relevant and more appropriate for the local market. The problems that a developing economy faces and why it faces these problems are explained quite eloquently. The absence of collective choice and new institutionalism in the Indian economy is being blamed for the economic disparity in India. All six articles focus on the new institutionalism that is absent in the Indian economy. From their evidence provided in the first part of the book about the absence of collective choice, new institutionalism and neo classical political economies' economists have tried to connect these variables collectively or in exclusion to the lack of economic development in specific country experiences.

It is a very readable book with a new, innovative approach to economics.

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Shamyla Chaudry

Book Review

S. Akbar Zaidi, *Transforming Urban Settlements,* The *Orangi Pilot Project's Low-Cost Sanitation Model,* City Press, Karachi, 2000, Price: Pak Rs. 225/-.

This book is the story of the formulation and implementation of the Orangi Pilot Project's Sanitation Model, and it is told with clarity and intelligence. Indeed, in this age of self-seeking and egoism, indifference and callousness, it is heartening to note that at least some amongst us somewhere still show a modicum of concern for the marginalised and less privileged in our societies. It is ample indication of the author's empathy and identification with the human condition in its entirety.

The book in fact is a reduced version of a study by the author submitted to Water Aid, UK, one of the United Kingdom's leading charities. Orangi is a success story essentially, building its low cost sanitation programme in one of the biggest informal settlements in Karachi. An in depth study of the project, its nature, philosophy and methodology is provided by the author followed by a critical appraisal of the NGO sector in Pakistan and why this sector has not been able to replicate the model. The book also dispels certain myths and false conceptions about the Project, propagated in the main by the NGOs and donors. The brunt of the author's criticism of the NGO sector is, to put it succinctly, that NGOs could only play an effective role if they were to 'overcome some of their main weaknesses arising out of their dependence on donors and their organisational culture.'

Ch 2 is based on field visits made by the author to the area and discussions held with members of the community. There are revealing insights included here and the sensitivity of the author is evident. The observations are decidedly not that of a superficial observer, divorced from the reality on the ground, a drawback this methodology can often entail. Zaidi identifies strongly with the people and their problems. Initially, he looks at the impact of OPP at different levels, on health, income levels and social capital. What appears to be a foregone conclusion, the removal of waste water would generally have a positive impact on the health of the residents, but as the author points out owing to other unhealthy practices of the inhabitants it was not possible to quantify this improvement. Improvements in, income were more or less evident, however.

The writer next expostulates on the nature, philosophy and methodology of the model, in essence these being the very reasons for its

success. He emphasises the fact that OPP is by no means a traditional NGO. It is distinct from other mainstream NGOs in that it is not particularly 'concerned with achieving specific targets set by donors or by itself. It believes in dealing first with what the community perceives to be a priority problem before tackling other matters. It is in no way a construction agency, physically undertaking projects itself It is for the residents themselves to take up the task of laying sewer lines, with OPP offering social and technical guidance. The OPP also sees itself as a motivator and believes in mobilising the community. For that matter, the OPP no longer needs to playa motivating role as it did previously, since owing to the demonstration effect, people come forth and seek advice from the OPP.

The author talks about the individual without whom OPP may not ever have been possible at all - Dr. Akhtar Hameed Khan. The organisational culture of the project is in close harmony with the personality of this exceptional individual, states the writer. Dr. Khan's lifestyle was frugal and austere and likewise the very principles according to which the organisation is run. And this despite the fact that Dr. Khan was a much misunderstood personality, according to the author.

Having eulogised the extraordinary success of the OPP model, Zaidi explains at length why it has been problematic to replicate the model elsewhere and cites examples of other instances to do so. The model is difficult to replicate, as the author categorically states at the outset. The terrain, for one needs to have a gradient as in Orangi for in a place with a flatter terrain, pumping of sewage would be required as well. Also, OPP only enters a community which seeks its help and for this conditions are placed, the most stringent of which is that of self reliance and freedom from dependence on donors. This is something the NGO community is far removed from for one.

Zaidi then cites other set ups which have for better or for worse attempted to replicate the model, and he writes at length about the fate of such instances. He concludes that in order to 'replicate' certain principles need to be followed rather than merely imposing the model on each and every setting, a rather simplistic and obvious conclusion to say the least.

The future directions of OPP are then discussed and then the wider impact of OPP in the country. An interesting chapter follows, whereby the author attempts to disclaim the host of criticisms which abound around the reputation of OPP. He talks about their key arguments and the validity of their claims, giving a fair appraisal in the process.

Zaidi concludes his book with what is in essence a repetition of that which has come earlier, and perhaps this is where one of the weaknesses of the book lies. His suggestions at the end in terms of remedial measures are also somewhat lacking. He could have elaborated on them, even though that is easier said than done.

All told, it is apparent that the author is a fairly seasoned writer, this being the fifth of his major works. The book is concise and although at times somewhat repetitive, nowhere does he belabour the point. Rather, the author goes for the jugular. Zaidi seems to be brimming with enthusiasm, something that wears off on the absorbed reader.

Inexpensive in cost and hence affordable by most, perhaps the book deserved better production. It is undoubtedly an eye opener and extremely readable despite what some would balk at as being a 'mundane' and 'remote' issue.

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Nina Gera

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