eISSN
1811-5446

THE LAHORE JOURNAL OF ECONOMICS

Lahore School of Economics

Papers presented at
The Eleventh Annual Conference on
Management of the Pakistan Economy
Pakistan as a Regional Manufacturing Hub-Prospects and Challenges
25th to 26th March, 2015
Lahore School of Economics, Lahore, Pakistan.

Volume 20, SE **September, 2015**

The Lahore Journal of Economics
20: SE (September 2015): pp. i-vii

Editors' Introduction

As the Pakistani economy has stabilized over the last few years, the focus has turned towards restarting economic growth. This is a challenging task because of the structural problems faced by the economy as well as the global economic slowdown. This means that Pakistan's policymakers must move beyond the traditional growth strategy of export led growth and think of ways of expanding the country's manufacturing base. Keeping this in mind, the organizers of the Eleventh Annual Conference on the Management of the Pakistan Economy chose the topic of "Pakistan as a Regional Manufacturing Hub – Prospects and Challenges." The objective of the conference was to provide academics and policy makers with new ideas on growth strategies in the context of a changing global environment.

The conference was held on the 25th and 26th of March, 2015 and looked at both the macroeconomic and the microeconomic issues that have historically hampered the development of Pakistan's manufacturing sector as well as the prospects for future growth in the sector. The Lahore School gathered world-class academics, policy makers, practitioners and members of the business community to discuss these issues and lay the groundwork for a coherent industrial strategy.

The speakers presented on issues related to industrial policy, the strengths and weaknesses of the Pakistani manufacturing sector and the macroeconomic conditions that have helped and hindered industrial growth in Pakistan over the last few decades. The main papers presented are summarized below.

Professor Robert Wade (London School of Economics) began the conference with the keynote address. He offered a sharp critique of the shift in priorities of the major aid agencies from its earlier focus on growth-promoting investments in infrastructure, industrial, and agricultural development in the 1960s and 70s to the softer goals of reducing extreme poverty, governance, primary health care, and education starting in the 1980s. He noted that market liberalization was promoted as the main economic growth strategy in the ensuing decades and he attributed this sea change in the focus of development strategies that occurred in the 1980s to several factors: changing strategic priorities of the West following the end of the Cold War; the rise in awareness in the West regarding social and environmental protection issues; neoliberal economic thinking promoting deregulation and the superiority of market driven forces; and the domination of Western countries over international

organizations including the World Bank. In response, Professor Wade discussed how developing countries have been both pressing for more say in the Bretton Woods institutions as well as bypassing them by borrowing for industrial development from alternate financiers including China's new Asian Infrastructure Investment Bank, the Corporación Andina de Fomento, and the BRICS' Contingent Reserve Arrangement.

Turning the focus on domestic constraints, Shakil Faruqi discussed how financial constraints have stalled manufacturing growth in Pakistan. Dr. Faruqi offered a first-hand account of the history of local development finance institutions (DFIs), often World Bank funded, and how investment incentives in India and East Asia have differed relative to Pakistan. He also discussed how unlike East Asia, and even India, Pakistan lost its domestic DFIs at an early stage because of Western pressure on the World Bank to end these programs in order to take pressure off of faltering industries in the advanced countries. He went on to explain how FDI and technical education also played key roles in the acquisition and assimilation of new technologies in East Asia. Finally Dr. Faruqi described some unsuccessful attempts to resuscitate Pakistan's DFIs and came to the conclusion that despite financial system reforms and privatization, most of Pakistan's financial resources are channeled to the public sector, leaving little credit to the private sector.

In the next paper, Akbar Noman reviewed the history of industrial policy and setbacks from the 1950s to the 1990s and discussed how development finance is key to raising Pakistan's investment rate. He suggested Pakistan's own PICIC or IDBP might be resuscitated, or that alternatively, Brazil's BNDES model, the Andes' Corporación Andina de Fomento or Development Bank of Ethiopia might be followed. Dr. Noman also noted the wide distribution of productivity within sectors in Pakistan, suggesting that technology transfer and implementation of low cost management techniques such as the Japanese concept of "kaizan" or continuous improvement can help to reduce this dispersion and raise sector productivities.

This was followed by an analysis of how policies of economic liberalization in Pakistan have failed to lead to any sustained economic growth. Matthew McCartney explained how the liberalization of Pakistan's economy, encompassing trade and financial reforms, began in the late 1980s on the belief that bad policies, rather than weak governance and institutions, were responsible for stagnant growth. In response, rather than witnessing the expected gains, Pakistan's macroeconomic indicators worsened. Growth rates fell by a third, and trade as a share of GDP inched up only slightly. Dr.

McCartney then argued that Pakistan largely the followed the advice of donors in its economic reforms and maintained a rational exchange rate over an extended period of time but nonetheless was unable to realize the economic gains promised by the Washington Consensus.

Irfan ul Haque returned to the theme of industrial policy and presented a thoughtful history of industrial policy in Pakistan. Dr. Haque began by discussing how Pakistan's industrial policies to support its nascent industries were attacked almost from the beginning. Starting in the 1960s, these activist policies were blamed, without much proof, for most of the problems of Pakistan's manufacturing sectors. While some have proposed that the way forward is through improving supply-side conditions, such as the development of infrastructure, skills, and green technologies, Dr. Haque explained that these measures are insufficient unless other failures are addressed concomitantly, including weak management at the state and firm level, the lack long-term financing for enterprises, and excessive competition that is prematurely driving firms out of business before they have the chance to prove themselves. He also discussed how a successful industrial policy requires strong and committed leadership.

Naved Hamid and Maha Khan continued this discussion by examining the historical evidence to argue that Pakistan is at least on the brink of a premature deindustrialization, if it has not already begun. Evidence from cross-country studies indicate that the share of employment in manufacturing should peak at a minimum of 18 percent of GDP for a country to become non-poor; unfortunately Pakistan has not achieved a level much higher than around 14 percent. Dr. Hamid and Ms. Khan then suggested that balance of payments constraints, energy shortages, and imports from China have likely contributed to the most recent period of industrial stagnation. Their analysis of the sophistication of Pakistan's manufactures showed that there has been little upgrading on average since 1990; improvements in Sindh were matched by declines in Punjab.

In order to see the impacts of expanding the manufacturing sector, Azam Chaudhry and Maryiam Haroon studied the effect of firm entry on employment, education, and the number of hospitals in Punjab. The authors found that these impacts vary based on the size of firm that entered, the length of time that has passed since entry, and whether the firm entering was in an export-oriented sector. Specifically, their results showed that the entry of small firms led to short-term increases in employment; this impact on employment was slightly longer-lived in the case of entry by medium firms. On average, there was a significant decrease in the growth rate of

employment after a large firm entered the market and this impact was greater than that of a small firm. While the entry of export-oriented firms had a significant impact on employment that was sustained over time, this effect was substantially smaller than in the case of other types of firms. The largest positive impact on primary enrollment was correlated with the entry of large firms, but it took almost four years for this impact to materialize. The entry of an export good producer also had a large, positive impact on primary school enrollment after about six years. Finally, the authors found that new firm entry had a significant, if marginal, impact on the number of hospitals and primary schools.

Looking at micro-level examples in the manufacturing sector, Theresa Chaudhry and Mahvish Faran's paper detailed the management, wage practices and organization of production in two of Pakistan's export-oriented sectors, electric fans and ready-made garments. The authors found that these sectors differed in many ways but shared characteristics such as piece-rate wages, family ownership/management, and informal or on-the-job training, which may be holding these sectors back from reaching their full potential.

Providing a regional perspective on the growth in Pakistan's manufacturing sector, Rajah Rasiah and Nazia Nazeer analyzed the stunted progress that Pakistan has made in raising manufacturing's share of GDP and in moving from low- to medium- and high-value added activities; in fact, the share of manufacturing in GDP, at less than 15 percent, was nearly the same in 2013 as in 1965. They contrasted Pakistan's poor performance in manufacturing growth and technical upgrading with that of Malaysia, Thailand, Taiwan, and South Korea. They also noted that limited upgrading that has taken place in Pakistan's most important sectors, textiles and garments, but that Pakistan could make significant progress if it enters sectors upstream (knitting/weaving machinery and dyes, designing) and downstream (branding).

Following on this theme of comparative industrial performance, Khalil Hamdani discussed how developing countries, particularly those in East Asia, have taken advantage of the opportunities afforded by economic globalization through the expansion of transnational corporations (TNCs), explosive growth in FDI, and the internationalization of production, the "fragmentation of production into global value chains". Dr. Hamdani also argued that Pakistan has mainly been a passive participant in the process of globalization (except for the cross-border movement of workers). He concluded by recommending that Pakistan

should aim to become a more active player, seeking FDI to increase its role in global production networks, rather than the current types of FDI flows, which have tended toward market-seeking (producing goods for domestic consumption in Pakistan) and resource extractive industries.

Turning their attention toward the macroeconomic factors leading to slow manufacturing growth, Inayat U. Mangla and Muslehud Din argued that macroeconomic instability must also be considered as a factor in understanding Pakistan's lackluster performance in manufacturing, in particular by depressing private investment. Furthermore the authors suggested that macroeconomic stabilization policies have often failed to produce the desired results owing to a lack of coordination between monetary and fiscal policies. Though they found that recent macroeconomic indicators showed some improvement, they still concluded that fundamental weaknesses remained. In particular, they pointed to the fact that the recent improvement in the current account deficit was driven largely by a high inflow of remittances coupled with financial engineering such as payments from abroad.

Switching again to the micro-side, Imran Ahmad and Karim Alam presented data on the trends in credit to the manufacturing sector in general, and SME manufacturers in particular. While the nominal value of credit to manufacturing has risen since 2006, the authors found that the share of credit to the sector has fallen. In addition, the lion's share, at 60 percent of credit, went to just two sectors, textiles and food & beverages. When looking at credit to just SMEs, the authors found that again the textiles and food & beverage subsectors dominated. They also found that overall credit to SMEs fell and then partially recovered over the period 2009-2015. They concluded by noting that the State Bank of Pakistan had begun to take steps to increase lending to the SME sector, including revising the regulatory framework for lending to SMEs, establishing an e-Credit Information Bureau, and a secure transaction registry.

Hanns Pichler continued on the theme of SMEs and emphasized the critical role of small and medium enterprises (SMEs). He spoke on the experience of SMEs in Europe, where they dominate the industrial landscape, so much so that only 0.2 percent of firms are large. He also spoke of the resilience to volatility of SMEs and their important role in generating jobs, both as employees and as entrepreneurs. Dr. Pichler also discussed how SMEs can also be important sources of economies of scope and how SMEs must survive amidst market forces; in other words, they should not be coddled, but neither should they be overburdened by

regulations. Finally, Dr. Pichler explained that appropriate institutions are needed to support SMEs, including business associations.

A special session focused on the opinions of industry leaders to determine what makes manufacturing firms succeed or fail. First, Mr. Mujeeb Rashid (CEO, Mitchell's Fruit Farms Limited) reviewed the business operations at Mitchell's, focusing on supply chain efficiencies through a Rolling Sales Forecasting System supported by the PDCA Concept. He explained that together with these efforts, training and development of staff was undertaken to improve skills and attitudes. The resulting internally generated value enabled the company to make new investments that strengthened both backward and forward linkages to growers and consumers.

This was followed by a presentation by Dr. Shahzad Khan (Director Marketing and Sales at Getz Pharma Pvt Ltd), who explained how Getz Pharma was the first and only manufacturing company in Pakistan and amongst few in the region to be certified by the Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-operation Scheme (PIC/S). He also described how Getz Pharma broke ground in 2015 on the largest pharmaceutical plant to be constructed in South Asia, which was being designed and being built to attain the WHO, U.S. FDA and EU certifications.

Finally, Mr. Sajid Minhas (CEO, Delta Garments) illustrated the importance of the garment sector in the context of economic growth. He began by explaining how the sector has the potential to be the engine of Pakistani textile export growth, and went on to explain how it is the largest source of creating low cost employment. Mr. Minhas also described how Pakistan's garments and made-up exports have grown over 20 percent in the last year and explained how duty free access to the EU through the GSP plus scheme had been a major cause for this increase. Mr. Minhas then went on to explain that the main weaknesses in the sector – at both the firm level and the sector level – was the lack of product diversification in the sector across product lines. Mr. Minhas concluded by talking about the need for a friendly import/export policy from the government which facilitates all, i.e. large, medium and small units, as well as new entrants.

Though the conference topic was complex, some important themes emerged from the presentations and discussions: First, there is a growing recognition amongst academics and the business community that a coherent industrial policy for Pakistan is required and this must be

urgently undertaken by the government. Second, there is a glaring vacuum when it comes to any viable financing mechanisms for industries, which needs to be immediately addressed. On the urging of the Western financial institutions, all the development finance institutions in Pakistan were dissolved and the present financial sector is unwilling and unable to fill this gap. Third, policy makers and academics must interact with industries and firms at a micro-level to begin understanding the key constraints to growth they face; it is no longer sufficient to just blame energy shortages and lack of government policy for faltering manufacturing sector growth. Finally, the only way the manufacturing sector can practically grow is if it begins to focus on technology upgradation, innovation and productivity improvement. This has to be done by industry, academia, and government joining hands and incorporating these priorities into its industrial policy.

The editors of the Lahore Journal of Economics hope, as do all the contributors, that policy makers in Pakistan pay close attention to many of the issues and lessons raised in these articles since these papers and proceedings are aimed at helping them develop long-term policies that encourage economic growth and development in Pakistan.

The Lahore Journal of Economics
20 : SE (September 2015): pp. 1–12

Agenda Change in Western Development Organizations: From Hard Production to Soft, Timeless, Placeless Policy

Robert H. Wade*

Abstract

Professor Robert Wade, Professor of Political Economy and Development at the London School of Economics, delivered the keynote address for the 11th Annual Conference on the Management of the Pakistan Economy.

This is a talk about the dramatic change in the understanding of what constitutes "development" that occurred in the West and in much of the developing world after the mid 1980s. Before that time it was widely understood that development meant rising overall "prosperity" and that heavy investment in infrastructure and in industry were key drivers. After the mid 1980s the content of development came to be "extreme poverty reduction", "humanitarian assistance", "primary school education", "primary health care", "anti-corruption".

Why this change? I argue that it was due to several factors: (1) the end of the Cold War, and the resulting change in the geopolitical strategy of Western states led by the US; (2) the increasing strength of "post-materialist" values in developed countries and their translation into the content of Western development thinking (eg World Bank, USAID, DfID); (3) business interests in the West; and (4) continued Western control of inter-state organizations that are meant to be organizations for the world (eg World Bank). There are now small signs of change in favor of investment in production and infrastructure, thanks partly to the recent emergence of inter-state "by- pass" organizations not controlled by Western states (such as the New Development Bank, the Asia Infrastructure Investment Bank).

Keywords: Development, production, western countries, policy.

JEL classification: O29.

1. Introduction

In 1972, the president of the World Bank, Robert McNamara, visited Somalia – the first visit of a World Bank president to that country. He pledged a large loan to build a port. This port continues as Somalia's main

* Professor of Political Economy and Development, London School of Economics.

port, but it badly needs upgrading. In 2014, Jim Kim was the second World Bank president to visit Somalia. The high point of his visit was an announcement that the Bank had helped develop a mobile phone app that would allow the government to track the number of people in poverty in Somalia, quarter by quarter. No announcement of a loan for upgrading the port or for any of the other infrastructure Somalia desperately needs. Median electricity consumption in Ethiopia (next door to Somalia) is 1/255 that of the median American; median Somali electricity consumption is lower than the Ethiopian (Pritchett, 2015).

This contrast between the World Bank in action in 1972 and in 2014 captures the dramatic change in the "zeitgeist" of "foreign aid" from Western states that occurred in the 1980s: away from infrastructure, industry, and even agriculture, towards "poverty," "rural," "social," "health," "governance," and "market liberalization." Inside the World Bank during the 1980s, staff with expertise in infrastructure and industry were invited either to find employment elsewhere or to rebrand themselves as experts in "social" or "environment" or other favored sectors.

Fast forward to the Millennium Development Goals. These were formulated after 2000 to apply to the category of developing countries, with rich country aid agencies and Western multilateral development organizations having the main input. It is striking how "low-bar" or "least common denominator" they are. Goal 1 calls for reductions in extreme poverty and hunger (where extreme poverty is measured at an individual income of less than US$1.25 per day); other goals call for "completing primary school" and "ensuring environmental sustainability." There is no mention of economic growth, employment, prosperity, productivity, secondary education, university, or research.

In 2005, I visited Addis Ababa with Joe Stiglitz and Akbar Noman (who, a decade before, had been the World Bank country economist for Ethiopia). We met with representatives of some 20 aid agencies and invited each to describe the priorities of their agency. Two points struck us. First, their priorities were almost identical. Second, the priorities did not include infrastructure or agriculture or industry. The partial exception was the Japanese representative, who listed "rural roads" among his agency's priorities. None of the others got even that far toward infrastructure and production.

The recent mission statement of USAID declares: "We partner to end extreme poverty and to promote resilient, democratic societies while

advancing our own security and prosperity" [emphasis added]. Note that, here, US aid targets enhancing the prosperity of the US but not, apparently, that of the recipient. For the recipient, the target is not national prosperity or even poverty, but extreme poverty. The international extreme poverty line excludes some 5 billion people who live above the extreme poverty line, but below the OECD's poverty line (Pritchett, 2015).

In 2008, Justin Yifu Lin was appointed chief economist and senior vice-president at the World Bank. A Chinese citizen, he was the first chief economist from outside the G7 (almost all have been American or British). Lin championed a modest form of "industrial policy" contrary to the long-prevailing ethos in the Bank, which dismissed industrial policy – whatever its theoretical rationales derived from "market failure theory" – as an excuse for corruption, rent seeking, and clientelism in developing countries. Lin's industrial policy was so modest that, as he kept stressing, it should operate only within the economy's existing comparative advantage and not push activities beyond these limits (Lin, 2012). Yet Lin himself admits that less than 10 percent of Bank economists were convinced during his tenure (which ended in 2012). One of the Bank's senior economists told me: "For every Korea, there are a hundred failures. Who would you put your money on?"

But the change in the Western aid agenda goes well beyond the change in sectoral focus, to a whole new language and grammar (Moretti & Pestre, 2015). Here is the World Bank's annual report for 1969:

> … the Bank Group continues to encourage [developing countries' transformation of agriculture] through its lending for general agricultural development, which totaled $72.2 million in the 1969 financial year. Diversification into new crops which provide a source of cash income, or improved production of existing ones, was encouraged by loans or credits to support traditional coffee production in Burundi at its normal level, palm oil development in Cameroon, Dahomey, the Ivory Coast and Papua, afforestation in Zambia and mechanization of sorghum, sesame and cotton farming in the Sudan.

This is plain, factual prose, which gives a clear idea of where on the spatial and time dimensions (past, current, future) the various statements relate to.

By contrast, the 2008 annual report is replete with passages such as:

Leveling the playing field on global issues

> Countries in the region are emerging as key players on issues of global concern, and the Bank's role has been to support their efforts by partnering through innovative platforms for an enlarged dialogue and action on the ground as well as by supporting South–South cooperation.

What does this mean? It is much more detached from everyday language than the previous passage. It begins with a classic example of a principle – "leveling the playing field on global issues" – which no one could object to because no one can say what it means. Such abstract and opaque prose renders it difficult for the reader (and for those wishing to hold the Bank accountable) to identify what the Bank was doing, is doing, and will do. It is not possible to assess the organization's efforts "to support their efforts by partnership through innovative platforms for an enlarged dialogue" because the words have no clear empirical referents. And it is difficult to identify actors in the abstraction called "South–South cooperation."

One recalls George Orwell's remark that political speech and writing commonly contain "a mass of Latin words [which] falls upon the facts like soft snow, blurring the outline and covering up all the details" (Orwell, 1968, p. 166).

The difference between the Bank's 1969 passage and that from 2008 applies to all the annual reports after 1990 compared to those published between 1950 and the late 1970s/early 1980s. Indeed, the frequency distribution of words in the Bank's annual reports from 1948 to the present shows that, after about 1990, words close to infrastructure, agriculture, and industry fell away, and words of three other semantic clusters gained sharply (Moretti & Pestre, 2015). The first cluster is "finance," containing words such as "portfolio," "assets," "derivative," "accrual," "guarantees," "accounting," "hedging," "default," and "swaps." The second is "management" – the second most frequently used noun in annual reports after 1990, after "loan" and ahead of "investment." Other frequently used words in the management cluster include "strategies," "opportunities," "challenges," "critical situations," and for verbs, "focusing," "strengthening," "monitor," "control," and "audit."

"Governance" is the third ascendant cluster. The word appeared for the first time, hidden away in a single sentence, in the 1990 annual report. Since then, the frequency of words in the governance cluster has taken off:

words such as "dialogue," "stakeholders," "collaboration," and "partnerships." "Governance" in the Bank's annual reports is commonly used with the present continuous verb tense, as in "improving," "strengthening," "supporting," "including," and "promoting." The present continuous, being unanchored in time, conveys the meaning of "tireless ongoing striving for the good." The word itself and others in its cluster are always used in a one-dimensional, positive context, as though the more of their qualities in a country, the better, whereas "government" may be good or bad, and more likely bad. Indian Prime Minister Modi's motto is "less government and more governance" – whatever that means.

2. How Can We Explain the Changes in Western Development Agendas?

How can we explain the dramatic change in thinking about development among Western aid agencies and Western-controlled international organizations? The change has important real-world effects because, in one way or another, it has swung national development agendas in the same direction: away from infrastructure and industrialization.

I suggest several elements of an answer:

- The end of the Cold War and the change in the West's geopolitical strategy
- Aid agencies' greater responsiveness, post-Cold War, to the priorities of Western publics for their own countries (as distinct from, for developing countries)
- Stronger Western NGO campaign pressure against aid agencies that sponsor infrastructural or industrial projects with harmful social and environmental consequences
- The ascendancy of neoliberalism, with its bedrock belief that "the free market works best, except in limited cases of market failure, which include the reduction of extreme poverty"
- Western control of influential international development organizations, above all, the World Bank.

During the heyday of the Cold War, Western states used aid as a weapon to keep developing countries out of the Soviet and Chinese orbits – and more than that, in countries abutting the two blocs, to create flourishing capitalist economies in order to demonstrate that capitalism works better than communism. So, in East Asia, close to Communist China, the US government poured aid into Japan, the Republic of Korea, and Taiwan, and

the World Bank followed. These agencies even sponsored expropriative land reforms and invested heavily in infrastructure, agriculture, industry, and training. Strikingly, neither the Western agencies nor the national governments deployed much by way of "poverty" programs in East Asia. They concentrated on generating fast growth and transforming production – and the number of poor people fell dramatically (Wade, 1990). During this period, the World Bank employed many engineers, technologists, and industrial policy experts.

As the West emerged the victor of the Cold War, the geopolitical imperative of keeping developing countries out of the Soviet or Chinese orbits fell away. At the same time, euphoria took hold about the blessings of Western-led globalization for the world at large. Globalization and free markets were spreading democratic pluralism, individualism, personal freedom, and national prosperity. Asia was booming. Europe was coming together in the European Union. Middle East conflicts were subsiding. The more that countries and their constituent entities (firms, households, and governments) were integrated with the world market, with no segmentation at the national border, the better for everyone; important substitution policies and capital controls should be avoided, because they lowered the efficiency of resource use.

The main problem that could not be left to "the market" and the resources of individual developing countries was persisting extreme poverty. That is what aid should be targeted at, said the consensus; that, and help to liberalize markets and integrate into the Western-dominated world economy. And so, as noted, the World Bank's engineers and industrial policy specialists either departed or rebranded.

The fading geopolitical imperatives allowed aid priorities to be brought into closer alignment with the Western public's priorities "for my nation" (as distinct from responding to developing country priorities). The World Values Survey by Ronald Inglehart and his associates reveals (in surveys conducted around the world during 1995–2014) that most Western respondents rank "economic growth" below "more say on how things are done" and "beautiful cities and countryside" as goals for their country. The higher a country's GDP per capita, the fewer the number of respondents who put economic growth, income, jobs, or production among the top three priorities for their country – and vice versa.

Afrobarometer surveys ask African respondents, "In your opinion, what are the most important problems facing this country that the

government should address?" The surveyors group respondents' top three priorities into eight categories. Problems concerning economic growth, jobs, incomes, and infrastructure fall within the top three priorities of between two thirds and three quarters of African respondents (in terms of country averages). By contrast, less than 10 percent of respondents put health and education in the top three priorities, and only 1 percent put "governance" or related terms in the top three. The contrast between these priorities and those of Western aid agencies is striking (Pritchett, 2015).

In short, as the Cold War wound down, Western aid agencies began to project into developing countries the priorities of their own Western publics "for themselves," such as health, education, and governance (as distinct from the priorities of developing country governments and publics). Also, Western governments, firms, and publics became alarmed at the growth of industry in developing countries (whose products were knocking out industries and employment at home) and opposed the use of "taxpayers' money" to boost the competition even more.

Western NGOs mobilized campaigns against infrastructure and industrial projects sponsored by the World Bank or aid agencies – projects such as the Bank's Polonoroeste road-paving and agricultural settlement project in the Brazilian Amazon in the 1980s, and the multi-dam-and-irrigation Narmada project in western India. The Bank's response was to erect a series of environmental and social safeguard hurdles to be jumped by a wide range of infrastructure and industrial projects. Directly and indirectly, this led the Bank to scale back projects in these sectors and opt for "safe" projects in health, education, governance and the like instead. The latter were much more likely to advance the project officer's career, because preparation and Executive Board approval were much more likely to be plain sailing compared to a project in infrastructure or production.

In terms of development theory, the striking change of the 1980s and 1990s was the eclipse of the subdiscipline of development economics and the ascendancy of the idea of "mono-economics" – one unified body of (neoclassical) economic theory applicable to all countries, almost as universal as the laws of engineering. The argument for doing away with development economics was crystallized by Lal (1983) in *The Poverty of 'Development Economics'*, published at about the same time as he became chief lieutenant of the World Bank's chief economist Anne Kreuger. They engineered a "cleaning of the stables" of the Bank's development economists, who were replaced by economists who believed, more reliably, in the virtues of the free market. At much the same time came a wave of

literature arguing that the surging East Asian economies were succeeding because, above all, they had liberalized their markets and integrated more closely with the world economy (Wade, 1990). All this helped legitimize the change in zeitgeist about development, later crystallized by John Williamson in 1990 as "the Washington Consensus," meaning the consensus prevailing in Washington – and generally in the US and the West – about the single right recipe for developing countries. This consensus centered on letting and making the market work, with governments focusing on that task as their central objective (along with reducing the incidence of extreme poverty).

3. The World Bank

All this may be accepted, but it leaves a puzzle. The most important influence on "development thinking" on a world scale is the World Bank, and a large majority of the Bank's members are developing countries. So why not more pushback from developing countries to the World Bank's agenda?

The short answer is that the Bank is governed largely by Western countries (or the West plus Japan). The much celebrated "voice reform" of 2010, which the Bank claimed to bring developing countries "almost to parity" (that is, almost to 50 percent of the votes) in fact left high-income countries (which do not borrow from the Bank) with 62 percent of the votes, leaving 38 percent for the middle- and low-income countries (Vestergaard & Wade, 2012, 2015; Wade, 2013a, 2013b).

In response, developing countries are following a two-track strategy. The first, the "voice" strategy, is to keep pressing for a larger share of votes and senior positions, including an end to the American monopoly of the presidency and an end to the American veto (the US is the only country with a veto over super-majority decisions). The second is to facilitate "exit" – to create "bypass" organizations whose functions mimic those of the Bretton Woods organizations, but in whose governance developing countries have the predominant say. Cases in point are the Corporación Andina de Fomento, which in 2012 lent more for infrastructure in Latin America than the World Bank and the Inter-American Development Bank combined; the Asian Infrastructure Investment Bank, led by China, initiated in 2014; and the BRICS' Contingent Reserve Arrangement, also initiated in 2014.

4. Conclusion

I have argued that Western aid and development advice used to emphasize infrastructure and production. However, since the 1980s, partly

propelled by the opportunity opened up with the ending of the Cold War, it has come to reflect a Western "humanitarian impulse" together with Western values about the good life (for Westerners); these do not sanction using "our" money to build "their prosperity" (but do approve of using our aid money to boost our own prosperity, as in the USAID mission statement quoted earlier). So governments, NGOs, and others at the receiving end of Western assistance should be appropriately cautious in accepting Western assurances that Western prescriptions for development really do reflect "mutual benefit" rather than partly "conflicting interests."

In the course of describing the nature of the change in Western developing thinking dating from the 1980s, I have examined the change in development vocabulary and grammar. Recall the passages quoted earlier from the 1969 and 2008 annual reports of the World Bank. Here is another example from the 2007 annual report:

> IDA [international development assistance] *has been moving* toward *supporting* these strategies through program lending.

Notice that IDA has apparently not been *doing*, it "has been *moving*," and not even moving toward "doing" but only toward "*supporting*." Again, from 2008:

> The Bank significantly *accelerated* its *efforts* to help client countries cope with climate change while *respecting* another aspect of its core mission: *promoting* economic development and poverty reduction by helping provide modern energy to *growing* economies [all emphases added].

The Bank has been accelerating, but accelerating only its *efforts* and only its efforts to *help*. Similarly, the headlines of the annual reports are full of gerunds or the present continuous verb tense: "providing timely analysis," "sharing knowledge," "improving governance," and "leveling the playing field on global issues" (Moretti & Pestre, 2015).

This invocation of an infinitely expanding present where policies are always in progress, but only in progress, has several important effects. First, it supports the subliminal message of almost all World Bank reports: "progress has been made, but challenges remain." The Bank employs squadrons of editors to hardwire in this core message.

Second, it renders the whole process of accountability obscure, for accountability must be assessed in relation to what has been *done*. Like many other organizations, the Bank is keen on its own accountability in theory, but less so in practice.

Third, the timeless and placeless language helps reinforce the tendency to think of development theory and policy as "free" of time and place, and free of the agents producing the policy paradigm and the specific policies – and, therefore, also *free of contending ideas*. The language itself contributes to acceptance of the idea that there is one unified economics, the laws of which are valid everywhere; at the level of policy, this implies that "there is no alternative."

A hegemonic bloc of states, like the West at present, has a built-in imperative to believe, and induce the periphery to believe, that policies and institutions that benefit the hegemon also benefit the periphery; that the world economy is an open system, not a constraining hierarchy; that the wise path of policies and institutions chosen by the hegemon are equally accessible to wise governments in the periphery; that the deep integration of all countries into the world economy – so that states have no more power to affect transactions, flows, and ownership transfers across their borders than do the states of the US – produces "mutual benefit." Hence, there is rightly no alternative.

This, in turn, helps explain the otherwise puzzling resilience of not just neoclassical but, more extreme, neoliberal and (German) ordoliberal beliefs after the North Atlantic Crash of 2008, in contrast to the rethinking that occurred after the two earlier twentieth-century crises in 1929 and the late 1970s. The beliefs are conceptualized in such timeless and placeless language as to be well protected from contradictory evidence or incompatible paradigms. At the same time, they sprinkle the equivalent of holy water on neoliberal political economy arrangements, which sluice a substantial proportion of national income into the hands of the top 1 percent: 23 percent in the past few years in the US, 29 percent in Brazil, about one third in that paragon of the Washington Consensus, Chile. Elites in developing countries, including members committed to national development (including to industrialization) may well be uneasy about challenging neoliberal beliefs and their Washington Consensus expression, which deliver to them such a commanding position in their own societies.

What to do? Wisdom starts by recognizing just how difficult, how uncommon, is sustained economic growth. In the past two centuries, the

number of non-Western countries that have become "developed" is fewer than ten, most of which have small populations. The second point is that just about all of them (Hong Kong is a partial exception) had governments that implemented a vigorous industrial policy, complete with *mediated* integration between nurtured sectors and the international market so that they were subject to international competitive pressure, but in a buffered way (Wade, 1990).

The third point is that, today, industrialization – and the growth of a diversified production structure – will almost certainly have to be at the center of a development process capable of achieving developed country status. Kaldor's "growth laws" – that the rate of growth of productivity in manufacturing *and in nonmanufacturing* are a function of the rate of growth of manufacturing output – are, broadly, empirically confirmed. The fourth point is that "government intervention" to impart directional thrust to industrialization can certainly protect gross inefficiencies and undynamic sectors (think of the highly protected Indian car industry until the liberalization of the early 1990s), but if the promotion instruments are linked to performance against international benchmarks, industrial policy can be effective in building competitive industrial competences – even in the face of Chinese competition.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 13–30

The Role of DFIs in Industrial Growth and Transformation: Why the East Asian Countries Succeeded and Pakistan Did Not

Shakil Faruqi[*]

Abstract

In this paper we explore how development finance institutions (DFIs) helped to promote industrial growth with active role of public sector in emerging market economies – Korea, China, India, Malaysia, Brazil, Mexico, Turkey. The DFIs provided long-term credit financing which led to structural transformation of their economies. These countries have succeeded in spectacular fashion at this transformation over the past four decades but Pakistan did not; why?

There has been an endless debate concerning the role of the public sector vis-à-vis the private sector in promoting economic growth and it continues in the present. I begin by asserting that historically public sector has been in the forefront in starting and sustaining economic growth. This not a leap of faith, rather this has been the experience of most emerging economies. They have gone through reforms, liberalization and structural adjustment, ushering in market-based policy regime and opening up foreign trade and capital flows.

Within this framework, the role of DFIs has been exemplary, an assessment I reach based on published researched evidence but from field experience in the East Asian economies during 1980s, where newly established industries, in part supported by World Bank (WB) funded DFI lending, nurtured industrial transformation. When the industries of advanced countries began leaving in droves, pressure mounted to end industrial financing.

It is a fascinating saga. We need to discover why Pakistan did not succeed in achieving the same industrial transformation the occurred in emerging economies. This failure occurred in spite of similar types of DFI lending over a long period and an almost manic devotion of government to the role of public sector. Reforms and privatization is still going on; but industrial transformation remains as elusive as ever.

Keywords: Industrial growth, development finance institutions, economic development, Pakistan.

JEL classification: O10.

[*] Professor, Faculty of Business Administration, Lahore School of Economics

1. Introduction

Development finance institutions (DFIs) have played a salutary role in economic development – mainly through industrialization in the early stages of growth – in most developing countries, including Pakistan. These were state-owned and funded institutions, many of which were established with the help of the World Bank, which extended long-term foreign currency loans or standby credit lines with a government guarantee. The DFIs, in turn, began on-lending these funds on a retail basis mostly to state enterprises as forex loans to set up new industrial units and "jumpstart development by the bootstraps" – an expression much in vogue then.

The DFIs' main function was to provide industrial development credit finance and some agricultural finance for farm machinery, fertilizers and chemicals. This credit financing was designed for project-based investment carried out under carefully set guidelines to ensure the completion of the planned industrial units, initially in the public sector and eventually in the private sector. The latter grew vigorously during the 1970s and after, through into the 1990s. The long-term credit financing extended by the DFIs was used to cover the forex costs of plant machinery and equipment in public sector industrial units. The on-lending followed an elaborate protocol that specified rules and regulations for the use of borrowed funds, with strict oversight by the DFIs and the World Bank on the viability of the industrial projects being financed.

This financing mechanism served very well because it maintained its fidelity. The DFIs performed well and were instrumental in jumpstarting Pakistan's fledgling industrial sector. Thus, two systems existed in parallel: (i) the largely private commercial banking system, which expanded considerably as new banks (such as UBL) opened up; and (ii) the newly established or reorganized DFI system. The perception that banking was merely petty coin tending (*banyagiri*) – a derisive term for the centuries-old mercantilist tradition in the Indian Subcontinent – began to shift as DFIs fostered the growth of new businesses, industries, and mercantile traditions, and helped a new class of entrepreneurs evolve. In the start-up phase, this was the preferred mechanism for jumpstarting industrial development in the public sector. Later, as the nascent private sector emerged, the DFIs began lending to private industrial units sponsored by the public sector. The on-lending was often subsidized to enable the establishment of new units and operations.

The government's elaborate foreign trade and investment policy and incentive regime was designed to protect and nurture new industries, mostly through import substitution. All this came to be accepted as infant industry development supported by the DFIs to meet the needs of targeted industries or sectors. In parallel, the government invested heavily in supporting infrastructure to enable the start-up of new industries. This included building industrial sites and services, and was made possible through generous foreign assistance from bilateral and multilateral institutions. However, what remained lacking – barring among the small Muslim business community that had migrated from India in 1947 – were general pro-business attitudes and entrepreneurship.

2. Early Industrialization in Pakistan

This section provides an overview of the role of DFIs in Pakistan's initial stages of industrialization from the 1950s to the 1970s.

2.1. DFIs and Early Industrialization

From the mid-1950s through the 1970s, the role of DFIs and support for public sector industrialization were seen as key to the country's development. The government focused on establishing basic consumer good industries, textiles, and cement, and on mechanizing agriculture and initiating basic agro-industries (all geared toward import substitution). Pakistan's five-year plans and documents published by research groups such as the Harvard Advisory Group indicate that the development of export industries was not on the horizon, nor was much attention paid to comparative costs and competitiveness.

In line with this strategy, an import substitution-oriented policy and incentive regime evolved, supplemented by controls, approvals, licensing, and a tightly controlled foreign trade regime. Fixed exchange rates and an overvalued domestic currency gave import substitution a significant advantage over export-led industries. Initially, this strategy succeeded. From the mid-1950s through the mid-1960s, a large number of industries were set up in Pakistan, including textiles, sugar, cement, fertilizer, and petrochemicals. Some private banks and insurance companies were also established. In the wake of this success, Pakistan was touted as a successful developing country and a role model.

This led to the phenomenal growth of reputable "business houses" such as the Adamjees, Saigols, Ispahanis, and Dawoods, among

others, most of which were active in West Pakistan because the government had not demarcated group-linked ownership and the resulting wealth concentration. These houses established industrial and business units in East Pakistan, but not on the same scale as in West Pakistan. The DFIs were willing to lend to newly minted industrial and business houses because their business model was characterized by transparency, accredited accountability, proven creditworthiness, profitability, sound management and solid performance all around.

The feverish pace of group-linked private investment and the rapid establishment of new industries, businesses, banks, and insurance companies reached unprecedented levels. This business model operated in sync with the much-heralded strategy of economic growth Pakistan had adopted. Their success, however, led to criticism of runaway accumulation and large concentrations of wealth among the 22 largest mercantile families. Following the war of 1965, a combination of factors – political upheaval, the growing disparities between East and West Pakistan, the elections of 1970, and West Pakistan's refusal to accept the legitimacy of the popular verdict – led to a civil war, resulting in the truncation of Pakistan.

2.2. Truncation and Nationalization in the 1970s

After 1971, the DFIs lost nearly all their assets in former East Pakistan, while the client companies that survived in West Pakistan suffered major losses. Much of their asset base simply evaporated in the chaos. Additionally, the new Government of Pakistan embarked on a nationalization program in the name of socialism, wiping out private corporate businesses, industries and commercial units, and sparing only small retail traders, artisans and small machine repair workshops. The Mao cap in vogue in those days was meant as a symbol of Chinese-style socialism, but the ruling party's intelligentsia prescribed a Fabian variety of socialism. The majority were at a loss to understand what they intended and were concerned with guarding their own interests.

All key industries, businesses, and financial institutions were nationalized, including the assets of the group that became known as the "22 families." The financial structure that had sustained commerce was largely dismembered and much of the banking system became a vehicle of resource transfer from the public to the state. The government ended up playing multiple roles – industry owner, financier, lender, and borrower – managed by senior bureaucrats without any experience of

running a business. The state-owned DFIs, however, were not closed down. They retained their role as credit providers, but ended up financing state-owned enterprises with disastrous consequences.

India followed a similar path of nationalization, but at a less frenzied pace. Its government gave the private sector space to continue operating and helped as far as it could. India nationalized its banking system at the same time as Pakistan (an uncanny coincidence), but refrained from taking over the financial system and did not touch the business houses, the *seths* and conglomerates, or mercantile houses such as the Tatas and the Birlas.

Instead, India continued to nurture businesses, both large and small, and pursued import substitution industries in the private sector behind an elaborate protective wall. It did not succumb to pressure to open up its markets en masse, nor did it allow foreign ownership of industrial and commercial units, although it did encourage foreign capital inflows on its own terms. The "license raj" was heavy-handed, no doubt: growth rates were anemic, derisively called the "Hindu" rate of growth, but the drive for industrialization was broadened and sustained. India's DFIs continued functioning and did not suffer catastrophic losses in industrial or SME financing. The foundations of industrial transformation continued to gain depth and strength, which subsequently paid rich dividends in the 1990s and beyond to propel the Indian economy towards the spectacular growth it has witnessed in the last couple of decades.

3. The East Asian Countries

Having examined the early role of DFIs in Pakistan, this section turns to the strategies adopted by many East Asian countries.

3.1. The Early Years

Korea, Taiwan and Malaysia, followed by Thailand, Indonesia and the Philippines, pursued a similar trajectory of state-sponsored and protected industrialization in the early stages of development, financed by DFIs (most of which were funded by the World Bank, barring Taiwan). China joined later in the early 1980s. However, the industrial growth model these countries adopted was very different from that of Pakistan. From the start, it was outward-oriented, focusing on export-led growth and thus on cost-efficiency and competitiveness overseas, following the lead of Japan and, subsequently, Korea and Taiwan. Arguably, Korea and Taiwan

are special cases of preferred sponsorship by the US, while Hong Kong and Singapore are city-states and so forth. Nonetheless, many East Asian countries were able to emulate their success.

These countries promoted their industry under a foreign trade regime with a sophisticated protective umbrella so as not to invite outright retaliation from advanced countries. The key difference was that their governments did not become involved in owning and running industrial enterprises as they did in Pakistan in the 1970s. The East Asian bloc did not repudiate local entrepreneurship; instead, these countries rallied to provide local business full support under investment packages, including state-guaranteed foreign credit financing, investment incentives, and access to facilities. They also competed with each other to furnish incentives with a view to attracting foreign investment.

Simultaneously, the East Asian countries invested heavily in technical education to nurture the growth of a well-trained, disciplined local labor force. This was another key difference vis-à-vis Pakistan, the impact of which emerged later through the acquisition of new technology and licensed patents from Japanese companies in the initial rounds. Subsequently, European and US companies launched their own operations in East Asia such that the consumer goods produced were exported to their host countries. By the late 1970s, this mode of industrialization had succeeded, enabling their industrial 'infants' to grow up. China joined this club later in the early 1980s.

As these new industries gained a foothold, the East Asian governments began to shed their protective curtain. They charted out new foreign trade regimes, provided various incentives for export, and established export-processing zones (EPZs), often with DFI funding backed by World Bank credit. The EPZs were cordoned off from the local economy to avoid customs duties with very low excise taxes for direct exports. Initially, they comprised assembly line operations established as subsidiaries of leading brands based in Japan, the US, and Europe.

This was the beginning of the relocation of what later came to be known as "footloose" industries, whereby advanced countries were keen to identify those willing to offer lucrative incentive packages to foreign direct investment (FDI). I supervised a number of studies on the investment incentives of Thailand and Malaysia in the early 1980s. At the time, the East Asian DFIs were at the center of the industrial transformation I observed at close quarters in 1980–86. Once the assembly

line operations became successful in export markets, they spawned supply chain industries (mostly SME units) based on local manufacturing content. By the early 1980s, this transformation had taken root in emerging market economies, but not in Pakistan.

Prior to China's entry on the scene, once the infant industries of East Asia had matured, they began to export light manufactures such as textiles and garments, household consumer goods, light hand-tools and electronic goods to the US and Western Europe at substantially lower costs and without compromising on the quality of exports. Earlier, Japanese-manufactured exports of high-end electronic goods such as TV and VCR sets had wiped out RCA and Motorola TVs and VCRs in the US and Phillips in Europe. Subsequently, the same Japanese products were being manufactured in East Asian countries at lower cost and exported under the same brand name at even lower prices. This was the beginning; the avalanche of "cheap exports" was to come later from the East Asian countries, in an ironic twist replacing "made-in-Japan" exports.

3.2. Enter China

In 1981, when China opened up and joined international financial institutions (IFIs) such as the World Bank and International Monetary Fund (IMF), this enabled it to obtain foreign currency credit to modernize its economy and industrial base. The first loan, a line of long-term credit from the World Bank, was made to the China Investment Bank (CIB), which had been established with the World Bank's help. Within a year, the CIB had availed three loans and continued to borrow heavily for the industrial sector. Meanwhile, China set up other DFIs to finance infrastructure managed by various state-owned enterprises. Client companies followed a transparent business model; their project performance was prompt and the on-lending of Chinese DFIs to mostly state-owned enterprises was a resounding success. Although privately owned businesses had emerged, private industrial units had not.

I saw these disbursements at close quarters, often signing for disbursement requests in an acting capacity every day, which comprised a stream of payments from various World Bank lines of credit extended to the East Asian DFIs. Almost all such disbursements were for industrial machinery being imported from advanced countries. In the early 1980s, this type of industrial financing laid the foundation for modern Chinese industry. Most of it was for import substitution; exports came later when

the footloose industries of advanced countries began to establish manufacturing units with a heavy inflow of FDI.

The transformation of Chinese industry had begun in earnest, initially with industrial finance channeled through its DFIs, but industrial financing alone could not have achieved this transformation. The key ingredients were the entrepreneurship of the Chinese diaspora and the technological transfer that followed in the footsteps of Singapore and Taiwan. China invested heavily in technical education and training, and succeeded – reminiscent of Japan's achievement in acquiring and internalizing technology in the years before the Second World War.

The spectacular transformation of China's industrial sector over the last three decades was unprecedented. The frontline manufacturing of high-end consumer brands destined for European and US markets was taken over by industries established by these corporations in China. Moreover, sophisticated high-tech IT equipment and machine tools were licensed to manufacturing units relocated to China for assembly operations and subsequently for production and export back to the US and Europe.

3.3. Foreign Direct Investment

A key element of this transformation was the FDI being channeled to the East Asian countries, including China. These inflows began slowly in the mid-1970s and picked up pace during the 1980s as East Asia opened up its capital accounts. Initially, the liberalization was intended for capital inflows with guaranteed repatriation, while strictly controlling outflows except as a selective quid pro quo, item by item, for the industrial units receiving FDI. Unlike Pakistan's case, which involved a free-for-all in reverse sequence during its reforms in the early 1990s, FDI inflows to East Asia were pegged to the establishment of new plants and industries aimed at exporting back to the countries of FDI origin rather than domestic markets.

More importantly, FDI inflows financed new industries bundled together with the transfer of new technology embedded in assembly lines and production units. This required training the local labor force to operate and maintain the new plants – a linkage that extended beyond the financial side of capital inflows. Thus, FDI was not merely a wave of financial entries in the capital account of the balance of payments. Instead, it was a process that helped transform the host economies into modern industrial states.

4. DFIs in Pakistan: The Pre-Reform Years

While the East Asian economies surged ahead, their DFIs playing a central role, Pakistan's DFIs (or what was left of them after 1971) receded into the background, coping with the losses they had incurred as a result of financing loss-making public sector enterprises (PSEs). Gone was the dynamism of private entrepreneurship among import substitution-type industries, in which poor management and overstaffing associated with political patronage and powerful labor unions had led to large losses. The government, as owner, was obliged not only to subsidize their operations, but also to replenish their equity base. The burden of a large fiscal deficit left the state with no option but to close down such enterprises or continue financial support.

Periodically, the government would replenish the equity of defunct PSEs as best as it could, sustaining their loan write-offs through special budget dispensations. The PSEs managed to survive as long as they could on government support (which they garnered through political patronage) or lingered on during the tumultuous days of nationalization until reforms, structural adjustment, and privatization were introduced in the early 1990s.

By the mid-1980s, the financial position of the DFIs' clients had crumbled beyond rescue. The World Bank shut down its outflows as it became clear the DFIs were insolvent, burdened by nonperforming loans (NPLs), euphemistically known as "sick" loans as though some manner of inoculation would cure large and influential willful defaulters. Pakistani DFIs were not alone in this situation. Some DFIs in Indonesia, Malaysia, the Philippines and Latin America also suffered from the same malaise. Although some governments had employed interest rate subsidies via DFI lending – hoping that their clients, the infant industries, would mature – this did not resolve the problem of financial mismanagement. They did not grow into competitive, financially strong industries capable of withstanding the onslaught of foreign competitors with the demise of the quota system under WTO agreements.

Undaunted, however, the Pakistan government established a new DFI, Banker's Equity Ltd, in the early 1980s to provide long-term credit to restart private sector industries and businesses in the midst of nationalized, financially ailing giants. Their business model was predatory from the start and bereft of entrepreneurship: private sector clients would put forward a minimal amount of equity to set up a new

industrial unit (mostly for import substitution business) under heavy protection, tax holidays, subsidized infrastructure and financing, and overvalued exchange rates – the same industrialization formula that had prevailed decades earlier.

Having garnered this support, they would borrow to the hilt from the DFIs or nationalized banks, thereafter pulling out their equity from the business. If the venture failed, as it often did, they would declare insolvency and use their clout to arrange for a loan write-off – they usually succeeded. The state ended up being the ultimate loser in this kind of DFI-funded private sector industrialization in the 1980s. It is little wonder that the public sector came under heavy criticism from all quarters, while these businessmen went on to become new billionaires.

5. East Asian Exports: The Aftermath

In stark contrast to this private business model in Pakistan was that employed by East Asian entrepreneurs who were busy setting up industries based on the Japanese pattern. They would obtain industrial licenses and knowhow from reputable Japanese firms – thus ensuring technology transfer, preferably with some investment by the parent group – and set up industrial units using either the supplier's credit or DFI funding through access to forex lines of credit obtained from the World Bank. Their governments would (i) design competitive investment incentive packages to attract foreign investment, (ii) provide a superb business-friendly environment, (iii) install the requisite infrastructure, (iv) train their own labor force, and (v) educate engineers and executives to launch business operations. This model succeeded for all to see.

These were the modest beginnings of the giants of today: Samsung, LG, Kia and many others in Korea; US- or European-patented high-tech IT products partly manufactured and assembled in the EPZs of Malaysia or China; and brand name high-value items from India and other East Asian or Latin American companies. These new corporate businesses grew rapidly. In short, the East Asian countries, together with successful emerging market economies, underwent a structural transformation from subsistence agro-rural economies to modern industrial giants.

Despite some failures, the East Asian and Indian industries largely succeeded in penetrating foreign markets. Thus began the onslaught of cheap exports to advanced countries as far back as the late 1970s. This gathered momentum during the early 1980s to the point where not only

ordinary consumer goods, but also sophisticated high-value "white goods" for the housing and automobile industries began to feel the heat of competition from imports. By the late 1980s, the emerging economies were on the frontlines and had taken over much of foreign trade, accumulating trade surpluses and massive forex reserves.

The exports of newly industrialized countries created uproar among importing countries. Their industries could sense plant closure and unemployment because they could not withstand the competition. Often, companies would demand extreme measures, asking for a ban on canned fruits and seafood imports, for example. They sued their governments for protection, especially in the US, claiming that foreign exporters were engaging in unfair trade, supported by government-guaranteed, subsidized financing channeled through DFIs and state-owned banks. The larger European and US consumer goods industries were especially vociferous because cheap imports threatened their existence, creating rusting belts in many industrial cities.

A good part of this ire was aimed at the World Bank, which was lending substantial amounts of long-term industrial finance as lines of credit to DFIs not only in Asia, but also in Latin America, helping many countries create an industrial base that eventually wiped out a good part of the consumer goods industries in advanced countries. When some of these countries, such as Korea and Taiwan, began to export light machine tools, followed by heavy electrical tools (such as lathe machines), this caused panic in the US and created pressure on the World Bank to stop lending for industrial growth. The World Bank shut down its Industrial Finance Department in 1981, but allowed its regional offices to continue DFI lending, including in East Asia – although only to those DFIs that showed a healthy financial performance record. No interest rate subsidies or state support was offered to the new exporters.

The campaign to cut off credit lines was even more powerful in the case of World Bank-financed large industrial projects. Earlier on, the World Bank's industry department had helped set up integrated steel mills, large machinery plants, refineries, and petrochemical plants using the same formula of heavy public sector investment and ownership, state patronage in the form of subsidized infrastructure and energy supplies, and grants or subsidized lending in the classic mode of early-stage import substitution. Once these units became strong and competitive enough, their exports began affecting large establishments in advanced countries – those led by big steel and big oil in the US and Europe – and their

financiers, the multinational banks. They mounted a concerted campaign against the World Bank financing of industries, pressuring it to shut down these operations.

In the first round, the World Bank pared down lending for large industrial projects. By the late 1970s, its industry department had been reduced to launching studies of effective protection or industrial advisories, conflicting with the industrial development strategies being pursued by emerging countries. Eventually, both the industry and energy project departments were shut down in the early 1980s. In their place came an emphasis on poverty alleviation, good governance, and cash lending for reforms that suited both the client state and the World Bank. Recently, however, the World Bank and Asian Development Bank have resumed lending for large energy projects on a case-by-case basis, keeping independent power producers' interests ahead.

Overall, this sea change forced a massive retreat on the public sector's part from playing a proactive role to a supportive role, subsumed by the leadership of the private sector. In advanced countries, a paradigm shift reshaped the landscape of industrialization. The slogan was that markets were superior, better organized, and more efficient than the public sector. In short, governments should cease the business of promoting development or providing safety nets to public and allied industries both in advanced and developing countries.

This coincided with the rise of conservative governments in the US and UK under the leadership of Regan and Thatcher, which began a crusade against public sector involvement in promoting economic development, following the Chicago School view that markets could do better than the public sector, and that governments played an intrusive rather than constructive role. They argued that this role should be substantially pared down because it obstructed private sector initiatives or sought to compete with the private sector on turf funded and maintained by the government.

This Friedman-esque market mantra spread rapidly to other advanced countries, percolating down to developing countries through overhauled financial aid and assistance. The need to revamp policy and incentive regimes, shift public sector ownership through privatization, embark on structural adjustment programs, and implement economic and financial reforms to remove financial repression became a battle-cry that was lauded by leading economists, opinion makers, and specialists.

In the case of the financial system in general and DFIs in particular, the argument was that the existing regulatory regime promoted financial repression and that the given interest rate subsidized and layered a system of directed credit, forcing banks, DFIs, and other financial institutions to continue supporting enterprises which otherwise should have been closed down long ago. In some countries, the financial distortions embedded in credit allocation were so acute that they had stymied potential growth. In principle, there is no quarrel with this viewpoint, but in practice, the system of layered credit allocations was used effectively by India and the East Asian countries to achieve industrial growth.

6. Reforms in the 1990s and mid-2000s

The sweeping economic and financial reforms undertaken during the 1990s ushered in structural adjustment, restructuring and privatization, and revamped policy and incentive regimes, which completely transformed most economies, including Pakistan.

6.1. Role of Public Sector Versus Private Sector

In the wake of such reforms, there occurred several financial crises. It took the global financial crisis of 2008 to drill in the realization that the market mantra was flawed. That is, markets are not perfect; markets are neither self-regulatory nor self-correcting; markets are notoriously unpredictable since they are manipulated by insiders; markets cannot be ordered to behave; and market operations are laced with moral hazard owing to regulatory loopholes, and need to be reined in for the public good. This topic is, however, beyond the scope of this paper.

During the 1980s in Pakistan, policymaking circles realized that nationalization had not been the panacea it was supposed to be: most PSEs, banks, and financial institutions (including DFIs) were perennially in dire financial straits. The public sector was effectively bankrupt with no reprieve in sight. Amid such a financial crunch, pressure for reforms came from the World Bank and IMF – not from within – to straighten out a nationalized system that was no longer sustainable and did not deliver. In other words, the government undertook reforms, structural adjustment, and privatization not because it was convinced to do so, but because it had no other option but to borrow from IFIs, given the impending insolvency and need for forex liquidity. Most PSEs, nationalized banks, and financial institutions were consequently slated for privatization.

This reversal occurred on the same grand scale as nationalization. Once again, the industrial sector was turned upside down. The lynchpin of reforms was a revamped policy and incentive regime, along with PSE privatization, which peaked in the second half of the 1990s and went on till 2005. The process was long-drawn and more expensive than anticipated. The loss of net worth and operational costs of privatization were borne by the treasury, but were bundled with the low sale prices received on the auction block at the time of privatization compared to the actual market worth of PSE assets.

Privatization was carried too far and proved too expensive: many PSEs had been set up with money borrowed from the DFIs, which, in turn, had borrowed from the IFIs in hard currencies. The public sector was smothered, not because the PSEs or DFIs were irrelevant, but because their privatization provided a mechanism to sell off national assets at a pittance to favored buyers of the governing elite. Many PSEs were slated for privatization at throwaway prices to "investors" who had no stake in revitalizing or operating these enterprises. They bought such units only to strip down the plant and equipment, lay off employees, and sell the remaining bulk, making a fortune in the process. This is also why there were so many adherents of privatization at the time, while none were to be found in the 1970s. The same scenario is now being replayed in Pakistan's current phase of privatization.

In contrast, the East Asian economies kept their industrial transformation on the same track as before, but bolstered by massive FDI inflows and technology transfers. In setting up footloose industries, they further deepened their export-based industries, while their DFIs became stronger financial institutions than before. Even ailing DFIs were restructured: the government cleared their backlog of NPLs, replenished their equity base, and revitalized them. Korea and China also set up more DFIs, notably the Korea Development Bank, China Development Bank, and export-import banks, which enabled Korean and Chinese firms to operate overseas. Some of these firms are even active in Pakistan.

In financial terms, the East Asian DFIs continued to promote new industries and help diversify the industrial base, while the banking system took over financing large, well-established industrial firms that did not need state-supported funding. Such firms focused on manufactures for export, including high-tech items such as automobiles, household electronic equipment, and communications and IT equipment. Previously, they had lacked the capacity to produce at competitive prices

for the international market. This transformation of the industrial sector echoed the success of advanced countries that had dominated the global production of high-tech manufactures until now.

These developments were buttressed by mounting foreign trade surpluses in East Asia's emerging economies. As the transformation progressed, it was followed by large foreign portfolio investment, capital market growth, the massive accumulation of forex reserves and, inevitably, enhanced exposure to exchange rate risks. This cut a deep swath later, when speculative investment in the stock market and real estate created a financial bubble that was liable to explode – as it did in the late 1990s. In the frenzy to invest, memories of the Japanese real estate bubble of 1991 had faded. When the financial crisis occurred, its swiftness and size left no room for escape and the East Asian "miracle" appeared to have become a debacle. Ultimately, the crisis needed massive joint intervention by central banks and governments to be contained. Within a few years, however, the East Asian economies had recovered.

India traversed more or less the same path of reforms in the 1990s, barring the financial crisis. It began by reforming the financial system, loosening the grip of the license raj over the private sector in general and the industrial sector in particular. However, the Indian DFIs did not close down: instead of vanishing, their client base had prospered to the point where the newly reformed banking system could take over clients' financing needs. These were infant industries that had matured and become strong enough to withstand competition in international markets. The DFIs moved on to finance new infants, such as recently established SMEs seeking a foothold first in the domestic market and – as the foreign trade regime opened up – then in the international market. While India's industrial sector had matured for this transformation, Pakistan continued to lurch between extremes, this time grappling with privatization amid questions about the role of the public sector if privatization were to reach such dimensions as it did in those turbulent years. We return to this later.

Both India and China have maintained a sizable network of DFIs since the 1990s and always actively promoted SME financing. India has three layers of DFIs. The top layer consists of flagship DFIs, including development banks – such as the Industrial Development Bank of India, IFCI Ltd, and the Industrial Investment Bank of India – and specialized financial institutions such as IFCI Venture Capital Funds and ICIC Venture Funds. The second layer comprises DFIs regulated by the Reserve Bank of India: these include the EXIM Bank, the National Bank

for Agriculture and Rural Development, the Small Industries Development Bank of India, and the National Housing Bank. The third layer consists of state-owned DFIs, of which a fairly large number are active in various types of financing to promote economic growth, mostly local SMEs. India did not buy into the argument of financial repression or disband its DFIs, but – unlike Pakistan – it maintained financial discipline throughout, owing to its clients' business model.

The same applies to China, where a large number of DFIs, led by the China Development Bank, engaged in a range of financing activities to modernize the country's various sectors, bring industrialization to remote regions, and integrate them with the mainstream economy. This is a more pervasive role than simply providing finance for industrial investment.

In Pakistan, during the reforms, the National Development Finance Corporation and IDBI were closed down, as was Banker's Equity Ltd. PICIC was restructured as a commercial bank and the Agricultural Development Bank was resuscitated as the Zarai Taraqiati Bank Ltd (ZTBL). The SME Bank kept teetering on the brink, and despite efforts in the early 2000s could not be revived. The House Building Finance Corporation suffered severe loan losses and was nearly closed down, but survived with the help of considerable renewed financial support from the government. The Punjab Bank, a provincial DFI, went down a similar path, but survived with provincial support and was then resuscitated as a commercial bank.

6.2. The Role of the Public Sector in Pakistan Revisited

Until recently, most governments in Pakistan have generally shied away from demarcating roles for the public and private sectors, even during the halcyon days of nationalization. Many did not realize that it is easy to set up a heavy machinery complex in Taxila in the public sector and call it "industrialization" than to create an industrial society out of a traditionally rural society based on patterns of tribal *sardari*. The ensuing conflict between the perceived roles of the private sector versus the public sector stymied growth. Worse yet was the failure of many PSEs, as the government continued to bail them out through credit extended by the DFIs and banking system, which eventually proved insufficient.

During nationalization, the PSEs kept operating at unsustainable prices and exchange rates, financing each other through internally generated IOUs. Often, it took the government several years of repeated stabilization efforts to realize that, until the role of the PSEs was

rationalized, budget and current account deficits would continue to emerge and reforms would not succeed. This failure to define the respective roles of the public and private sectors led to severe economic and financial problems, even though Pakistan underwent reforms and restructuring at an exorbitant cost.

Eventually, several PSEs were closed down, restructured, or privatized owing to the conditionalities attached to stabilization, debt relief, and restructuring funded by the IFIs; this generated severe opposition, compounding the chaos. Without a demarcation of roles, a policy and operational framework could not be designed, much less implemented, to ensure stability and growth. This did not support industrial transformation of the type that occurred among comparator countries, although Pakistan's economy became more diversified, reasonably open, and market-based after the reforms were over. The primacy of the public sector abated, but its legacy lingered for some time.

Privatization cannot be successful unless accompanied by major steps undertaken in parallel as part of the reforms. Foremost, as the owner of these financial institutions, the government had to restructure them before they were privatized. This involved (i) underwriting the costs of restructuring embedded in asset revaluation and employee severance, and (ii) cleaning up the balance sheet of deadweight NPLs and other assets of dubious value, partly through massive loan write-offs and provisioning for NPLs. In the process, state-owned financial institutions, banks, and DFIs together had to absorb the loan losses of the PSEs. The government also had to absorb the operational losses incurred.

Overall, the costs of privatization were staggering and were absorbed by the government and financed by borrowed funds. What these costs were is not known for certain. The resulting post-reforms structure was very different from the previous structure. Since the government did not have resources of its own to meet the costs of nationalization, it had borrowed cash loans in hard currencies from the IFIs for restructuring and reforms, thereby adding to the debt burden of the 1990s.

6.3. The Post-Reforms Period

In the early 2000s, as the newborn private corporate sector was being consolidated, setting up operations anew needed long-term industrial finance, but there were no surviving DFIs. The same situation is now transpiring in Pakistan amid reforms and exhortations to "do more."

The dimensions of privatization can be gauged from changes in the ownership structure of PSEs, but we do not have data for the corporate sector, except for the banking and financial system. The existing data would likely reveal a major shift in the ownership of the banking system toward the private sector. The proportion of private share capital in the total share capital of the banking system was about one fifth at the start of the reforms in the 1990s. Currently, it is virtually all held by the private sector, excepting the National Bank of Pakistan, ZTBL, and a few others.

This was the magnitude of reversal, post-nationalization. The rub lies in the fact that, while the share of government ownership declined, its share of the use of total financial resources mobilized did not. This is evident from the public sector's share of banking system credit as well as government borrowings from the banking system.

A large volume of financial savings was channeled to the public sector through government borrowing from the banking system and money market operations. To arrive at an understanding of the total resources used by the public sector, we must combine the banking system credit to the public sector with its borrowings from money and capital markets, lodged as investments in banks, although these are loans to the government in the guise of investment. If we combine all these, we find that nearly 60 percent of the annual flows of financial resources – namely financial savings – were channeled to the public sector through the financial system, plus NSS operations (which are outside financial system flows), currency seigniorage, and inflation tax.

This has continued today. Consequently, the public sector is still able to garner a hefty share of the total financial resources generated in the country through the operations of the financial system, thus acquiring the underlying real resources. The crowding out of the private sector has been mitigated, but only in the sphere of banking credit, not in the context of resources at a macro-financial level.

This goes back to the issue of who generates and supplies financial resources, who eventually uses them, and how good is the transfer mechanism or financial intermediation in question. In all this, how much of these resources are available to promote the industrial sector is muddied, but the fact remains that the banking system is not known to provide term financing for the establishment of new industries. There may be scope for DFIs in Pakistan, but there are simply no DFIs left.

The Lahore Journal of Economics
20 : SE (September 2015): pp. 31–58

The Return of Industrial Policy and Revival of Pakistan's Economy: Possibilities of Learning, Industrial and Technology Policies

Akbar Noman[*]

Abstract

After being among the earliest countries to embark on the East Asian path, Pakistan fell away but was still among the ten fastest growing economies of the world during 1960–90. However, the seeds for the subsequent economic and technological malaise were also sown in that period. This paper provides an overview of recent theoretical and empirical work on industrial policies – more accurately labeled learning, industrial and technology (LIT) policies – and examines their implications for Pakistan. These include a selective, more sharply focused approach than the comprehensive agendas of reforms that have become common. Substantial islands of success with industrial policies have emerged in a variety of institutional and governance settings, different from those of the original East Asian developmental states. They offer valuable lessons. Raising the abysmally low level of investment in Pakistan is a requirement as well as an outcome and an instrument of industrial policies. This argues for a revival of development finance to stimulate investment as well as to direct it towards selective targets. How to mitigate the risks of this and other instruments of industrial policy to get the risk–reward ratio right is another concern of the paper. An important target of such policies should be the technological upgrading of existing industries. There is enormous scope for doing so, with international comparisons suggesting that Pakistani manufacturing does poorly – both in terms of variance in productivity between firms within an industry as well as in introducing new technologies and products. Whilst the constraints of the politics–governance–security/terrorism nexus are beyond the scope of the paper, their salience cannot be underestimated.

Keywords: Industrial policies, learning, technology, industrialization, development finance, Pakistan.

JEL classification: L52, L60.

[*] Senior Fellow, Initiative for Policy Dialogue, Columbia University, New York.

1. Introduction

After a long exile during which industrial policy (IP) had become unmentionable among mainstream economists, it has again become respectable. The literature extolling the case for IP has mushroomed in recent years, with a spate of publications both on its theory and practice. Justin Lin and Joe Stiglitz give the title "The Industrial Policy Revolution" to the two volumes emerging from two conferences/roundtables organized by the International Economic Association (see Stiglitz & Lin, 2013; Stiglitz, Lin, & Patel, 2013).[1] In the foreword to the volumes, the then president of the association, Joseph Stiglitz, observes that "the roundtables were convened in recognition of the fact that industrial policy is a sort of lynchpin in the economics of development, that the countries that have been most successful in development have undertaken a wide variety of industrial policies and different countries can and should learn from these experiences."

The IP that Stiglitz and others speak of is not confined to industry, but also pertains to other activities, particularly in which learning and technological change are important, ranging from the information technology (IT) sector to agriculture with the "Green Revolution" in India and Pakistan being, arguably, a prime example of success with IP.[2] Hence, as Noman and Stiglitz (2011, 2015) propose, they are more accurately referred to as "learning, industrial and technology" (LIT) policies, which would also serve to get away from the misconceptions and knee-jerk reactions that the term "industrial policy" evokes (the terms are used interchangeably here, given the familiarity with "industrial policy").

Notwithstanding this revival of LIT policies, strong objections and resistance remain from recalcitrant adherents of the neoliberal orthodoxy that was manifested in the so-called Washington Consensus. A more qualified and nuanced set of concerns have also been raised, revolving around issues of governance and rent seeking, and ones that most proponents of IP in the new literature recognize. Thus, they also focus on mitigating the risks and getting the risks–rewards ratio right. It should be noted that risks, failures, and governance challenges are no preserve of LIT policies: they arise in almost all spheres, including programs of

[1] Also see, for example, Chang (2002, 2013); Lin (2012, 2014); Cimoli, Dosi, and Stiglitz (2009); Noman and Stiglitz (2011, 2015); Greenwald and Stiglitz (2006); Stiglitz and Greenwald (2014); Mazzucato (2013); Andreoni (2015); Primi (2015), and several other works listed in the references.

[2] For an elaboration, see, for example, Noman and Stiglitz (2011). Hosono (2015a) includes the technological change that transformed vast tracts of what were once barren agricultural lands in Brazil as one of the five cases of outstanding success with IP that he examines.

liberalization and privatization that also can be – and have been – captured and give rise to enormous rents.

In Pakistan, too, there has been a revival of the case for IP, especially at the Lahore School of Economics, with a number of recent articles on the topic in the *Lahore Journal of Economics* (see, for example, Amjad, 2006; Haque, 2014; Burki, 2008; McCartney, 2014; Rahim, 2012). The particularities of Pakistan today that will have a vital bearing on whether and to what degree these and the economic policy proposals advanced in this paper will be effective or desirable will depend crucially on the politics that undergirds economic management.

Pakistan can be characterized as a "conflicted state", referring not only to the challenges of armed conflict and the battle against terrorism, but also to the priorities of policymakers. These refer to both conflicting priorities in economic policies and to the tension between economic and noneconomic objectives. One such type of conflict is that manifested in the form of rent seeking: some rents are more inimical to economic progress than others, and some can be good for economic growth.[3] Some such conflicts are inevitable in all societies, but a modicum of consensus or coherence and consistency is essential for sustained success in the sphere of economics. What is involved in seeking and arriving at such a consensus is beyond the scope of this paper. However, it is premised on a sufficient resolution of these different types of conflicts to allow adequate implementation of at least the less challenging – in politico-institutional terms – of its recommendations.

The theoretical case for LIT policies has been bolstered and nuanced in recent years by two factors: (i) the focus on externalities in learning and in discovery, which Stiglitz and Greenwald (2014) and Hausmann and Rodrik (2002), respectively, have emphasized; and (ii) the importance of economic structure, which has long been recognized (see Ocampo & Ros, 2011), but revived recently notably in Lin's "New Structural Economics" (2012) and in Ocampo's writings (see, for example, Ocampo, Rada, & Taylor, 2009). These considerations strengthen the case that Noman and Stiglitz (2011, 2015) make for using LIT rather than IP to more accurately capture what such policies should be about.

[3] Rents are pervasive in all economies and related corruption not uncommon. However, some rents may be good for economic growth and transformation, with dynamic gains outweighing static losses, such as those associated with industrial polices in success cases – including, notably, in the East Asian stars. Patents are another notable example of the recognition that some forms of rents can benefit economic and technological progress. The challenge is to direct rents toward productive and transformational activities rather than, say, to real estate overseas.

One implication of the new or renewed emphasis on learning and structure is that it underlines the importance of manufacturing and the IT revolution. Indeed, Greenwald and Stiglitz (2006) make a case for general protection of the manufacturing sector in low-income developing countries on the grounds that it is likely to be more learning-intensive than other sectors that predominate at early stages of development. Since industries vary in their learning intensities, this also constitutes a basis and a criterion for LIT policies targeted at particular industries or activities.

As noted above, this recent literature strengthening the theoretical underpinnings of LIT policies is not unmindful of their pitfalls. The issues of design and implementation challenges are widely acknowledged, particularly in the often messy and weak institutional and governance contexts of developing countries such as Pakistan. There is no gainsaying that the choice of instruments and scope of LIT policies should depend on the competencies and priorities that underlie governance. Often, the mitigation of the risks of state capture and rent seeking calls for broad-based "horizontal" policies (such as undervalued exchange rates or technical training) or very narrowly focused, carefully circumscribed "vertical" policies pertaining to obvious low-hanging fruits, i.e., measures with low risks relative to rewards. It should also be noted that there are many examples of failed attempts at IP but it is difficult to parse the causes of the failures. They were often the result of inappropriate macroeconomic management or poor governance. Moreover, as noted above, risks and governance challenges arise in all spheres of economic management, not just LIT policies.

In addition to these conceptual and theoretical elaborations, a number of empirical studies have emerged in recent years. One strand, notably the work of Chang (2002, 2013), emphasizes the vital role LIT policies played in the historical experience of the now developed countries. He shows that this was the case, not just for those that caught up with the most advanced economies in the 19th and 20th centuries, but also the original advanced economy, the UK, where the industrial revolution was born. Earlier, Gerschenkron (1962) had shown the importance of the state with IP-style interventions in European industrialization.

The second strand of recent empirical work goes beyond the focus on the original four East Asian "tigers" (Korea, Taiwan, Singapore, and Hong Kong) – as analyzed notably in the classic works of Amsden (1989) and Wade (1990) – to examine cases of success elsewhere (e.g., Brazil, Ethiopia, Bangladesh, Chile, China, Thailand, and Mauritius). Earlier, the World Bank's (1993) study of the "East Asian miracle" was a notable

exercise in extending the analysis beyond the four tigers plus Japan to include Indonesia, Malaysia, and Thailand among the "miracle" economies of the region. But, in its final version, the study goes to great lengths to underplay the role of IP. At times, it seems to verge on making the seemingly astonishing claim, first, that the East Asian "miracle" happened not because of, but despite, IP – astonishing, especially in the light of very detailed and careful research that shows otherwise, including notably Amsden (1989, 2001) and Wade (1990). Second, that, if and to the extent IP did not have a negative impact in the eight countries the report examines, other countries should not try to emulate them because they lack the allegedly unique institutional and political economy setting of the East Asian "miracle" countries, which allowed rapid development to coexist with IP.

The more recent set of empirical studies – as well as, arguably, the aforementioned World Bank study, notwithstanding its protestations – bring out the heterogeneity of conditions and circumstances in which IP can work, as also recognized by the report of the Growth/Spence Commission (Commission on Growth and Development, 2008). The degrees and nature of success with LIT policies (as well as details of policy design) also vary with several cases of sectoral or subsectoral success with substantial overall economic impact, as distinct from the full-fledged, wide-ranging, and more systematic LIT policies of the classic East Asian kind (see, for example, Oqubay, 2015; Hosono, 2015; Abebe & Schaefer, 2015; Andreoni, in press; Shimada, in press; Chandra, 2013; Narrainen, 2013).

There are potentially important lessons for Pakistan in these partial but significant successes in taking the next steps to revive LIT policies. This is illustrated by McCartney's (2014) focus on the lessons for Pakistan's textile industry from Bangladesh's garment export performance. More broadly, there are lessons to be learned from such (substantial) islands of success in countries with varying degrees of complex political circumstances at some distance from the (somewhat idealized) full-fledged "development states" of East Asia: Japan, Korea, Taiwan, and Singapore.[4]

In this context, there is a great deal to be said for moving away from the wide-ranging, almost all-encompassing reform programs that have been proposed both in some Government of Pakistan publications and in many reports of international and outside agencies, as McCartney (2014) emphasizes. Such long lists of reforms became common in many

[4] Bangladesh, with its highly polarized, personality-driven, dysfunctional politics is a particularly striking example of how an island of success can emerge in problematic governance settings.

countries especially during the era of "conditionality" based on the Washington Consensus.[5] Aside from the flaws in any specific proposals, they attempt to pursue the best, the enemy of the good, and lead to paralysis in the face of the overwhelming nature of the tasks.[6] This could be said to be a lesson of reform programs: they have to be mindful of the capacity to implement reforms and, hence, of priorities and sequencing (see, for example, Noman & Stiglitz, 2013, 2015a).

The rest of this paper is organized as follows. Section 2 provides an overview of Pakistan's development experience and the context for LIT policies. Section 3 turns to which IPs would be appropriate for Pakistan's economy in the light of its past and current conjecture. In doing so, it focuses on the lessons for Pakistan from recent empirical work on what has worked in contexts *other* than the classic East Asian cases, where islands of success have emerged. These are deemed more relevant for Pakistan today. Section 4 focuses on policies aimed at technological upgrading in general rather than any particular area. Section 5 is devoted to concluding comments.

2. Pakistan: Past and Present

It is ironic that Pakistan, which was among the first of the "East Asians" emulated by Korea in the early 1960s, has now to relearn not only from the East Asians who have left it far behind, but also lesser, albeit significant, successes elsewhere.

Pakistan was at the forefront of export promotion, while retaining very high levels of protection and what has been labeled an "import substitution industrialization" strategy. In 1965, its manufactured exports at US$ 190 million (current $) were almost double those of Korea (US$ 104 million); some 42 percent and 15 percent higher than Brazil and Mexico, respectively; and exceeded the combined total of such exports from Indonesia, the Philippines, Thailand, Turkey, and Malaysia. By 1985, exports of manufactures from Pakistan, at US$ 1,731 million, were well below all these countries' exports (manufactures), ranging from 80 percent of the level in Indonesia to 6 percent of that in Korea.

[5] For the more general case against attempting too many reforms too quickly, especially the African experience therewith, see Noman and Stiglitz (2015).

[6] The most recent examples of such overwhelming laundry lists of reforms for Pakistan include the World Bank (2013) and a series of papers it has published with the caveat that they reflect the views of the authors and not necessarily of the Bank. These are Speakman, Afzal, Yuge, and Hanna (2012); López-Calix and Touqeer (2013); and Bennmessaoud, Basim, Cholst, and López-Calix (2013). All these are available on the World Bank website.

Notwithstanding the exogenous shocks of the war with India in 1965 (and the associated impact on aid inflows), the 1971 war and the break-up of the country as well as the "policy shocks" that followed in its aftermath,[7] the growth momentum was such that, over the three decades ending in 1990, Pakistan's annual GDP growth rate placed it among the top ten countries,[8] albeit in aggregate rather than per capita terms (Table 1). This, though, was also an era where the "Green Revolution" in agriculture, some fortuitous exogenous "shocks", and unsustainable fiscal expansion in the 1980s boosted Pakistan's growth.

Table 1: The ten fastest growing economies, 1960–90

	Country	Annual GDP growth rate 1960–90 (percent)	Annual CPI inflation 1960–91 (percent)
1	Republic of Korea	9.3	12.2
2	Hong Kong	8.7	7.6
3	Taiwan (China)	8.3	6.2
4	Singapore	8.0	3.6
5	Thailand	7.5	5.6
6	China	6.6	3.4
7	Japan	6.6	4.9
8	Malaysia	6.5	3.4
9	Egypt	6.2	8.3
10	Pakistan	6.1	7.8

Notes: The table excludes countries with populations of under 2 million in 1990.
Among economies with an annual GDP growth rate of at least 5 percent over the 30 years (and populations greater than 20 million in 1990) were the following: Turkey (5.6 percent), Kenya (5.5 percent), Brazil (5.3 percent), and Mexico (5.0 percent). India's GDP grew at 4.4 percent during this period.
Three countries with populations of 1–2 million showed annual GDP growth rates exceeding 6 percent during 1960–90: Oman (12.3 percent), Botswana (10.4 percent), and Lesotho (6.4 percent). The oil sheikhdom Oman should qualify for some sort of world record for an annual GDP growth rate of 39.7 percent during 1965–70.
Source: World Development Indicators (http://data.worldbank.org/data-catalog/world-development-indicators).

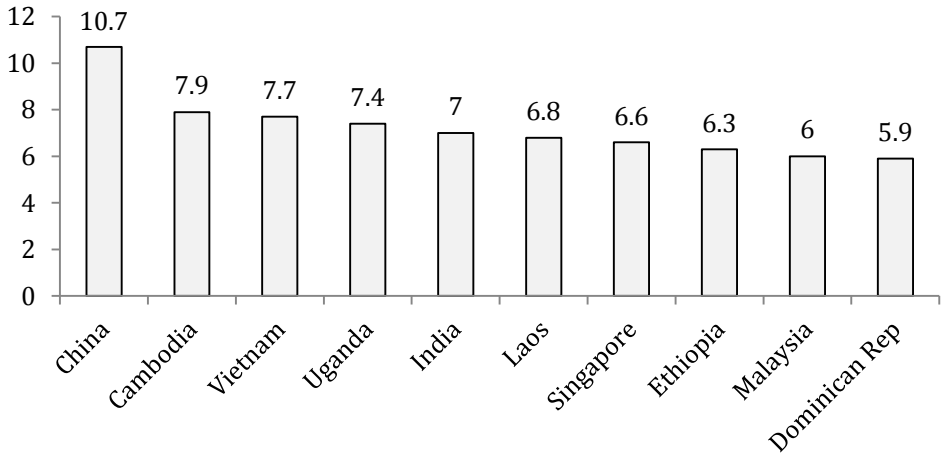
Since 1990, Pakistan has fallen far out of the top rankings of the GDP growth league, with a rate of around 4.4 percent a year over 1990–2010. Figure 1 shows the ten fastest growing economies (excluding oil exporters) and their annual growth rates during these two decades. India

[7] Much of the country's manufacturing and finance was nationalized, bringing to an end the Korean-style "chaebols" that were, arguably, emerging then.
[8] Excluding countries with populations of less than 2 million in 1990.

took over as the growth leader in South Asia and all other economies in the region had a GDP growth rate higher than that of Pakistan, with Sri Lanka averaging 5.6 percent and Bangladesh 5.4 percent. Given that Pakistan has the highest population growth rate in South Asia, its growth in per capita terms lagged even further behind the other economies in the region.

Among the top ten countries of 1990–2010, in terms of GDP growth, Ethiopia is a particularly interesting and illuminating case.[9] Under the late Prime Minister, Meles Zenawi, it deliberately articulated and pursued policies emulating East Asia in the mid-to-late 1990s, in particular LIT policies. After a lackluster performance in the first half of the 1990s (when civil war still raged and the country split up with Eritrea, becoming independent), growth began to pick up in the late 1990s to the extent that, during 2000–10, Ethiopia's annual growth rate at 8.8 percent was second only to China's (10.7 percent) in the world. It has continued to grow at roughly similar rates after 2010. Its industrial or LIT policies are elaborated below and raise the question, if Ethiopia with much less of an entrepreneurial-managerial base can do it, why can't Pakistan and how might its lessons be learned.

Figure 1: Annual GDP growth rates, 1990–2010 (%)



Note: The figure gives the averages of the annual growth rates in the two decades 1990–2000 and 2000–10. The three countries heavily reliant on oil exports, which were in this growth league, are Mozambique (7.0 percent), Kuwait (6.7 percent), and Sudan (6.1 percent).
Source: World Development Indicators (http://data.worldbank.org/data-catalog/world-development-indicators).

[9] Ethiopia's story is discussed at some length in Noman and Stiglitz (2011, 2015).

Before turning to what might be done in Pakistan, it would be in order to glance quickly back at what changed between 1960–90 and 1990–2010 that transformed the country from among worldwide leaders in the growth league with the fastest growing economy in South Asia to a laggard with the slowest growing economy in the region.

Arguably, the seeds for the slowdown were sown in the 1970s with the disruptions resulting from war and the break-up of the country, combined with ill-conceived populist policies and nationalization. While much of that was reversed in the 1980s, the decade was one of facile growth[10] and one in which a different set of seeds was sown for the subsequent slowdown (it should also be noted that the growth impetus provided by the Green Revolution in the late 1960s and 1970s had also begun to dissipate by the 1980s).

This 1980s set of bad seeds refers to the following phenomena. The first was heavy domestic borrowing at very high interest rates that allowed unsustainably expansionary fiscal policies in the 1980s and that were at the heart of the macroeconomic crises and consequent austerity programs – with a series of IMF bailouts – that have shackled growth since the early 1990s. Much of this fiscal stimulus was not reflected in public expenditures of the sort that were good investments for sustained future growth.

Second, arguably, was the germination of the politics–governance–security nexus with the deterioration in the security situation and the rise of terrorism. Associated with this was the worsening of foreign attitudes and business sentiments and costs of doing business. Third, another obvious candidate among the causes for the deceleration, was the neglect of infrastructure and human development/capital during the fiscal consolidation required after the binge of the 1980s and attendant growing bottlenecks, especially of electricity.

Public sector development expenditures bore much of the brunt of attempts to cut fiscal deficits. However, even in the heyday of its growth performance, Pakistan grossly underinvested in human development. This underinvestment was in sharp contrast to the East Asian economies that sustained rapid economic growth and transformation and no doubt contributed to the reasons Pakistan was unable to do so. (Another such important contrast was that, unlike East Asia, growth was not widely shared

[10] Aside from unsustainable fiscal expansion, growth was facilitated by the expansion in domestic demand made possible by Afghan war-related foreign-financed expenditure and (more speculatively) increased drug smuggling. See Noman (1992).

in Pakistan, which resulted in political turmoil, especially the tensions that culminated in the erstwhile East Pakistan becoming Bangladesh.)

A fourth reason, though not unrelated to the previous ones, was the depressed level of aggregate investment. Even in its high-growth phase, Pakistan was not much of an investor with the investment-to-GDP ratio hovering around 20 percent during 1960–90. In recent years, it has declined to some 15 percent. Clearly, with that sort of investment level, no country can grow at anything approaching 6 percent a year. It is also most unlikely to succeed in technological upgrading or more generally in pursuing LIT policies.

That Pakistan acutely needs to do so is well documented. Several studies document the technological quagmire surrounding the country's manufacturing and exports (see Amjad, 2006; Haque, 2014; Lall & Weiss, 2004; Hausmann, Hwang, & Rodrik, 2005; Kemal, 2006; World Bank, 2013; Asian Development Bank, 2003). Thus, Pakistan does very poorly on the assorted standard indicators of technological development: sophistication of exports, ISO certification, patents, availability of key high-level skills, research and development, and so on.

3. LIT Policies

This section describes the LIT policies on which Pakistan should focus.

3.1. Investment and Development Finance

The aforementioned calls for a revival of IP in Pakistan make a compelling case, the more so in light of the literature referred to above. The focus here is on elaborating some important policy implications of doing so.

First and foremost is the importance of raising investment from its abysmal level of roughly 15 percent of GDP. The second challenge is to direct investment toward promoting industrialization and other activities that lead to learning and technological upgrading. The first proposal (discussed below) pertaining to finance serves both as an outcome and an instrument of LIT policies. It is also the most challenging one and likely to be the most controversial. The subsequent policy proposals are roughly in descending order of challenge and controversy, ending with some bordering on being "no-brainers", i.e., providing opportunities of low risks and high returns.

Before turning to economic policy, there is no gainsaying that an important impediment to raising investment in Pakistan is the country's security situation – as highlighted by both the private sector representatives who spoke at the conference at the Lahore School of Economics (at which a preliminary version of this paper was presented).

In the realm of economic policy, one implication of reviving IP in the country that is analytically compelling, though demanding in institutional and governance terms, is the high risk–high reward action of establishing or reviving development finance institutions (DFIs). There is no gainsaying that access to finance on attractive terms can both stimulate overall investment and be used to direct it.[11] Earlier in Pakistan's past, two DFIs, the Pakistan Industrial Credit and Investment Corporation (PICIC) and the Industrial Development Bank of Pakistan (IDBP), played a vital role in creating a class of industrial capitalists-entrepreneurs and in the rapid industrialization of the 1950s and 1960s (see Papanek, 1967; Lewis, 1970). They demonstrated the powerful impact that DFIs can have in raising investment levels.[12] Long-term loans at moderate-to-low interest rates can serve as one way to socialize the risks of investment – a mechanism that played an important role in promoting not only investments, but also savings in the "miracle" economies of East Asia, because the powerful incentive to invest also served to enhance corporate savings (World Bank, 1993; Stiglitz & Uy, 1996).

The case for mobilizing development financing to stimulate investment is made the more compelling by the severe constraints on public investment or development expenditures on account of the fiscal position. The great difficulties Pakistan has had in raising its extremely low tax-to-GDP ratio in the face of the compulsions for fiscal consolidation are unlikely to be eased speedily. There is then a prima facie case for development finance to be also directed at public-private partnerships in the provision of public or quasi-public goods, especially in the spheres of infrastructure and perhaps human development (though the scope for public-private partnerships in the latter is likely to be confined to high-level technical education).

However, this raises a number of issues revolving around governance and the capacity to run DFIs effectively – in particular to guard

[11] Burki (2008) notes the importance of appropriate finance for IP, but suggests focusing on small and medium enterprises and on utilizing new financial instruments developed in recent years, such as private equity and venture capital.

[12] On the general case for development banks, see Griffith-Jones and Cozzi (in press).

against their capture by politically powerful rent-seekers. Such capture marred the experience with nationalized commercial banks, particularly in the 1980s and 1990s. Careful attention needs to be paid to how the risks might be mitigated (later on, this paper provides some initial thoughts on how to go about doing so). There is no gainsaying, however, that in the political context – or what Mushtaq Khan calls "political settlement"[13] – of Pakistan today, DFIs would be a bold and risky venture. Perhaps that is why Burki (2008) refrains from proposing them whilst emphasizing the importance of reviving development finance. At any rate, his proposals for mobilizing new instruments such as venture capital and equity finance deserve attention, but are unlikely to make anything like the impact that more conventional development finance can, in raising investment.

Success in this venture is likely to be particularly contingent on easing the political constraints that were emphasized at the outset, with political commitment to adequate space for such technocratic measures. In this regard, it is worth noting that one of the architects of India's economic reforms of the past two to three decades, Montek Singh Ahluwalia, has emphasized the importance of political consensus, arguing that a strong consensus on even weak or gradual reforms has served India well.[14]

In designing the details of the operational procedures and policies of the DFIs (including perhaps on insulation from "political" lending), Pakistan could seek technical assistance or advice from successful development banks. Whilst the experience of such banks in advanced countries – such as Germany's KfW or European Investment Bank – or in the full-fledged developmental states of East Asia could provide useful lessons, the experiences of reasonably successful development banks operating in rather less advanced developed or developmental states are likely to be particularly relevant. Aside from lessons from Pakistan's own past in the heyday of PICIC and IDBP, the most obvious candidate for such learning is probably the Brazilian Development Bank, the BNDES. The Corporación Andina de Fomento in the Andean region and the Development Bank of Ethiopia are other examples of possible candidates for emulation.

Another way to mitigate risks and strengthen the ability of current and future governments to resist political pressure would be to make the

[13] Khan (2000) analyzes the political constraints that hampered the efficacy of IP in Pakistan. In his later writings, he labels such political economy considerations "political settlements" and elaborates on the concept.

[14] More precisely, he attributes India's success to a strong consensus on weak or gradual reforms (see Ahluwalia, 2002).

operations of the DFI, especially lending decisions and repayments, transparent by publicizing them and subjecting them to outside scrutiny, including possibly by Parliament and its Public Accounts Committee. Another such measure could take the form of having outsiders serving in some capacity to oversee lending decisions. These could be, for example, representatives of multilateral development banks – who would then also be more inclined to provide financing – or civil society representatives with impeccable credentials. The latter could be either from domestic or international NGOs or some combination thereof.

In any event, the sphere of operation of any DFI in Pakistan should be carefully and narrowly circumscribed to the sort of activities we identify later on as providing a particularly high reward-to-risk ratio or what might be termed the "little-or-no-brainers" for LIT policies in the country. Another option would be not an altogether new institution, at least to begin with, but a development finance window in an existing institution.

Another crucial issue is that of the DFI's source of funding or its deposits/liabilities. In their prime, PICIC and IDBP relied heavily on World Bank financing. It is highly unlikely that the Bank would reverse its policy of cutting off such support to DFIs in the foreseeable future. Given the state of public finances, the banking sector, and nonbank financial institutions in Pakistan, DFI lending on an adequate scale is likely to require external financing. Among the more promising sources of concessional financial support, China is probably the most prominent. The New Development Bank is also a possibility. Another option could be providing a stake to some sovereign wealth fund such as the Malaysian "Khazanah", which actually provides support to LIT policies in Malaysia.

3.2. Targeting Activities in a Selective "Islands" Approach

We turn now to the less challenging and less controversial questions of (i) what particular industries and technological upgrading to promote, and (ii) how to go about doing so with (ideally) or without (possibly) an effective DFI.

On choice of industry, recent proposals include Amjad's (2006) call for targeting IT, Rahim's (2012) suggestion to subcontract in international value chains, Haque's (2014) idea of focusing on export competitiveness, and Burki's (2008) proposal to pick "winners" focused on small and medium enterprises, notably agro-processing, small-scale engineering, leather products, and IT in the Punjab. Burki also calls for analytical work

to pick "winners" by carefully assessing the opportunities in both domestic and foreign markets.

In identifying the targets of LIT policies, one promising approach is that proposed by Lin (2014), who argues that, "for an industrial policy to be successful, it should target sectors that conform to the economy's latent comparative advantage. The latent comparative advantage refers to an industry in which the economy has low factor costs of production but the transaction costs are too high to be competitive in domestic and international markets." In answering the question, "How are governments able to pick the sectors that are in line with the economy's latent comparative advantages?", Lin says that a "short answer is to target industries in dynamically growing countries with a similar endowment structure and somewhat higher income." Elsewhere, he has spoken of "somewhat higher income" as being not much higher than roughly two or three times the per capita income of the economy at hand.

The Lin proposal need not be the only route to identify targets for LIT policy support, but it would be a useful starting point in Pakistan today. Chang (2002), in particular, emphasizes that, while Lin's "latent comparative advantage" approach has considerable merit in mitigating the risk of picking "losers", it is a little too cautious and does not accord with the experience of some countries, especially in East Asia, that also sought and created dynamic comparative advantage in industries outside the ambit of Lin's "latent comparative advantage". Perhaps one such opportunity is provided by the development of niches in the global value chain of "green" technology: given the critical importance of dealing with climate change, this is going to be an area of rapidly growing global demand.

At any rate, in Pakistan there is one highly promising area to target that is consistent with the "latent comparative advantage" approach: the long-established textiles sector. It has remained mired in low-productivity activities producing output at or near the lowest end of technological sophistication and demand dynamism. Among the many calls for upgrading Pakistan's textiles sector is that of McCartney (2014) who seeks to extract lessons for Pakistan from the experience of Bangladesh.

3.3. Creating Islands of Success

McCartney's (2014) proposal accords well with the suggestion made above for Pakistan to learn lessons from "islands" of success in a variety of countries with varying proximities to a developmental state. This

section elaborates on some of the examples cited in the opening section. One highly illuminating exercise by Hosono (2015a) examines what he labels as five "outstanding cases of success" in different countries and sectors. These are (i) automobiles in Thailand, (ii) the "Cerrado" in Brazil (which was transformed from a vast expanse of barren land to a place of highly productive agriculture), (iii) the garments industry in Bangladesh (most relevant for Pakistan), (iv) salmon fisheries in Chile, and (v) Singapore's upgrading of its industrial sector from a labor-intensive to a knowledge-intensive base (least relevant for Pakistan).[15] Noman and Stiglitz (2015b) summarize Hosono's (2015a) work as follows:

> Hosono seeks to extract insights from these rich case studies on how the various considerations that go into the making of industrial policy interact in practice in successful cases. He focuses in particular on the acquisition of capabilities; the creation of a learning society; using and altering factor endowments to move from static to dynamic comparative advantage; compensation for the positive externalities generated by the costs of discovery by pioneer firms; and the management of the pressures generated by globalization and the ideology and interests of "free-marketers".
>
> Hosono's five case studies illustrate how the general principles of good industrial policy vary in their translations into different contexts. But they also illustrate the mutual causality between industrial development and economic transformation, on the one hand and the "constant development of capabilities and knowledge through learning". In the case of Singapore, in particular, Hosono emphasizes the crucial role of "learning to learn". *These cases also serve to bring out that reasonably good institutional "islands" created for specific purposes, as distinct from an overhaul of the entire institutional structure, can be highly effective* [emphasis added] … Hosono's paper also brings out the important role that the development of physical infrastructure plays as an instrument of industrial policy.

Another example of the island approach, and one of particular interest that is examined in some detail below, is that of Ethiopia. As noted above, excluding countries with oil exports and discoveries, Ethiopia's

[15] Other examples of such case studies are Chandra (2013) and Narrainen (2013).

economy grew at a rate second only to China during 2000–10, and it was second to none between 2004 and 2011, when the country's GDP grew at 10.6 percent per year. The LIT policies that the country pursued were based on a strong commitment from the political leadership, especially Prime Minister Meles Zenawi, a veritable scholar who had carefully studied and drawn the lessons of East Asian success; he passed away in 2012 but the late Prime Minister's policies are being continued under his successor.

There is, of course, a lag in the recognition of economic success and Ethiopia's is just beginning to be appreciated, especially with two recent publications, including Oqubay (2015) and Abebe and Schaefer (2015). As Justin Lin comments in his endorsement of Oqubay's volume, "Ethiopia is a development miracle in [the] making …" Be that as it may, the LIT policies it has pursued thus far provide illuminating lessons.

Ethiopia's IP is probably best known for its success in floriculture and leather goods, which is what it began with, but other areas such as textiles and garments as well as wine are also beginning to bloom. Before turning to the better-known first two cases or "islands" on which Ethiopia concentrated initially, it should be noted that the country is also going beyond them to two other areas. Thus, the recently established largest of the Turkish-owned garments and textiles factories employs some 12,000 workers and is expanding; a UK glove manufacturer has established three factories in two years; and in 2014, a winery and vineyard resulting from foreign investment was inaugurated (Oqubay, 2015).

Abebe and Schaefer (2015) have a narrower focus than Oqubay (2015) – concentrating on floriculture and leather processing. These are sectors that have developed rapidly, with a significant overall impact on the economy. Exports of floriculture rose from a minute level of well under US$ 1 million in 1997 to US$ 210 million in 2011. The promotion of leather goods was a slower process and its exports, after rising gradually between 2005 and 2010, are now soaring dramatically, with a major Chinese shoe producer, Huajian, having established a large factory in Ethiopia.[16] By 2014, the factory had already begun to produce some 2,000 pairs of shoes per day for designer labels and employed some 1,600 workers. Huajian is implementing highly ambitious plans to expand its production with the aim of generating US$ 4 billion in annual exports within a decade.

[16] This resulted from a meeting that Zenawi sought with Huajian during his visit to China in 2011.

The expansion of these two sectors alone contributed to a significant transformation of the Ethiopian economy, whose total exports in 2012 amounted to about US$ 3 billion. This is akin to the role of garments in Bangladesh, but the "transformation" is not confined to one sector, as Ethiopia is pursuing more broad-based and deliberate IPs.

One of the key issues of LIT policies concerns how learning comes about. Similar to the case of Bangladesh garments exports that Hosono (2015a) examines – in which Korean firms initially trained many Bangladeshi workers in Korea – Huajian is sending a significant proportion of its local employees for training to its headquarters in China.

According to Abebe and Schaefer (2015), it was easy to pick the floriculture and leather sectors for support as they have "production organizations and technological intensities that suit the labor-abundant-capital-scarce nature of the Ethiopian economy." Both sectors benefitted from a wide range of IP interventions. Abebe and Schaefer's study extricates both the similarities in policy actions as well as how policies were tailored to the specific requirements of each sector. The common elements in the LIT policy support to both sectors that were especially important were (i) access to finance on fairly attractive terms through the Development Bank of Ethiopia,[17] (ii) close government–business consultations, and (iii) flexibility in altering forms and degrees of support.

Regarding the differences in policies towards the two sectors and designing them to deal with sector specific challenges,

> … the following are noteworthy: The leather sector was characterized by the need to overcome coordination failures that required several problems along the value change to be tackled simultaneously to achieve global competitiveness. The dominant challenges in the floriculture sector on the other hand pertained to logistics, land acquisition and initial capital (that needed to be financed at terms that were not too short-term and costly for such investments) (Noman & Stiglitz, 2015b).

In leather manufacturing, the government very actively supported the acquisition of technological capabilities: setting up a leather training institute whose training programs often involved foreign experts, and

[17] Ethiopia is rare in Africa in still having a development bank after the wave of financial liberalization that closed down such banks not only in Africa, but also in many other developing countries.

subsidizing the employment of such experts by domestic firms. The state also provided land and semi-constructed factories as well as basic infrastructural facilities in industrial zones. Tax and regulatory policies used to encourage upgrading included a ban on exports of raw hides and skins, and export taxes on minimally processed low value-added products.

For cut flowers, industrial policies were tailored to provide land at relatively modest prices in proximity of the airport, as well as reliable airfreight services, including the promotion of air-conditioned transport to the airport and coordination with Ethiopian Airlines so that its flight schedule got the flowers to overseas markets, especially Amsterdam, at the appropriate time.

There are clearly many lessons Pakistan can learn from the carefully selective approach with a sharp and narrow focus on particular subsectors, probably no more than one or two to begin with. It should also be noted that Ethiopia's success was based on a substantial improvement in its abysmal physical infrastructure, especially in transport, communications, and energy. This reflected the mobilization and highly effective use of foreign assistance, driven by clearly articulated government priorities as part of the vision that guided its LIT policies.

3.4. Targeting Technological Upgrading

Aside from upgrading the textiles sector, a more general highly promising, low-risk target for LIT policies in Pakistan stems from the fact that the country exhibits one of the largest gaps between "best practice" and "average practice" in productivity and technology, with firms within the same industry often varyingly hugely on this count. This is among the findings of a wide-ranging paper on innovation policy for Pakistan by Speakman et al. (2012).

Speakman et al. demonstrate that there is substantial variation in productivity levels between firms in the same country in a sample of developing countries and that Pakistan is an extreme case: "Pakistan's variability is almost double the next comparator – the Philippines." (The other countries in the sample were Bangladesh, Brazil, Chile, Croatia, India, Indonesia, Mexico, and South Africa). They also find that a "few Pakistani firms" are highly productive and competitive, but the large majority are not – even in the same industry. Spreading the leading firms' technology to those that are far behind is an obvious and enormous opportunity for LIT policies. The costs of discovery have already been

borne with the premier firms having established that it works in Pakistan. Atkin et al. (2014) identify the misalignment of incentives mainly on account of the form of labor contracts that are among the constraints to upgrading to demonstrably profitable technologies.

In terms of policy prescriptions, Speakman et al. (2012) pay much attention to the institutions involved in innovation policy and make a large number of other recommendations based on 12 rather broad policy pillars. They note that the "policy mix required … is a complex interaction of general business-enabling environment reforms, increased competitiveness, key infrastructure investments (mainly in ICT sector), appropriate firm-level support and establishing dynamic relationships between academia, firms and government." They express some support for subsidies for encouraging innovation, albeit in a muted fashion.

With regard to reforms of institutions, or what Speakman et al. (2012) label the "innovation ecosystem", they point to the multiplicity of ineffective institutions that are mainly in the business of paying salaries to their staff and the absence of a "nodal" agency and a coherent policy. Consolidation and reform of this moribund institutional framework is another obvious area for policy attention. Burki (2008) focuses in particular on reform of the Small and Medium Enterprise Development Authority.

In this context, it may well be worthwhile to seek or enhance the assistance of the Japan International Cooperation Agency under its program of support for "Kaizen", which it is expanding and implementing in several countries, including Ethiopia (see Shimada, 2015, for its success in Ethiopia). According to Hosono (2015b), "Kaizen is a Japanese concept which can be translated, literally, as 'improvement' or 'continuous improvement.' It is not easy to define kaizen in a strict sense since it corresponds to evolving initiatives and activities in the quality and productivity area and can very flexibly be adapted to each factory floor's context." Typically, Kaizen involves very little investment, but focuses on raising the productivity of the technology embodied in the pre-existing capital stock.

4. Concluding Comments

The recent revival of focus on the theory and practice of industrial/LIT policy with a mushrooming literature makes a compelling case for paying attention to how such policies can be adapted to the circumstances of a particular country. This paper attempts to do so for Pakistan.

After a quick overview of the new literature, we sketched Pakistan's development story, which saw the country transformed from being among the leaders in growth and LIT policies to a laggard. A combination of the growth momentum of the earlier period of success, some fortuitous circumstances with opportunities for what we refer to as "facile" growth, and expansionary fiscal policies meant that Pakistan was among the world's ten fastest growing economies during 1960–90, albeit at the bottom and not in per capita terms. Its GDP per capita grew at a higher rate than that of any other economy in South Asia during those three decades. However, this was also a period in which the seeds of the subsequent stagnation were sown. Poorly conceived populist policies, including large-scale nationalizations, were mostly reversed in a relatively short period, but the fiscal profligacy of the 1980s necessitated austerity policies, subsequently with public investment in infrastructure bearing the brunt and little room for the big increase in expenditures on human development that Pakistan so badly needs.

Whilst the extent and quality of fiscal adjustment are debatable, that the fiscal legacy of the 1990s constrained economic growth and transformation for a prolonged period that has yet to end is not. Combined with the germination of a politics–governance–security nexus inimical to investment and economic progress, which became increasingly acute, these constraints were reflected in Pakistan becoming the slowest growing economy in South Asia during 1990–2010 with related technological stagnation. An abysmally low investment rate of some 15 percent of GDP both reflected and in turn contributed to the malaise.

We share the view of the broad thrust of several recent calls for the revival of some form of IP in Pakistan as an essential element of economic revival. A number of policy proposals are advanced in this paper, but we noted at the outset that they are predicated on the state becoming less conflicted. By that, we refer not only to the war on terrorism being successfully concluded, but also to a modicum of success in achieving some consensus or consistency regarding economic policy priorities and resolving the conflicts between economic and noneconomic objectives. These include those manifested in the form of rent seeking and whether and to what extent they are good or bad for economic progress. Such conflicts afflict all societies to varying degrees, but they are arguably especially salient for Pakistan at this juncture.

This set of issues is often subsumed under governance, which has been the subject of growing attention, and the emergence of an assortment

of indicators and what has been labeled a "good governance" agenda. While there is no denying the importance of governance, this agenda confuses ends with means and makes the pursuit of the best the enemy of the good. What is feasible and needed is what Khan (2011) calls "growth-enhancing" and Chang (2012) "good-enough governance."

Raising the very low level of investment is likely to depend significantly on that essentially political venture. It is vital if the economy is to break out of its technological stagnation, move to a sustainable higher growth path, and generate adequate employment. Higher investment levels are also, of course, essential both as an instrument and an objective of LIT policies.

One policy action for stimulating investment would be to revive development finance. DFIs played a crucial role in the earlier economic success of Pakistan, but they are at high risk of capture in the light of the subsequent experience with nationalized banks in the 1980s and 1990s. We propose various ways of mitigating those risks, including learning from the experience of successful DFIs in less pristine developmental states than those of East Asia, various ways of making DFI operations transparent and subject to outside scrutiny, and constricting lending to highly selective activities such as technological upgrading.

Naturally, the choice of instruments and scope of LIT policies should depend on the competencies and priorities that underlie governance. This paper identifies the targets and forms of appropriate LIT policies for Pakistan. In terms of targets, there are some obvious ones such as upgrading the textiles sector and narrowing the huge gap between best and average practice in Pakistani firms across the spectrum of industries. There are also several other targets proposed by others that have much merit, e.g., the IT sector and small and medium enterprises in light engineering or becoming subcontractors in international value chains. But the targets have to be chosen with great care, based on analytical work. One promising way of doing so discussed above is that of seeking to identify "latent comparative advantage" along the lines that Justin Lin suggests.

At least as important as identifying the low-hanging fruits – with high rewards in relation to risks – for targets of IP is the approach to designing such policies and their scope. Instead of comprehensive or wide-ranging LIT policies of the classic East Asian variety, this paper proposes a highly selective approach focusing on creating "islands" of success. We

provide notable examples of success with such an "islands" approach, including that of Ethiopia, which has been at the top of the world's growth league in this century. If Ethiopia, starting with much less of an industrial-business class base and weak institutions (especially the bureaucracy), can do it, why can't Pakistan? The answer lies in Pakistan acquiring to some or sufficient degree, the sort of vision and commitment accorded at the highest levels of government in Ethiopia to economic priorities of the sort reflected in its LIT policies. Once upon a time, Pakistan arguably did so.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 59–86

The Missing Economic Magic: The Failure of Trade Liberalization and Exchange Rate Devaluation in Pakistan, 1980–2012

Matthew McCartney[*]

Abstract

Pakistan and India were part of that wave of economic liberalization among developing countries from the late 1980s. This paper is about one aspect of that failure to 'produce the economic magic', in Pakistan. Pakistan substantially liberalized its international trade after the late 1980s, and contrary to some views managed its exchange rate in an exceptionally clear sighted and prudent manner. In response, Pakistan never experienced sustained and rapid export led-growth. In fact so disappointing was the performance of exports that Pakistan's degree of integration with the world economy was little higher in 2015 than it had been in 1990. This paper first examines the exciting promise followed by the lackluster performance of trade liberalization. It establishes evidence that the exchange rate was managed in a way that should have helped a more liberalized trading regime contribute to economic growth. The paper explores wider evidence linking trade liberalization to economic growth and argues that the positive relationship is at best only a contingent one. Those contingent factors that have failed to support the positive link between trade liberalization and economic growth in Pakistan are investment, tax revenue, and upgrading/learning.

Keywords: Trade liberalization, exchange rate, exports, Pakistan.

JEL classification: F19, O49.

1. Introduction

Pakistan and India were part of that wave of economic liberalization among developing countries from the late 1980s. What Bhagwati wrote about India could equally well have referred to Pakistan, if though Pakistan always had a little less state intervention and socialism than India. He wrote that the policy framework in India had stifled efficiency and growth, so while India, like Pakistan, had long maintained a reasonable rate of investment, the former suffered from an enduring problem of low productivity. This, Bhagwati blamed on the "extensive bureaucratic control

[*] Professor, School of Interdisciplinary Area Studies, Oxford University.

over production, investment and trade," "inward-looking trade and foreign investment policies" and the "substantial public sector." Together, the "the deadly combination of industrial licensing and controls at home with import and exchange controls externally, effectively cut off the rigors of competition from all sources and made the creation of a rentier, as against an entrepreneurial, economy more likely" (Bhagwati, 1993, p. 60).

This was essentially an optimistic view. Bhagwati did not blame poor economic performance on any deep and durable determinant of economic growth, such as geography, institutions, colonial history, or culture, but instead on bad policy. And bad policy could be replaced by correct policy, so India (like Pakistan), in the late 1980s, needed "merely an appropriate policy framework to produce the economic magic that Jawaharlal Nehru wished for his compatriots" (Bhagwati, 1993, p. 98).

This paper is about one aspect of that failure to "produce the economic magic" in Pakistan. The country liberalized its international trade substantially after the late 1980s and, contrary to some views, managed its exchange rate in an exceptionally clear-sighted and prudent manner. In response, Pakistan never experienced sustained and rapid export led-growth. In fact, so disappointing was the performance of exports that Pakistan's degree of integration with the world economy was little higher in 2015 than it had been in 1990.

Section 2 first examines the exciting promise, and then the lackluster performance, of trade liberalization. Section 3 establishes evidence that the exchange rate was managed in a way that should have helped a more liberalized trading regime contribute to economic growth. In Section 4, the paper explores wider evidence linking trade liberalization to economic growth, and argues that the positive relation is, at best, only a contingent one. Those contingent factors that have failed to support the positive link between trade liberalization and economic growth in Pakistan are investment, tax revenue, and upgrading/learning. Section 5 concludes the study.

2. The Promise of Trade Liberalization and Outcome in Pakistan

This section first reviews the theory and evidence that import substitution was an unsuccessful economic strategy in the 1950s to 1980s across developing countries. This evidence provided much of the theoretical and empirical rationale for trade liberalization in Pakistan and India and in many other developing countries in the late 1980s and early 1990s. We then review the economic outcome in Pakistan, showing that, despite

undertaking extensive trade liberalization, the outcome was disappointing in terms of economic growth, export growth, and global integration.

2.1. The Promise

The basic trade model, structured around the impact of a tariff on a small developing country, forms the centerpiece of textbook treatments of international trade. The tariff will raise the price of imports and so, domestic consumer prices. Higher prices will encourage more domestic production (import substitution) and reduce domestic consumption. The tariff will raise revenue for the government. The first impact is redistribution from consumers (reduced consumer surplus) to producer profits and to government tax revenue. The second impact is a decline in efficiency as the lure of higher domestic prices/profits draws factors of production (land, labor, and capital) from other sectors to expand production in the now-protected sector.[1] The higher prices/profits received by producers cause them to increase production, using factors that were previously more efficiently employed in other sectors. This is the loss in production efficiency due to the tariff. The higher prices faced by consumers cause them to shift consumption to other goods and services that they preferred not to consume before the price rise. This is the consumption cost due to the tariff. These latter two effects represent pure efficiency losses to the economy as a result of the tariff. The benefit from trade liberalization (removing this tariff) would be a one-off reallocation of resources, removing this source of inefficiency.

Empirical evidence for the inefficiency impact of trade protection dates back to the 1970s and a number of OECD-sponsored studies of developing countries. Pakistan (Lewis, 1970) and India (Bhagwati & Srinivasan, 1975) were key case studies in this empirical effort. The results were drawn together in a summary volume by Little, Scitovsky, and Scott (1970). These studies found that the use of tariffs had, as intended, raised the relative price of industrial output and so motivated a shift of investment from agriculture to industry. These newly emerging industrial sectors were found to be very inefficient since tariffs had simultaneously removed pressures to compete against imports by improving quality or price competitiveness.

The use of overvalued exchange rates to reduce the cost of those imports of capital equipment and inputs necessary to promote industry was a common tool to promote import substitution. This tended to make exports less competitive and biased domestic production to the use of imported –

[1] The basic model assumes these factors of production were fully and efficiently employed before trade protection was imposed. The efficiency implications are less clear if trade protection causes formerly unemployed resources to be drawn into producing substitutes for imports.

and often capital-intensive – production methods. This latter feature led to slow employment growth as employers imported cheap machines to carry out tasks in factories and farms rather than employ people, which reduced the progress of poverty reduction and led to continued import dependence. The use of tariffs, quotas, and licenses to allocate resources replaced the market with a bureaucratic form of allocation and opened up opportunities for corruption in the political and administrative systems.

While the early development economists had focused on market failures as an argument against free trade, they had given no equivalent consideration to the possibility of government failure(s). They seem to have assumed that the state was some sort of selfless guardian that could costlessly intervene to promote import substitution in industry, ignoring the possibility that government failure could be worse than market failure. Decisions on economic policy are made by politicians who respond to political pressures. Using protection to create a new industrial sector automatically creates an interest group with a vested interest in retaining or increasing such assistance and which is unlikely to want any exposure to the perils of foreign competition (Krueger, 1990).

There is general agreement that the measureable benefits from reallocating resources as a consequence of trade liberalization are no more than 2–3 percent of GDP. To these direct costs of government controls or intervention, we then need to add all the resources expended in acquiring, protecting, and expanding the benefits from government intervention that protects against imports (rent seeking). Resources will also have been wasted by individuals who lobbied for, but failed to acquire, rents (Krueger, 1974).

These arguments were certainly influential. There was a general shift toward more open trade regimes the world over. In 1960, 22 percent of all countries (21 percent of the global population) had open trade policies, and by 2000 this had risen to 93 percent of all countries (and 46 percent of the world's population) (Wacziarg & Welch, 2008, p. 187).

2.2. *The Performance*

Beginning in the late 1980s, Pakistan substantially liberalized its economy. These changes sought to increase competitive pressures on incumbents by easing the entry of new producers and encouraging more imports into the country. It was anticipated that this would compel producers to upgrade and become more efficient and so enable them to expand and to export. To this end, trade liberalization, which began in 1987, continued deepening into the 1990s. The number of tariff slabs fell from 14 to 4, and the

maximum tariff fell from 225 percent in 1986/87 to 70 percent in 1994/95 and to 25 percent in 2001/02 (Hasan & Khan, 1994). Liberalization also encompassed the complementary areas of foreign investment (Kemal, 1999, p. 156) and finance (Husain, 2003; Khan, 1999; Zaidi, 2005).

The macroeconomic results were disappointing. GDP growth, which had averaged 6.0 percent between 1961/62 and 1991/92, fell to an average of 4.3 percent between 1992/93 and 2010/11, and this was around a declining trend (Kite & McCartney, in press). The growth of exports matched only this slowing economic growth so that the trade ratio (exports plus imports as a share of GDP) increased from 30.2 percent in 1990/91 to only 32.4 percent in 2008/09 (Pakistan, Ministry of Finance, 2010).

3. Exchange Rates: A Complementary Reform

As part of its efforts to promote domestic industry, for several decades after independence Pakistan maintained a fixed and overvalued exchange rate. The overvalued rate reduced the cost of those imported capital goods and raw materials needed to promote domestic industrialization. The trade balance was preserved by import controls to keep out equivalently cheap consumer goods and also various subsidies to push exports by offsetting the competitive costs of an overvalued exchange rate. Liberalization of those import controls in the late 1980s required an immediate complementary devaluation to prevent a sudden flood of imported consumer goods threatening the viability of domestic production and leading to an unsustainable balance-of-trade deficit. Over the longer term, devaluation was required to raise the competitiveness of exports and shift the economy toward greater export orientation.

Pakistan shifted to a managed float after 1982, which, in practice, meant the central bank intervening to smooth the rate at which the Pakistani rupee depreciated against the US dollar and other currencies; over the next two decades, the rupee depreciated from 10 to 60 to the dollar. There are two requirements for this ongoing depreciation to have had the intended positive impact on increasing (reducing) the competitiveness of exports (imports): (i) the Marshall–Lerner condition and (ii) the distinction between real and nominal devaluation. After discussing these two conditions, this section evaluates the management of the real exchange rate in Pakistan after 1990.

3.1. The Marshall–Lerner Condition

Devaluation will make exports more competitive by reducing their price in foreign markets, which should increase the demand for exports. The

devaluation will simultaneously make imports more expensive, so should reduce the demand for imports. For it to improve the balance of trade, the lower prices of exports must be offset by a higher export volume, and the higher prices of imports must be offset by a lower import volume. The Marshall–Lerner condition states that a devaluation will improve the balance of trade if the sum of foreign elasticity of demand for exports and the home country elasticity of demand for imports is greater than 1.

During the 1960s and 1970s, there was a widespread fear that this condition would not hold for developing countries. These "elasticity pessimists" argued that imports of capital goods, raw materials, petroleum, and food – being necessities for developing countries – would be insensitive to price (a low domestic price elasticity of demand). Moreover, exports of the raw materials typical of developing countries were often fixed in dollar terms in world markets and so, would be unaffected by devaluation (a low foreign price elasticity of demand). There was a shift in perception in the 1980s and the International Monetary Fund (IMF) and World Bank began to consistently demand devaluation as part of structural adjustment packages (Wood, 1991).[2] Some remain pessimists, arguing that the Marshall–Lerner condition does not hold in Pakistan (see Khan, 1994; Shah & Majeed, 2014), but the bulk of the evidence suggests otherwise – for Pakistan between 1972 and 1991 (Hasan & Khan, 1994), between 1980 and 2000 (Aftab & Aurangzeb, 2002), and between 1960 and 2003 (Afzal, 2004); for India (Joshi & Little, 1994); for seven Asian countries, including India and Pakistan (Hsing, 2010); and for both industrial and developing countries (Goldstein & Khan, 1985).

3.2. Real and Nominal Devaluations

Depreciation is most easily measured in nominal terms. We noted in the introduction to this section that the nominal rupee-dollar exchange rate depreciated from PRs 10 to PRs 60 per dollar over two decades. If prices in the domestic currency move to offset some of the change in the exchange rate, the real devaluation will be less than the nominal devaluation. For example, devaluation will raise the cost of imported capital goods and raw materials, and so raise the general costs of production in the domestic economy. Higher prices of imported consumer goods will raise the cost of living for workers and may stimulate demand for higher wages, again increasing costs of

[2] There is wide agreement that devaluation is likely to worsen the trade balance in the short run. Orders for imports and exports are often fixed in advance and it takes time to adjust domestic consumption patterns and production techniques to reduce the demand for imports and, likewise, time for domestic producers to expand production of exportables and substitutes for imports. This implies that price effects will lead to an immediate worsening of the balance of trade and only over time be offset by volume effects: more exports and declining imports. This is known as the J-curve effect.

production and prices in the domestic economy. The extent of this pass-through depends variously on the aggregate dependence of the economy on imports, the ability of workers and firms to defend wages and profit margins, respectively, and the ability of domestic firms to quickly substitute domestic production for more expensive foreign inputs at near-equivalent cost.

There is no evidence for Pakistan that domestic inflation has more than a limited impact in offsetting nominal devaluation. Choudhri and Khan (2002) find that, between 1982 and 1999, consumer prices in Pakistan were not responsive to the exchange rate, and the three occasions of sharp (more than 10 percent) devaluation between these dates had no obvious subsequent impact on inflation. In India, nominal devaluations likewise translate into real devaluations as inflation has little relation with exchange rates (Joshi & Little, 1994).

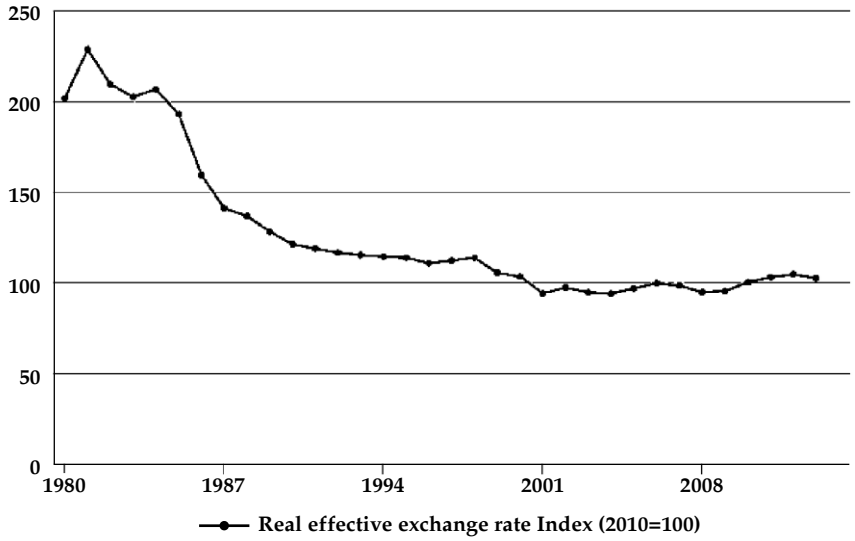
There is good reason to have expected these results. Between 1990 and 2008, imports accounted for only around 19–20 percent of GDP in Pakistan, indicating that devaluation would only have a minor impact on the overall price level (Pakistan, Ministry of Finance, 2010). There is also evidence that real wages have long been flexible in Pakistan, suggesting that depreciation is not generally resisted by higher wage claims (Amsden & van der Hoeven, 1996).

3.3. Evaluation of the Real Exchange Rate after 1990

In 1982, Pakistan switched from a fixed exchange rate to a managed float; this was temporarily suspended during the economic crisis linked to the sanctions imposed for nuclear tests in 1998 and the float was resumed in 2000. Figure 1 below shows the evolution of the real exchange rate in Pakistan over the last three decades or so.

The overvaluation of the very early 1980s was caused by the fixed rate with the dollar; the dollar underwent a massive appreciation on world currency markets after 1980 that pulled up the Pakistani rupee with it. The delinking with the dollar in 1982 saw a sharp depreciation of the Pakistani rupee and its gradual stabilization from the early 1990s to the present day. For the last 20 years, the Pakistani rupee has maintained a stable value by allowing the rate of nominal devaluation on world currency markets to offset the slightly higher domestic inflation in Pakistan that has been typical of its trading partners.

Figure 1: Real exchange rate in Pakistan, 1980–2012



Country: Pakistan
Created from: World Development Indicators
Created on: 03/15/2015

Source: World Bank (2015).

Capital inflows such as foreign direct investment (FDI), remittances, and foreign aid create a demand for the domestic currency, and so are typically found to be associated with a real appreciation of the domestic currency (Amuedo-Dorantes & Pozo, 2004; Janjua, 2007; Elbadawi, Kaltani, & Soto, 2012). Capital inflows into Mexico between 1988 and 1993, and again between 1996 and 2001, for example, caused a 30 percent real appreciation of the Mexican peso in both cases (Ibarra, 2011). After 9/11, Pakistan's decision to ally with the US brought immediate US influence to bear on reducing the former's international debt obligations. In 2001, Pakistan was granted debt relief on US$ 12.5 billion through lower interest rates and longer repayment periods, which saved US$ 1 billion annually in servicing costs. Foreign aid[3] increased from US$ 1 billion to 2 billion per annum in the 1990s to US$ 3 billion in both 2001 and 2002. The global boom of the early to mid-2000s led to even greater capital inflows into Pakistan.

World trade expanded by 0 percent in 2000 and by 10 percent in 2004; exports from Pakistan responded, expanding by 30 percent in 2003/04. Exports, which had been stagnant around US$ 9 billion–10 billion between 1996 and 2000, increased to US$ 15 billion in 2003 and US$ 19 billion in 2007. World FDI flows increased, and those going to Pakistan rose tenfold from

[3] Net official development assistance and official aid received in constant 2011 US$.

US$ 500 million in 2003 to US$ 5 billion in 2007. Migration from Pakistan took advantage of this rapid global growth, in particular professional migrants to the US and construction workers to the Gulf. As a consequence, remittance income to Pakistan increased from US$ 1 billion in 2001 to US$ 11 billion in 2011. This massive surge in various forms of capital inflows was completely offset by the monetary authorities and did not cause the Pakistani rupee to appreciate. The stability of the real exchange rate over 20 years is evidence of a very successful record of monetary management.

A more complex method of evaluating the success of exchange rate management can be achieved by comparing the actual real exchange rate with the underlying fundamental equilibrium exchange rate (FEER). This is defined as an

> … exchange rate that is expected to be indefinitely sustainable on the basis of existing policies. It should therefore be one that is expected to generate a current account surplus or deficit that matches the country's underlying capital flow over the cycle, assuming that the country is pursuing internal balance as well as it can and that it is not restricting trade for balance-of-payments reasons (Cline & Williamson, 2011, p. 2).

This comparison will allow us to observe whether the Pakistani rupee has been maintained at a level that is sustainable and consistent with long-term patterns of import and export growth, capital inflows, and economic growth. The statistical method is quite laborious and involves, first, measuring the real exchange rate[4] and, second, finding those factors with a statistically significant impact on the real exchange rate.

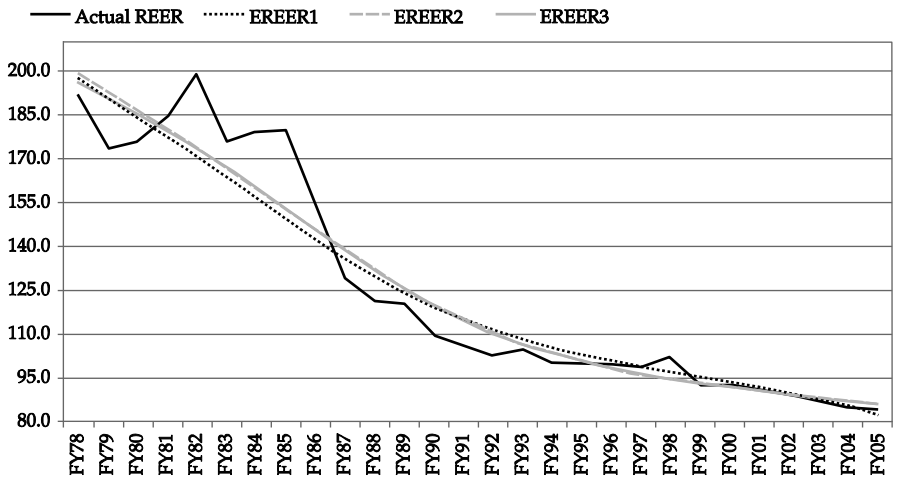
These factors typically include (in this case, measured in Pakistan relative to the rest of the world) technological progress, trade openness, government spending on nontraded and traded goods, external terms of trade, interest rates, and capital inflows such as foreign aid, FDI, and remittances. This is done for a large number of countries across a decent time period. Elbadawi, Kaltani, and Soto (2012) use 82 countries between the years 1980 and 2004. For those variables found to have a statistically significant impact on measures of the real exchange rate, we then need to plug in their estimated sustainable values into the regression equation to

[4] See Wood (1991); White and Wignaraja (1992); Masters and Ianchovichina (1998); Krueger and Chinoy (2004); Qayyum, Khan, and Zaman (2004); Kemal and Qadir (2005); and Carrera and Vergara (2012).

produce an estimate of the FEER at a particular moment in time, and repeat this process over time to produce a time-series estimate of the FEER (Amuedo-Dorantes & Pozo, 2004; Hyder & Mahboob, 2005).[5]

Figure 2 shows a measure of the real exchange rate in Pakistan (the black line) and three estimates of the FEER (the red, green, and blue lines). There was a period of overvaluation in the early 1980s and undervaluation of the Pakistani rupee in the early 1990s. Since about 1990, there have been 15 years of remarkably successful monetary management in which the value of the Pakistani rupee has been held very close to its underlying equilibrium value. There was a small blip in 1998, connected with the nuclear testing sanctions, and no indication of any misalignment despite the massive surge in capital inflows after 2001. Figure 1 above shows some relatively small appreciation of the Pakistani rupee after 2008, which may indicate a degree of overvaluation; this could be verified by extending these FEER calculations.

Figure 2: Misalignment of the real exchange rate



Source: Hyder and Mahboob (2005, p. 17).

4. "I Am Puzzled: Where Has All the Growth Gone?"

Pakistan liberalized its trade regime substantially and managed its exchange rates in the years after 1990 in a way that gave exporters a stable incentive to export. Section 2.2 showed that the growth of the economy and of exports remained disappointing after 1990. So what happened to export growth? Studies of trade liberalization show that it has a more nuanced link

[5] Quite what is a sustainable level of foreign aid, remittances, government spending, and so on, is a subjective estimate dependent on the researcher's model of the world and of Pakistan's economy.

with economic growth than was anticipated in the criticisms of import substitution discussed in Section 2.1.

4.1. Studies of Trade Liberalization

Three-plus decades of global trade liberalization have generated ample data with which to study the impact of trade liberalization on economic and export growth.[6] Dollar (1992) has constructed an index that measures the extent to which the real exchange rate is distorted away from its free-trade level by the trade regime through, for example, import tariffs or export subsidies. He finds that this index has a significant and negative relation with investment and growth, and concludes that, "outward-oriented countries grow more rapidly." However, changes in the real exchange rate due to concerns about a country's debt solvency, for example, would be likely to produce large changes in the index for reasons unrelated to trade policy.

Sachs and Warner's influential index (1995) uses a binary measure that classifies countries as either "open" or "closed." Their index labels countries as "open" if they fulfill five criteria: (i) average tariffs are less than 40 percent; (ii) nontariff barriers cover less than 40 percent of imports; (iii) the country does not have a socialist economic regime; (iv) there is no state monopoly of major exports; and (v) the black market premium on the exchange rate exceeded 20 percent in either the 1970s or 1980s. The index accounts for the difficulty otherwise faced in statistical work that there are different ways to close the economy. The authors show that, between 1970 and 1989, countries passing all five tests had GDP growth 2.5 percent higher than those not passing all five.

This index has been criticized as only two of these variables ("state export monopoly" and "black market premium") explain most of the growth impact of the index, and these variables are, in turn, correlated with other determinants of growth. State export monopolies are closely related to being a country in sub-Saharan Africa, and the black market premium to being a country in Latin America. Therefore, the statistical tests of the index actually conclude that sub-Saharan Africa and Latin America were slow-growing in the 1970s and 1980s and so the index was really a proxy for variables uncorrelated to trade policy (Rodriguez & Rodrik, 1999).

Three studies address these specific empirical problems. The first notes that, despite the problems with methodology, the results of test after test point relentlessly to trade liberalization having a positive effect on

[6] See McCartney (2015, chap. 10) for a more detailed discussion of this debate.

growth (Edwards, 1998). The second improves measures of trade policy (Dollar & Kraay, 2004), and the third corrects many of the problems in the 1995 Sachs and Warner paper (Wacziarg & Welch, 2008).

Edwards (1998) uses nine different indices of trade policy for 93 countries and finds a generally positive link between openness and productivity growth. Dollar and Kraay (2004) make a statistical effort that addresses some of the concerns raised by the critics. A key problem in many studies is that there is no generally accepted measure of trade policy or trade liberalization. Dollar and Kraay use decade-by-decade changes in trade volumes as a proxy for changes in trade policy. Focusing on changes in trade volume means the results are less likely to be driven by fixed geographical factors, such as whether a country is landlocked. They define those countries that cut import tariffs significantly (by 22 percentage points on average) as "globalizers" and the rest (by 11 percentage points on average) as "nonglobalizers." Among the globalizers, GDP growth was 1.7 percent per annum in the 1970s, 2.6 percent in the 1980s, and 5.3 percent in the 1990s. Nonglobalizers experienced –2.8 percent (negative) growth in the 1970s, 0.2 percent in the 1980s, and –0.8 percent (negative again) in the 1990s. This measure is better and the results more convincing, but it is still not ideal. Changes in trade volume can happen for reasons unrelated to policy, such as bad weather reducing output and so, exports of agricultural goods.

Wacziarg and Welch (2008) update the data, method, and results from Sachs and Warner (1995) to present a comprehensive cross-country database of trade indicators (tariffs, nontariff barriers, and other measures of trade restrictions). This new dataset includes more data on nontariff barriers and 30 new countries. The Export Marketing Board variable from Sachs and Warner that was criticized as applying only to African countries is expanded in the new dataset to encompass any form of state monopoly over exporters and so, no longer applies to just African countries. They also extend the Sachs and Warner results on outward orientation and growth into the 1990s. Finally, they identify the changes in growth, investment rates, and openness associated with a significant change in trade policy. They define a date of openness as being that moment after which all the Sachs–Warner openness criteria are continuously fulfilled. Over the entire sample period (1950–1998), Wacziarg and Welch find that the growth of per capita GDP was 2.71 percent in a country with an open trade regime and 1.18 percent in a country without an open trade regime.

The results vary over time. Trade openness in the 1970s has a weaker impact than in the 1980s, and the impact of trade openness is positive, but

only very weakly so, during the 1990s. They also examine how GDP growth and investment rates evolved for 20 years before and after liberalization in a sample of 81 countries that achieved permanent openness. The results show that economic growth increased from 1.5 to 3.0 percent after reforms, and the impact was immediate and persistent. The investment rate took off during the 10 years after openness and remained high thereafter. After separating out other reforms (such as domestic deregulation and privatization), they find that it was trade openness that explained the bulk of the positive impact on growth and investment.

The empirical and case study results generally indicate a positive, if small, but nonrobust and variable link from trade liberalization to economic growth. For Pakistan, studies generally find a positive link between trade liberalization and economic growth (see Iqbal & Zahid, 1998; Ahmad, Alam, & Butt, 2003; Din, Ghani, & Siddique, 2003; Khan & Qayyum, 2007), although some studies find no link (Ahmed, Butt, & Alam, 2000; Akbar & Naqvi 2000). There have been brief interludes when macroeconomic reform has clearly led to rapid export growth, such as after the 1972 devaluation (Kemal & Alvie, 1975) and with stabilization in the early 2000s (Lorie & Iqbal, 2005).

A good reason for this uncertainty is that we are asking the wrong question. Rather than asking if trade liberalization is good for growth, we would be better to ask: under what circumstances is trade liberalization good for growth in Pakistan? There is very good reason to believe that the relationship is a heavily contingent one. Trade liberalization is only likely to be good for growth if there is complementary strategy to promote private investment, if government revenue from trade taxes is adequately replaced from other sources to fund public investment, and if trade liberalization leads to industrial/technological upgrading.

4.2. Trade Liberalization and Investment

Trade policy reform only works to the extent that it motivates entrepreneurs and workers to shift factors of production (land, capital, and labor) away from sectors where they are less productive (import-substitution or nontraded sectors) to more productive (export-oriented or traded) sectors. In the process, there are various adjustment costs such as those of retraining workers or the physical loss of machinery that cannot be converted for production in new sectors. This shift will inevitably require increased investment.

The availability of resources for investment was not a constraint in Pakistan during the 2000s. If savings were scarce and were constraining

investment, we would expect to see high foreign debt or a high current account deficit as signals that the country was drawing resources from elsewhere to compensate for low domestic savings. Or, we would expect to see competition to attract the existing limited pool of savings, leading to high interest rates for depositors or government bondholders. None of these phenomena were evident in Pakistan in the mid-2000s. At around 24 percent of GDP, savings in Pakistan were similar to the rates prevailing in other developing countries. Foreign debt was declining, the current account was showing sharp improvement, and the real interest rate was low or even negative: borrowers were not chasing scarce savers. Investment remained below savings, indicating that banks had a surplus of funds they could have lent for productive use. Investment rates above 30 percent of GDP are typically associated with rapid growth elsewhere in Asia, while investment below 20 percent of GDP characterized Pakistan through much of the 1990s and 2000s.

Section 4.3 shows that reduced and less productive public investment in Pakistan from the early 1990s was in part responsible for stagnating private investment. This section argues that high potential returns to private investment in Pakistan were lost due to a problem of appropriability. After a decade of tax cuts on corporations, high taxation was not appropriating these returns by the mid-2000s. The problem was rather caused by poor property rights and weak contract enforcement. Throughout the 1990s and 2000s, Pakistan had most of the symptoms of low appropriability of returns, which can be easily observed from looking at the various Global Competitiveness Reports produced by the World Economic Forum. Launching a small business was a long, expensive, and cumbersome procedure. A poorly functioning legal system made banks reluctant to lend as they faced a significant default risk from borrowers. Those borrowers could then continue for years until being declared bankrupt by a corrupt and inefficient court system, and be mandated to repay the debt; even then, once assets were scheduled for auction to repay debtors, they would typically disappear. Lending for property in Pakistan was hindered by inefficient, unclear, and frequently disputed rights to land and land titling. The proximate constraint to growth was low investment and its deeper causes lay in the lack of protection afforded to potential investors (McCartney, 2015).

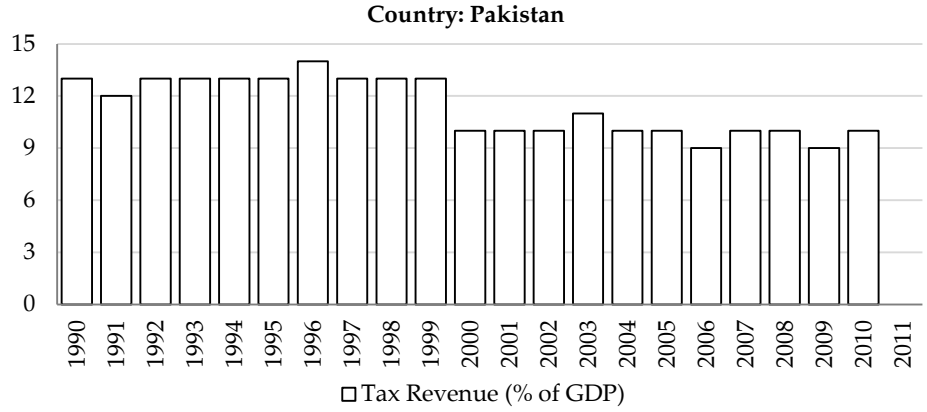
4.3. Trade Liberalization and Government Revenue

This section shows that trade liberalization in Pakistan directly reduced government tax revenue, leading to lower public investment, which, in turn, undermined private investment. This was not surprising:

trade liberalization in a developing country will near inevitably lead to a loss of government revenue and so, force fiscal adjustment elsewhere. The structural features typical of a developing country such as Pakistan include (i) the large, dispersed, low-income subsistence sector in agriculture and small-scale informal sector in urban areas, (ii) the weakness of the tax administration, and (iii) the lack of good accounting systems. Together, these make raising tax revenue from income and consumption taxes very difficult. Imports tend to enter Pakistan through a few ports and airports, and so are easier to collect taxes on than on the millions of income earners or consumers or thousands of (small) businesses (McCartney, 2012).

In the 1990s, trade taxes (predictably) contributed almost 35 percent of tax revenue in low-income countries and less than 1 percent in high-income countries. Between 1970 and the late 1980s shows that developing countries, especially the lowest-income countries, suffered declining tax revenues as a result of trade liberalization, which forced reductions in infrastructure and education spending (Khattry & Rao, 2002; Khattry, 2003). Figure 3 shows that tax revenue has remained low in Pakistan as the government failed to raise revenue elsewhere to compensate for revenue lost from reduced tariffs.

Figure 3: Tax revenues in Pakistan, 1990–2010

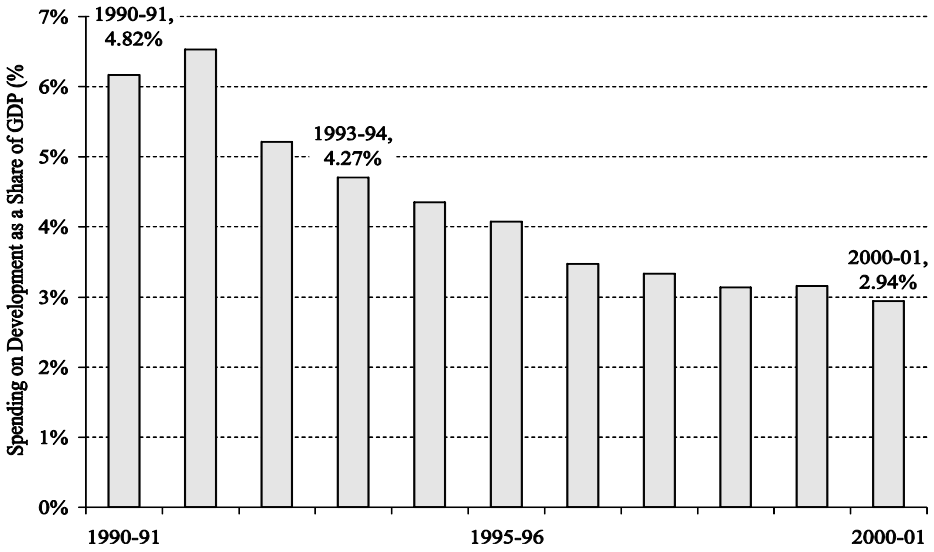


Source: World Bank (2014).

Public investment in complementary sectors such as transport, power, and ports, has been found to have a clear positive impact on crowding in private investment in Pakistan (Ahmed & Qayyum, 2007; Hyder, 2001; Naqvi, 2002). Revenue constraints and simultaneous pressure from the IMF for Pakistan to reduce its budget deficit led directly to the

reduced public investment from the early 1990s shown in Figure 4. This contributed to the stagnation of private investment discussed in Section 4.2.[7]

Figure 4: Spending on development as a percentage of GDP



Source: Fatima and Ahmed (2001, p. 513).

4.4. Trade Liberalization and Technological Upgrading

World trade in textiles and clothing boomed in the 2000s, increasing from US$ 157 billion in 2000 to US$ 250.7 billion in 2010. Textiles remains Pakistan's leading export sector, but performed poorly against this favorable backdrop. Exports from Pakistan of all textiles increased from US$ 11 billion in 2006/07 to only US$ 12.5 billion in 2011/12, and this around a fluctuating rather than rising trend. Domestically, the textiles sector experienced growth of less than 1 percent per annum in 2010/11, 2011/12, and 2012/13.

The technological complexity of Pakistani exports is important as different technology structures have different implications for growth. Demand for high-technology products tends to rise rapidly in world markets (termed a more income-elastic demand), which offers more potential for rapid export growth. High-technology products also offer

[7] There is also evidence that, during the 1990s, both political pressures and cost cutting weakened the institutional capacity for public investment. As a result, the remaining smaller amount of spending on development projects proved considerably less productive. For example, formal approval procedures were often bypassed for work, roads, and energy expenditures. By the end of 1996, this had led to PRs 700 billion worth of questionable projects being started, when only PRs 85 billion–90 billion per year was available to complete them (McCartney, 2011, p. 183).

greater potential for spillover effects in terms of creating new skills and learning. Simple technologies are more vulnerable to being replaced by new technologies and by waves of new lower-wage competitors to the market.

There is strong empirical evidence in support of these arguments. Between 1985 and 1998, world exports of primary products grew by 3.4 percent per annum, low-technology manufactured exports by 9.7 percent, and high-technology manufactures by 13.1 percent (Lall, 2000, p. 344). These differential growth rates resulted in significant changes in the structure of world trade. The share of resource-based exports fell from 23.7 percent of world exports in 1985 to 17.3 percent in 1998; low-technology and medium-technology exports remained stable (18.6 and 18.8 percent, and 40.9 and 38.9 percent, respectively); and high-technology exports increased (from 16.8 to 25.1 percent) (Lall, 2000, p. 351). In Pakistan, the share of (simple) cotton manufactures, leather goods, and rice accounted for two thirds of all exports throughout the 2000s (Pakistan, Ministry of Finance, 2014) and represented a structural impediment to faster export and economic growth.

Textile machinery is easily available in international markets at competitive global prices. Productivity on even standardized machinery varies dramatically: it was four times greater in Mauritius than Ghana in the 1990s, using similar production technology in manufacturing, and for large firms wages were only three times as high. This combination gave Mauritius a significant competitive advantage (Teal, 1999). Thai firms in the 1990s produced three times as much value added from given capital and labor in textiles and food processing than Kenyan firms in the same industries (Zeufack, 2001).

Upgrading requires not just buying, but also, more importantly, learning to use new technologies; this process is often slow, risky, and costly. Learning by doing may imply a lengthy and unpredictable period of losses as firms learn and adapt technology to make it more appropriate to developing-country conditions. Low productivity can also be explained by the lack of knowledge about activities such as managing modern factory layouts, inventory management, sales, and servicing (Khan, 2008).

In theory, private capital markets could spot this potential profit and so, fund firms through the initial period of learning. In practice, uncertainty, risk, and illiquidity mean that private capital is often reluctant. Firms in developing countries may then simply compete on the basis of sweated, unskilled labor and producing simple products more cheaply. This broadly characterizes Pakistan over the last 20 years where low-wage and low-skilled labor produces the two thirds of exports characterized as simple

textiles (and rice) and competes on the basis of low prices. Such a low road of development may be an ideal path for a single firm, but there are likely collective and dynamic benefits from following a high road of competition based on learning, productivity, skills, and upgrading (McCartney, 2011).

Given these market failures, there may be a valid case for government intervention to promote "infant industries." Industries or firms that have the potential to be competitive (the infant can grow up) need nurturing through the process of learning. This nurturing is known as "industrial policy." Protection against imports or the provision of subsidies may give space for firms to learn without facing the potentially destructive consequences of competition from established global producers. Such help may also, perversely, reduce the incentive to learn by removing the pressure of competition. Any such industrial policy must provide offsetting incentives in the form of performance requirements that are carefully monitored and enforced, such as an obligation to meet export targets (Lall, 1992).

A firm could contract with a bank to supply this effort in return for a loan and promise to repay that loan from future profits. In Pakistan, though, there is no credible means to ensure the accurate disclosure of profits or to enforce the rights of banks and shareholders. Calls to better enforce the rule of law, reduce corruption, and increase transparency are at best very long-term solutions and won't help revive economic growth or upgrade the structure of exports in the next few years.

Another solution would be to provide a direct subsidy on the cost of acquiring technologies. The 2005/06 budget in India established a Technology Upgradation Fund to invest US$ 700 million in the textiles sector. This fund aimed to encourage the private sector to set up world-class integrated textile complexes by helping finance investment in 50,000 shuttleless looms and modernizing 250,000 power looms. Under the fund, manufacturing firms became eligible for long- and medium-term loans from state banks at an interest rate 5 percent lower than the normal bank lending rates. Imports of textile machinery items and raw materials, and of parts for manufacture of such machinery were permitted at concessional customs duty.

The Textiles Policy 2009–14 produced by the Ministry of Textiles in Pakistan was a similar effort, though much broader in its ambition. The policy recognized many of the constraints faced by the textiles industry, such as the lack of adequate infrastructure facilities, availability of land and skilled labor, and the regulatory framework that imposed excessive burdens on business. However, the plan lacked any kind of clear focus. In fact, it was less a plan than a long list of aspirations: to develop state-of-the-art

infrastructure; to increase the supply of skilled labor; to legislate for higher standards of production at each stage of processing; to promote research and development to achieve product diversification; to increase productivity throughout the value chain (especially the quality and diversity of fibers); to support the development of allied industry such as machinery manufacturing, dyes, and chemical industry and accessories; and to encourage exports. This effort was costed at US$ 8 billion, but the policy subsequently fizzled out in consequence of its unclear objectives and in response to IMF pressures to reduce public spending.

5. Conclusion

This paper started optimistically enough and faded away. It began by looking at the promise of trade liberalization – the idea that policy liberalization could energize economic and export growth. It was an optimistic idea compared to, say, Diamond (1998), who argues that contemporary income differentials in the global economy were largely determined by environmental and geographical factors in 11000 BCE. But the promised economic magic never happened in Pakistan: with extensive trade and domestic liberalization went slower economic growth. This is surprising. The often-blamed culprit of poorly managed or overvalued exchange rates undermining the benefits of trade liberalization was innocent in this case.

In fact, Pakistan managed its exchange rate in an exceptionally clear-sighted and prudent manner.[8] A close examination of some of the seminal works exploring the link between trade liberalization and growth shows them to all have methodological problems: in particular, how does one measure "trade liberalization" for the purposes of statistical testing? But their results tend to be far less robust, more varied, and less predictable than strong advocates of free trade allow for. The relation is, at best, only a contingent one. This paper has argued that trade liberalization only works when (i) it is supported by a strategy to promote private investment, (ii) government finances are protected from revenue loss due to trade liberalization in order to finance the necessary public investment, and (iii) firms overcome learning failures in the use of new technology to upgrade and experience export-led economic growth.

[8] The data discussed in this paper extends up to 2012; over the last couple of years, IMF staff have "stressed that the recent appreciation of the dollar against other currencies, the lack of downward exchange rate flexibility, and a high inflation differential relative to trading partners has caused a further loss of Pakistan's export competitiveness in world markets" (IMF, 2015, p. 12). Such a localized appreciation can be easily missed when graphing time-series evidence over several decades. This recent concern needs a much more focused analysis than the broader scope of this paper has allowed – thanks to Alan Whitworth of DFID Pakistan for drawing my attention to this recent evidence.

Understanding why trade liberalization failed to generate export growth is not the end of the analysis. Identifying a problem is not the same as identifying a policy reform or solution. The deep factors explaining why investors cannot appropriate returns are not amenable to quick solutions. Poorly protected property rights can confer enormous benefits on the powerful or politically well connected who can derive incomes through predation, bribery, or confiscation. The big lesson from Acemoglu and Robinson's (2012) book, *Why Nations Fail*, is that "bad" (or what they term "extractive") institutions are likely to persist if they can be used by elites to extract resources for their own benefit. Those resources will in turn provide the incentives and material capacity to organize, mobilize, and control political power to sustain the bad institutions and so, ensure that their elite status is perpetuated. Bad institutions create extractive elites who, in turn, support bad institutions in the form of a vicious circle.

Prosperity, argue Acemoglu and Robinson, requires that institutions be transformed from extractive to inclusive, and this is not easy. It took what Chang (2002) described as the "long and winding road" of institutional development, which took "decades" in Western Europe. There is no evidence that Pakistan is turning a vicious circle into a virtuous one by creating those state institutions necessary to protect property rights, raise tax revenue, or pursue an effective industrial policy. The Global Competitiveness Reports compile various indices that proxy different aspects of governance; the indices range from 1 to 7 (7 being the best). Table 1 compares the reports from 2006/07 and 2014/15 and finds a widespread deterioration in state capacity, across the quality of institutions, favoritism in government decision making, wastefulness in government spending, and low and stagnant measures of the reliability of the police.

Table 1: Declining state capacity in India and Pakistan

Measure of governance	2006/07	2014/15
Quality of institutions	3.5	3.2
Favoritism shown in decisions of government officials	3.1	2.6
Wastefulness of government spending	3.5	2.6
Reliability of police	3.1	3.1

Source: World Economic Forum (2006, 2014).

Industrial policy worked in South Korea because it had a "developmental state." A developmental state is defined as one "whose politics have concentrated sufficient power, autonomy and capacity at the center to shape, pursue and encourage the achievement of explicit

development objectives, whether by establishing and promoting the conditions and direction of economic growth, or by organizing it directly, or by a varying combination of both" (Leftwich, 1995, p. 401).

The following components determine these political pre-conditions: (i) a small elite of developmentally-determined senior politicians, (ii) autonomy of the state from special interest groups, (iii) a competent bureaucracy insulated from the demands of politics, (iv) a weak civil society/independence from international capital and rural interests, and (v) legitimacy given by the populace to a single-minded approach to economic growth (Leftwich, 1995). There is no prospect of a developmental state emerging in Pakistan and so any comparison with – and especially calls to emulate – South Korea are nonsensical.

Combined with the pessimistic views in this paper on the failure of trade liberalization and devaluation to boost exports is the finding of a strong relation between income growth in Pakistan and imports (Hasan & Khan, 1994; Atique & Ahmad, 2003; Shah & Majeed, 2014). Felipe, McCombie, and Naqvi (2009) find that GDP growth greater than 5 percent per annum is likely to lead to a surge in imports and a balance-of-payments crisis. Pakistan is indeed caught in a dilemma: the 7–8 percent growth necessary for poverty reduction and structural transformation will lead to an inevitable external crisis unless the rate of export growth can be significantly stepped up.

While there is much reason to be pessimistic, there is also some reason to hope. This paper is a big-picture companion piece to a more specific argument in McCartney (2014). This earlier paper made a case for a particular and targeted form of industrial policy to promote learning and upgrading in Pakistan's textiles industry. It argued optimistically that some factors commonly seen as hindering industrial policy – competition from China, the global rules of globalization, global value chains, and the problems of energy and education in Pakistan – do need careful consideration, but are not insurmountable obstacles to industrial upgrading.

The study then went on to examine a very particular market failure that it argued policy intervention could usefully focus on – that of the risk and uncertainty associated with acquiring and learning to use new technology. The paper was careful to draw its policy lessons from an example that provides a realistic and practical option for Pakistan to emulate – not South Korea or India, but instead Bangladesh. This lesson showed that rapid and sustainable export growth in textiles can be achieved even in an economy with weak, corrupt, and unstable governance.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 87–106

Theory at Odds with Best Practice: The Travails of Industrial Policy

Irfan ul Haque*

Abstract

The problems that afflict Pakistan's manufacturing sector are widely known. It is also recognized that the current state of affairs must change, but there is little agreement as to what that might entail. The lack of consensus on required actions and policies can be traced back to the end of the era of rapid industrialization in the late 1960s and subsequent withering away of the "developmental state" as Pakistan could then be characterized. The industry's woes tend to be attributed to import substitution and high protection, with the policy implication that the country must further open up and liberalize. The paper questions this proposition and argues for a fresh approach to industrial policy, exploring what this might involve.

Keywords: Manufacturing, industrial policy, Pakistan.

JEL classification: L52.

1. Introduction

There is no other field of economics that generates more heat and controversy than industrial policy. The divergence of viewpoints on what is wrong with Pakistani industry and what ought to be done is evident among professional economists as well as policymaking circles. These differences have a long history and arise out of conflicting notions regarding industrial development and the role the government might play in promoting it. In an earlier paper, I have sought to show why industrial policy was required to promote international competitiveness and robust export growth in Pakistan (Haque, 2014). This paper takes the desirability and need for an articulated and coherent industrial policy as a premise, but goes forward in identifying the priority areas the country's policymakers should consider in designing one.

* The author is an unaffiliated researcher who has worked for the World Bank, South Centre, and UNCTAD. He wishes to thank Rashid Amjad, Shahid Amjad Chaudhry, Khalil Hamdani, and Akbar Noman for their perceptive and helpful comments on an earlier draft.

2. Origins of Pakistan's Manufacturing

The rise of manufacturing is usually associated with domestic as well as international tensions. Domestically, new industry is perceived to upset the established rural-urban order, as the political balance shifts from the feudalists to the emerging class of industrialists. Internationally, existing producers react to the competition from new, emerging industrial centers with apprehension as specialization and trading patterns undergo profound changes. The emergence of new sources of manufactures is often taken as an outcome of unfair, even illegitimate, government practices involving commercial policy and currency manipulation.

Such tensions were evident in 19th century England when the new class of industrialists succeeded in having the ancient Corn Laws removed, thereby ending the protection that agriculture had hitherto enjoyed. Although less well known, the American Civil War too was in part a battle over differential government protection between the industrial North and the agricultural South (Chang, 2002). Economic rivalry among European countries over the capture of markets and access to sources of raw materials often led to war. Today's persisting tensions in the world economy are, at the bottom, a contest over control of resources and markets and disputes over whether governments are playing by the "rules."

Given this history, Pakistan's somewhat tortured struggle for industrial development is neither exceptional nor surprising. At the time of independence in 1947, the country's industry was rudimentary and mostly small-scale, while banking and insurance were largely in foreign hands. The initial motivation to industrialize arose out of a concern over the new nation's survival in the face of economically and militarily dominant India. Pakistan, by and large agricultural, produced jute in what was then East Pakistan and cotton in West Pakistan, while the factories processing these raw materials into manufactured products were mostly in India. Although self-sufficient in food, its agriculture too depended on rivers flowing out of the neighbor's territory. This dependency made Pakistan – certainly, in perception – fragile and vulnerable, and influenced the country's choices and actions with respect to industrial development.

Commercial relations between the neighbors received a serious blow when Pakistan, by design or out of perversity (as many then maintained), chose not to devalue the Pakistani rupee in 1949 along with

the British pound and other Sterling Area currencies. India was particularly annoyed because it now faced higher prices for its raw materials from Pakistan, even as it benefited from improved competitiveness. For this, Pakistan was duly punished with the suspension of imports of raw jute and cotton. This added to the imperative that the country should industrialize, and investments in jute and cotton mills began.

In short, Pakistan's early industrialization was essentially reactive, not born out of a grand vision of turning the country into an industrial power, as was the case in India and many other developing and socialist countries at the time. Pakistan adopted five-year plans, but its approach to economic development remained more or less ad hoc, eclectic, nonideological, and nonstrategic, fashioning policies and approaches "on the fly," as it were. A concerted effort at industrialization was, however, made during the early years, as commercial policy was directed at promoting manufacturing and institutions were established specifically to help finance and develop industry.

3. Pakistan's Industrialization and its Detractors

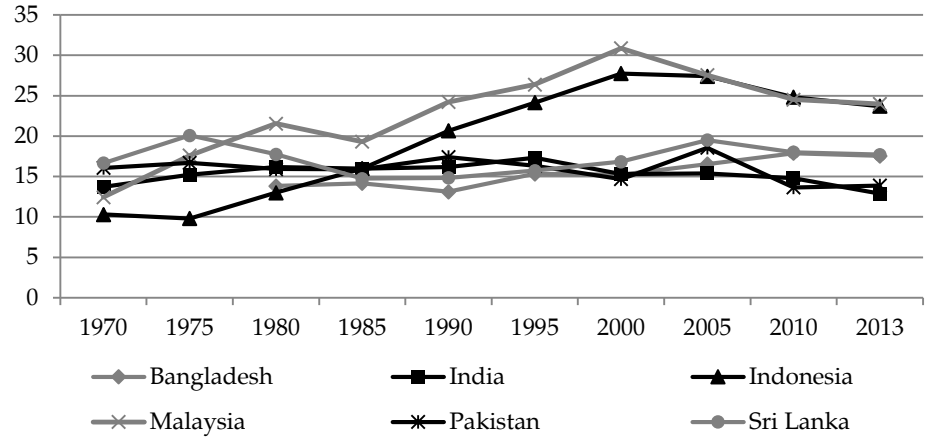
The pace of industrialization in the first two decades of independence was impressive; new domestic industries rose and a class of Pakistani entrepreneurs emerged. Starting from a very small base, manufacturing value added grew rapidly, reaching 8 percent a year in the 1950s and about 10 percent in the 1960s. The growth rate was highest during 1960–65, before falling sharply in the aftermath of the 1965 war with India (which included suspension of foreign aid) and mounting domestic unrest against the Ayub regime.

During the period of high growth, the government – as was common then – relied on high tariffs accompanied by direct controls over imports, prices, and investment to achieve its economic goals. However, the Ayub government also took steps to streamline and rationalize the policy regime with the specific aim of improving economic performance, especially in manufacturing. The import of raw materials was liberalized and exports were promoted through a variety of measures – notably, the Export Bonus Scheme – but also fiscal incentives, offering tax rebates, tax holidays, and accelerated depreciation allowances. The government also introduced export performance licensing and pay-as-you-earn schemes (Kemal, 2006).

Pakistan's ability to achieve high economic growth came to be seen by the US and international financing agencies as a model that other developing countries could emulate. An official Korean delegation even visited the country in 1962 to learn from its development experience. Since those heady days, however, the pace of industrialization, and economic performance generally, has remained lackluster, leaving aside short-lived spurts in growth during the 1980s and 2000s.

Five decades ago, Pakistan's per capita income and other development indicators were roughly comparable with those of the East Asian economies. Today, it lags far behind on virtually all measures. Despite years of industrialization, manufacturing still accounts for less than 15 percent of GDP, compared to roughly 25 percent in Malaysia and Indonesia (Figure 1).

Figure 1: Manufacturing as a percentage of GDP, South Asia



Source: World Development Indicators (http://data.worldbank.org/data-catalog/world-development-indicators).

However, in this respect, the other South Asian economies do not seem to have done much better. India's rapid economic growth over the last two decades was not driven by manufacturing; in fact, the share of manufacturing in GDP fell to 13 percent in 2013 – the lowest in the region. The current Modi government is sufficiently concerned about lagging manufacturing to have launched a "Make in India" campaign. Sri Lanka's manufacturing sector just about kept pace with economic growth, notwithstanding the peaks reached in the mid-1970s and again in 2005. Bangladesh is the only country where the share of manufacturing rose more or less steadily.

Pakistan's general economic malaise is captured in poor manufacturing growth, low and lagging productivity, lack of competitiveness, little diversification in manufacturing or exports, and generally low-technology industry. Explaining what brought about this state of affairs is, however, complex and contentious. As in other countries and contexts, the experts' "default" position has been to blame high protection and import substitution industrialization for industry's failures. This has been critics' standard refrain for the past 50 years, not just with respect to Pakistan, but also for developing countries generally.

Industry had barely taken root in Pakistan when research studies (mostly by foreign scholars) brought out that its industry benefited from very high rates of "effective" protection and that domestic value added, when calculated in terms of "international" prices, was low or negative in key industries. In other words, the new industry in Pakistan was a waste of resources and the government's efforts at industrial promotion misguided. Prominent among these studies were Soligo and Stern (1965) and Lewis and Guisinger (1968), although subsequently Pakistani researchers too undertook similar exercises – notably, Kemal (1978) and Naqvi and Kemal (1983) – with broadly similar conclusions. A few Pakistani researchers challenged these findings and argued that the alleged inefficiencies of Pakistan's industry were much exaggerated (see, for example, Noman, 1991), but the dominant narrative remained untrammelled.

The preoccupation with protection and import substitution has not abated, and recent studies have continued to assert the harm this has done to the country (see, for example, Kemal, 2006; Hussain & Ahmed, 2011; Pursell, Khan, & Gulzar, 2011). The late Dr A. R. Kemal identified import substitution as the source of virtually all the ills plaguing Pakistan's industry. He observed (p. 50, 2006):

> Low quality of products, lack of standardization, low value added products [are] sold without any brand names, lack of innovation, and low levels of productivity are *the legacy of import substitution industrialization* and indicate the need for *major restructuring* of the manufacturing sector [emphases added].

He further noted (p. 55):

> While trade policy reforms in recent years have exposed domestic enterprises to international competition, these

> enterprises continue to suffer from *the legacy of import substitution* and have yet to reposition themselves to compete effectively in the global market [emphases added].

The policy conclusion of this diagnosis would appear to be: remove protection and liberalize foreign trade. The conviction that protection and import substitution are plainly bad for a country is widely shared, but remains questionable in terms of both theory and empirical evidence. The theory maintains that economic transformation, i.e., import substitution, occurs as countries attempt to catch up with the more advanced economies and build up their capital, technology, and skills.

This process inevitably entails mimicking advanced countries by replacing previously imported goods with domestic production. In other words, import substitution is bound up with industrialization and economic growth. Even within the narrow confines of the neoclassical model of international trade, accumulation of the relatively scarce factor leads to increased domestic production of the importables. Thus, import substitution is neither inherently inefficient nor inconsistent with theory.

Pakistan's industrialization was not overly dependent on import substitution. Kemal's own data (2006, table 3) show that the contribution of import substitution (however measured) to the overall growth of manufacturing was quite high in the early phase of industrialization, but became negligible or even negative after the late 1980s. This suggests that the "legacy of import substitution" – such as it was – dissipated over time. Pakistan's early industrial development was not too different from that of other developing countries in that it concentrated on setting up light consumer goods industry based on domestic raw materials as well as basic chemicals and building materials (fertilizer, cement, etc.). These product lines were promoted on the grounds that they either enhanced foreign exchange earnings through greater domestic value addition or saved foreign exchange by replacing imports.

That Pakistan's economy has been exceptionally protected or that high protection was the principal cause of industrial inefficiencies are also doubtful propositions. For one thing, measures of "effective" protection suffer from highly shaky foundations, given the serious snags in estimating reliable input-output ratios at a sufficiently disaggregated level, international prices, and appropriate exchange rates, which are required to

measure effective protection rates.[1] They are, at best, guesstimates, not to be trusted for diagnostics or as a policy guide. Thus, while the inefficiencies of Pakistan's industry are well known, it is less clear that protection was their main cause and its removal the key remedy.

Pakistan compares rather favorably with India when nontariff barriers are taken into account, and yet the latter's economic performance in recent years has been far superior to that of Pakistan (Pasha & Imran, 2012). A recent World Bank (2013) report notes:

> Although India has steadily opened up its economy, its tariffs continue to be high when compared with other countries, and its investment norms are still restrictive. This leads some to see India as a 'rapid globalizer' while others still see it as a 'highly protectionist' economy. […] India however retains its right to protect when need arises. Agricultural tariffs average between 30–40 percent, anti-dumping measures have been liberally used to protect trade, and the country is among the few in the world that continue to ban foreign investment in retail trade. Although this policy has been somewhat relaxed recently, it remains considerably restrictive.

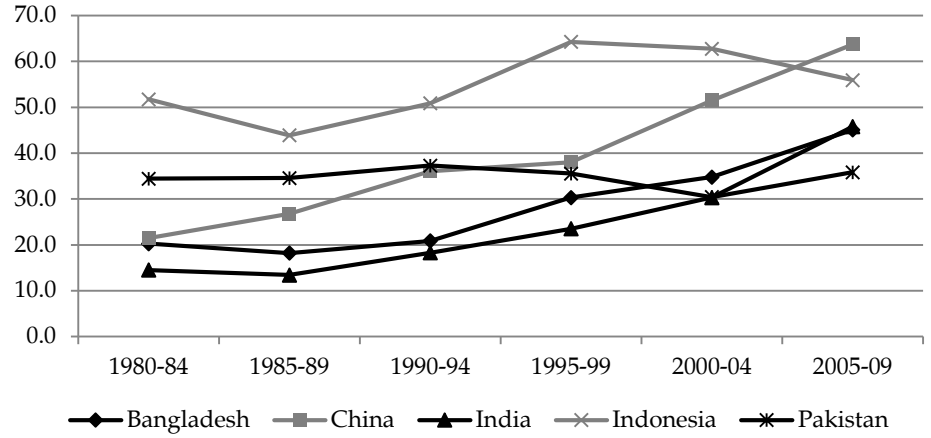
Statutory regulatory orders (SROs) have also been identified as arbitrary, opaque devices that undermine trade liberalization. However, while they may not be an efficient or objective means of helping individual industries or firms, there is not much evidence to suggest that they have been systematically protectionist. A recent study reports that, in some cases, SROs served to raise import tariffs, but these were mostly related to exempting producers from the payment of import duties (Pursell et al., 2011).

If openness is measured in terms of the trade/GDP ratio, Pakistan again appears to have been no more closed than some of its neighbors (Figure 2). Until the mid-1990s, Pakistan was significantly more open than China, India, or Bangladesh, though less so than Indonesia. The subsequent fall in this ratio was not due to increased protection – the country was engaged in trade liberalization at the time – but a result of the sharp fall in imports due to severe foreign exchange shortages and the

[1] Noman (1991) identifies other deficiencies in the measure of effective protection, notably, firms' tendency to underreport output and over-report inputs in order to lower reported profits and thereby reduce payment of excise and sales taxes.

collapse of economic growth following the nuclear tests of 1998 and the suspension of foreign aid.

Figure 2: Trade as a percentage of GDP



Source: World Development Indicators (http://data.worldbank.org/data-catalog/world-development-indicators).

All this is not meant to deny the benefits of openness, which include a country gaining access to products not produced domestically and to new technologies, while exposing its domestic firms to world competition. When protection is of autarkic proportions – as was the case in the Soviet Union or virtually so in India during 1950–80 – economic growth may be stifled and the economic cost of closure to trade can be exorbitant. Import liberalization in such situations is inevitably beneficial. Then, also, countries' trade regimes often suffer from inefficiencies: notably, redundant and overlapping import restrictions, and complicated rules and regulations governing foreign trade. Pursell et al. (2011) describe how such problems afflict Pakistan. Here, too, the rationalization of trade policy could be expected to yield quick and sizeable dividends.

What is being questioned here is the tendency to exaggerate the impact of trade policy on a country's manufacturing performance, something for which the proponents of both free trade and protection have shown a weakness. One group counts on trade liberalization to bring about efficiency and economic growth, while the other argues equally fervently that the nascent industry's survival depends on protection. The reality is that industrial performance depends on a range of factors that tend either to be overlooked or not given sufficient importance, as was the case in most policy reform programs undertaken

with or without the support of the World Bank and other international development agencies.

Thus, there have been cases of industrialization failure under protectionist regimes as well as collapsing industries following import liberalization. Pakistan's experience is testimony to this: trade liberalization since the 1990s has done little to improve industrial efficiency or raise economic growth. Pakistan entered into a bilateral trade agreement with China in 2007 that greatly improved market access for Chinese exports, but did little to improve Pakistan's industrial competitiveness (Haque, 2009). Generally, there is little evidence that more open economies tend systematically to do better than less open ones, or that the latter start performing better post-trade liberalization. The important exception is when the opening up forms part of a broader program of industrial restructuring and policy reform, as was the case, for example, in China during the 1980s.

Given evolving trading patterns and the changing basis of specialization, import substitution cannot be dismissed simply because it violates a country's given "comparative advantage" (Haque, 2014). The process of trade liberalization and the rise of China and other low-cost producers in world trade have, today, reduced Pakistan to importing products it used to produce and even export. This happened because other countries started to produce more competitively products they had previously imported. There is no reason why, under proper conditions, Pakistan too cannot recapture its competitive edge and replace current imports with domestic production. A serious blunder on the part of Pakistani policymakers and private industry was their failure to heed the new trade winds: little was done to meet the challenges and take advantage of the opportunities they presented to the country.

4. Travails of Industrial Policy

In the first two decades following independence, but mainly under the Ayub regime, Pakistan could be said to approximate a "developmental state." The government's proactive role in promoting economic development was widely accepted and the economy's performance – particularly in agriculture and industry – was held to be critical to its popularity, even legitimacy. However, in the late 1960s, even as the economy continued to grow, discontent increased with the rising income disparities between the country's two wings as well as across income classes. As the struggle for independence intensified in what was then East

Pakistan, the country's leading economists, including one who could reasonably take credit for the successes of the Ayub regime,[2] raised alarm at the increasing concentration of wealth among the so-called "22 families."

Naseemullah and Arnold (2015) maintain that Pakistan fulfilled the basic preconditions of a developmental state during the early decades. For one, as in the case of Korea and Taiwan, the compulsion to industrialize was driven by a sense of "systemic vulnerability" in the absence of adequate and dependable rentier income "that could both fund defense spending and buy off key constituencies" (p. 8). For another, the country had a bureaucracy that was able to co-opt the private sector into investing in Pakistan's future and hold it – albeit not systematically or consistently – accountable for its performance in exchange for special fiscal and commercial policy concessions. This was when the Pakistani civil service, with occasional support from the army, virtually ran the country and managed the economy while the country's politicians were entangled in fights over constitutional questions and interpersonal rivalries.

Rodrik (2004, p. 3) underscores the "need to embed private initiative in a framework of public action that encourages restructuring, diversification, and technological dynamism beyond what market forces on their own would generate." Pakistan more or less met this requirement. Naseemullah and Arnold (2015, p. 10) observe that, "autonomy and embeddedness were virtually guaranteed by the fact that bureaucracies [in Pakistan and Turkey] essentially created cohesive industrial bourgeoisies out of a disparate set of traders and merchants." But unlike Korea and Taiwan, the developmental state in Pakistan started to wither after the 1960s – a phenomenon the authors describe as being a failure of "the politics of developmental persistence" (p. 4). They go on to say: "The continuing consensus behind industrialization led Korea and Taiwan to maintain commitments to industrial investment and upgrade successfully, whereas fragmentation of support in Pakistan … led to challenges to extant industry that prevented such upgrading" (p. 14).

[2] The late Dr Mahbub ul Haq, who was chief economist at the Pakistan Planning Commission during the 1960s, proclaimed in a speech in 1968 that 22 industrial family groups had come to dominate the country's economic and financial life: they controlled about two thirds of industrial assets, 80 percent of banking, and 79 percent of insurance. However, a few years later, he offered a more nuanced assessment of the situation: "The slogan of 22 families … has been rather overdone in Pakistan and taken too literally. At times, it has become a convenient camouflage for action against a few individual industrialists rather than reforming the economic as well as social and political institutions. This is sad because the 22 families are a symptom, not a cause. The basic problem is not the 22 families, individually or collectively, but the system that created them" (Haq, 1973).

The fall of the Ayub regime and the abject end to the "Decade of Progress" dealt a serious blow to the developmental state in Pakistan. The final nail in the coffin was, ironically, the nationalization of industry and banking under the Bhutto government in the early 1970s.[3] A step that might have been a pillar of an activist state ended up causing capital to take flight, and private capital has, to this day, not quite forgotten or forgiven that instance of government heavy-handedness.

The nationalization, which was a key part of the Pakistan People's Party's agenda and vision for the country, fell victim to political opportunism and personalized attacks on the industrialist class. Its scope was subsequently widened beyond what was originally envisaged with little regard for the longer-term consequences for industrial development. The other target of Bhutto's government was the civil service itself, which, over time, was also made to lose its aura and authority in running the country. At a time when a strong bureaucracy could have been useful to ensure the viability of the nationalized industries, government institutions in charge of economic policy were allowed to weaken. Thus, the Planning Commission and other government agencies witnessed an exodus of several key experts for greener pastures, notably the World Bank and IMF.

The tide of neoliberalism during the 1980s, which Pakistan embraced readily and uncritically, made the government's active promotion of industrialization something undesirable, though individual businesses continued to receive government largesse in one form or another. Over time, the state institutions supporting industrialization were made powerless or allowed to wind up. This happened when world trade in manufactures was undergoing a profound change, trading relations were being redefined, and new opportunities for specialization were opening up. New technologies and management practices as well as the rise of global value chains made labor intensity in manufacturing less and less significant as a basis of competitiveness or specialization. The outsourcing of manufacturing production and deindustrialization of the industrialized world was the flip side of these developments.

Under these conditions, the traditional notion of comparative advantage based on relative factor endowments – always questionable – could provide little policy guidance. The countries that were able to take

[3] The Green Revolution also helped strengthen the feudal elites – who had been upset at Ayub Khan's rather modest land reforms of the early 1960s – relative to the industrial class, which arguably made Bhutto's nationalization of industry politically easier.

advantage of these developments – virtually all in East Asia – did so under state guidance and support, which was required for the purpose of coordinating investments, encouraging innovation, adopting new technology, promoting industrial upgrading, and generally helping domestic firms to remain competitive and become strategic links in the global value chains. With the government's effectively hands-off approach to industrialization, it is no wonder that Pakistan was more or less left out of the historic transformation of the world economy and, today, finds itself stuck in producing low-technology, low value-added, labor-intensive products.

In brief, Pakistan has much catching up to do, which would require a serious, concerted effort to revive manufacturing. Few countries, it seems, have done without industrial policy. Rodrik (2004) observes that, "industrial policies have run rampant during the last two decades" (p. 29). While this suggests that industrial policy is back in vogue following the cold winter of neoliberalism, there remain different notions as to what it means and involves.

Countries routinely use regulations, credit policy, fiscal incentives, or even protective tariffs to help or punish industries or firms, but these measures may not constitute a coherent program of industrial promotion and development. It was this that distinguished the East Asian economies and several others (including, to some extent, Pakistan) that adopted policies with the specific purpose of promoting rapid industrialization, before neoliberalism rendered such policies anathema. With this background, the paper concludes by exploring how Pakistan might change course and devise a spelled-out approach to promoting and reviving manufacturing.

5. Pakistan's Policy Challenge

Government policies need to be made within a framework or a program for industrial promotion, but this is possible only if there is a measure of agreement within the country on the government's role, the need for disciplining markets, and the direction industrialization should take. Major economic reforms are practically impossible when the government's role in designing regulatory rules, redistributing income, and mobilizing and directing investment for longer-term growth remains in doubt. Unfortunately, as in other domains of public policy, views in Pakistan are deeply divided, not just professional opinion, but also among government departments. In discussing the "disharmony and

conflicting opinions of Pakistan's policymaking institutions," Hussain and Ahmed (2011) observe:

> The imperative need for industrialization is the view of the ministry of industries and production (MOIP) in Pakistan as well as that of the new growth strategy initiated by the Planning Commission and the authors of this paper. However, the point of controversy is the way this may be achieved. The MOIP believes Pakistan's industries need to be protected for the same reason this paper advocates that a level playing field should be created; i.e. to develop a vibrant industry (p. 2).

Although inter-departmental differences are not unusual or necessarily damaging, Pakistan's current economic leadership is not strong enough or sufficiently clear about its priorities to resolve them. Virtually all examples of successful economic reforms and transformation come from countries that had strong leaders committed to improving economic performance: Park in South Korea, Mahathir in Malaysia, Suharto in Indonesia, Lee Kwan Yew in Singapore, Deng in China and, more controversially, Manmohan Singh in India. Ayub Khan, too, could have been counted among these leaders but for the fact that his legacy was too short-lived. Given the current leadership vacuum, it is difficult to be optimistic about Pakistan being able to devise and adopt a coherent and spelled-out program to promote manufacturing. Still, it is useful to explore what that might be.

A recent report by Sanchez-Triana et al. (2014) on revitalizing industrial growth in Pakistan identifies various steps that the country needs to take to improve its manufacturing performance. It recommends infrastructure development, adopting green technologies to cope with climate change, taking advantage of opportunities in rural-urban migration, undertaking trade policy reform and, not least, pursuing skills development. In answering the question, how this industrial growth might be stimulated, the report has this to say (p. xi):

> Part of the answer lies in *setting the right conditions* for manufacturing to blossom and reach its full potential. This potential exists because of Pakistan's growing labor force and rising urbanization and connectivity. Yet, Pakistan's largely low-skilled labor force, poor commercial environment, lack of adequate infrastructure, and its

> failure to diversify production and climb up the technology ladder prevent this potential from becoming reality [emphases added].

These are incontrovertible observations, underscoring as they do Pakistan's key deficiencies, but the report's approach is essentially laissez-faire, i.e., create the right conditions and good things will follow. This is questionable. The report focuses primarily on the *supply* side – provision of infrastructure, skilled labor, etc. – and hardly addresses *demand*-side problems. There is little assurance that simply alleviating supply-side constraints would on its own revitalize manufacturing activity. What is, for example, the likelihood that increased power supply would actually relieve the shortages in the manufacturing sector, instead of ending up feeding private consumption? Similarly, education and training obviously merit far greater attention and investment, but the effort would be effectively pointless if skilled labor were not to find employment and immigrate to foreign countries instead.

The recommendations that Sanchez-Triana et al. (2014) present, would, if carried out, help to strengthen the economy's underpinnings – especially where problems are particularly acute – but they are unlikely per se to bring about a real turnaround in Pakistan's manufacturing sector. Something more, perhaps also different, is required in terms of government policies and actions aimed at inducing the private sector and markets to achieve better manufacturing performance.

In Pakistan's case, three domains of public policy appear to be foundational to bringing about the needed economic transformation and change in business behavior conducive to manufacturing growth and rising productive efficiency. Any program for manufacturing revival in Pakistan must aim to (i) reduce management failures, (ii) create and strengthen domestic firms' links with the global value chains and, not least, (iii) define and pursue Pakistan's strategic interests in regional trade.

There are often calls for a program of industrial restructuring in Pakistan. However, this paper argues that the poor performance of manufacturing is not due so much to industry-specific failures that could have been avoided had the country chosen different industries as to generic problems that cover virtually the entire spectrum of industry. Of these, management failure is probably the most pervasive and serious. At this juncture, the primary concern of policymakers and the private sector ought, therefore, to be to make existing industry more efficient rather

than look for new high-growth industries. The latter is obviously important for the longer-term sustainability of economic growth and international competitiveness, but little will be gained if the new industry too is afflicted by inefficiency and low quality.

That Pakistani state enterprises are generally poorly run is well known. In terms of its economic salience and size of investment, Pakistan Steel Mills is, arguably, the most egregious case of mismanagement, corruption, and political interference. Steel mills with similar design and scope thrived in other developing countries (for example, India and Iran, not to mention Korea's success with Pohang Steel) and witnessed capacity expansion over time. Pakistan Steel Mills never came close to reaching its potential and remained veritably sick and loss-making.[4] Although not in manufacturing, PIA and Pakistan Railways – fairly successful enterprises at one stage – have also seen their performance collapse and become a heavy burden on state finances. The reason is, again, gross mismanagement.

However, management failure is not confined only to state enterprises. It is also pervasive in the private sector, as is evident from the high variability in plant-level efficiency over time and across firms. Poor-performing private firms, which could be expected eventually to go out of business, nevertheless survive for reasons ranging from government largesse to some peculiar source that yields monopoly rents (government licensing, location, access to a scarce resource, etc.). Although the quality of management depends on a range of factors, it is particularly sensitive to the incentives available to managers. Pakistan could learn much from the East Asian experience in devising incentives and penalties based on a set of rigorous firm-level performance criteria. Even in the advanced economies, the issue of rewards and managerial performance has gained prominence thanks to large-scale financial malfeasance and ill-considered short-term financial adventures by bankers and hedge fund managers.

Forging integral links with global value chains is also a management issue – ensuring quality, reliability, competitive costs and, not least, salesmanship – but it is also dependent on the firm's exposure to the global market, ability to meet international quality standards, and access to finance, where the government's role is often critical. As noted

[4] It is remarkable that, for a project the size of Pakistan Steel Mills and the fact that it has been a serious drain on public resources and had to be put up for sale to the private sector, there has been little serious research on why this venture failed to deliver on its promises. What are available are basically anecdotal and sensational newspaper accounts.

earlier, Pakistan today faces competition mainly from other low-wage countries where firms, desperate to gain a slot in the value chain, look for ways to push wages down and allow labor and environmental standards to decline, often with open or tacit government connivance. This phenomenon – known as the "race to the bottom" – is ultimately self-defeating and leads to much misery and hardship for the working poor, as became evident, for example, in Bangladesh not too long ago.

Such behavior can be avoided only if the countries concerned cooperate in disavowing such practices. Beyond that, domestic measures are needed to make firms compete on the basis of productivity and quality through sustained, continuous efforts at building skills and enforcing quality standards. In a rapidly changing global environment, "best practice" is not a fixed point but rather something that firms strive and compete to realize through incremental and sustained improvements in products and processes (Haque, 2014).

The third domain of public policy is taking advantage of regional trade, which gained in salience as developing countries became major players in the world market and the long-established North–South trade links weakened. It is now commonplace to claim Pakistan's geostrategic importance, but how this might redound to a national advantage is less clear and certain. As noted earlier, Pakistan has so far failed to take full advantage of its bilateral trade agreement with China.

In recent years, a vocal segment of the Pakistani business and professional community has pressed for closer commercial ties with India. However, given the experience with opening up to China, it is foolhardy to pin hopes on trade with India turning Pakistan into a manufacturing hub. Imports of manufactures from China and India have risen rapidly over the past decade, but that has done little to raise Pakistan's industrial prowess. If anything, a number of industries that erstwhile managed to thrive have now simply disappeared, thanks mainly to the flood of Chinese and Indian imports. Given this state of affairs, further opening up the economy to regional suppliers is likely only to make the survival of domestic industry even more difficult.

Commercial relations with India, as indeed with other regional economies, should grow and become stronger over time, but that can work to Pakistan's advantage only if a concerted effort is made at the level of the government and private sector to make domestic industry internationally competitive. Experience has shown that the realization of gains from

international trade cannot be left entirely to the market, certainly not when an economy with relatively small firms must compete with foreign industrial giants, often backed actively by their governments.

How firms compete with each other is an important determinant of productive efficiency, the key to their viability in the world market. The choice is not between the market and government direction and planning, or between competition and monopoly, but rather one of fashioning markets that induce firms to compete in terms of improved productive efficiency. This is truly a big challenge for the country and its policymakers.

The market is normally expected to make firms compete on the basis of costs and quality, but competition often becomes dysfunctional when firms seek ways to hurt their competitors in order to get ahead and dominate the market. In unregulated markets – as during the early era of industrialization in the US and other Western economies and in many developing countries today – firms are inclined to eliminate competition and consolidate monopoly power. In this state of affairs, the victorious firms are seldom the more efficient, but rather those with deeper pockets (Haque, 2007). Anti-competitive practices persist even where countries have instituted rules and regulations against unfair trading practices and the rise of monopolies through mergers and acquisitions.

The Competition Commission of Pakistan has the mandate to prevent anti-competitive behavior and deter firms from exploiting their dominant position or adopting "deceptive marketing practices," though it has so far been concerned mostly with mergers and acquisition. However, if the goal is to create markets that are conducive to the rise of robust, internationally competitive firms, the Commission's mandate and regulatory authority will need to be broadened in three respects.[5]

The first concerns the institutional basis of the market. Free enterprise and competitive markets today have universal appeal, but there remain significant differences across countries as to what drives the market. There is a distinction between the economies that followed the so-called Anglo-Saxon model and those that followed the Continental/East Asian model, principally on grounds that, in one model, the stock market was the dominant source of financing investment, while in the other it was the banking system.

[5] If that is deemed impractical, some other agency will need to carry out the task.

Although the distinction has now become quite blurred,[6] it is a fact that, where share valuation and performance are dominant considerations, investments are motivated by shorter-term considerations. Rapid economic growth requires high rates of investment with longer-term objectives rather than speculative, get-rich-quick activities. Pakistan's economic growth has faltered because of its abysmally low investment rate and financial markets that encourage investors toward short-sighted ventures, such as real estate and speculation in the domestic stock exchanges.

Second, from the viewpoint of helping new firms to survive and grow, there is often a need to regulate competition so that firms innovate and develop new products and markets. Competitive pressure is useful to induce firms to invest in productivity and quality improvements, but it may need to be restricted, at least for a while, so that domestic firms become more established and stronger over time. This is not quite the traditional and notorious "infant industry argument" for restricting competition. Rodrik (2004) has called this the "discovery process," that is, "one where firms and government learn about underlying costs and opportunities and engage in strategic coordination" (p. 3).

Finally, there is a case for regulating competition where small domestic firms are threatened by larger foreign firms that have a competitive advantage simply because of their size, as they have easier access to finance and enjoy scale economies relating to R&D, advertising and other sales costs, not to mention greater political influence (Haque, 2007). This requires carefully examining the causes of higher production costs and inefficiencies of domestic firms, and establishing whether increased competition would actually lead to improvements or just force firms out of business, as happened over the last decade.

It bears repeating that Pakistan's trade liberalization failed to yield productivity gains mainly because little attention was given to addressing the peculiar difficulties domestic firms face, in the belief that increased competition was all that was needed. All those who believe in liberalizing trade and freeing markets in Pakistan are urged to reflect on how markets and the free enterprise system work in practice.

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[6] This has happened mainly because of the globalization of international finance and the consequent troubles confronting financial institutions.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 107–141

Pakistan: A Case of Premature Deindustrialization?

Naved Hamid* **and Maha Khan****

Abstract

While "deindustrialization" is now considered normal for developed countries, recent trends show that many developing countries have seen their share of manufacturing employment peak at far earlier levels of income than in advanced countries. This new occurrence, which blocks off the main avenue for a country to catch up with more advanced economies, has been called "premature deindustrialization." As a result of stagnation in manufacturing since 2007, Pakistan is on the brink – if not already in the process – of premature deindustrialization. This paper focuses on (i) growth trends in manufacturing and the economy, (ii) developments in the context of premature deindustrialization in Pakistan, and (iii) the change in the country's structure of industry.

We adapt and apply the industrial sophistication index developed by Lall, Weiss, and Zhang (2005) to the Pakistan Standard Industrial Classifications in the Census of Manufacturing Industries. The structure of industry in Pakistan, Sindh, and Punjab is mapped from 1990–99 to 2005/06 (2010/11 for Punjab) on the basis of a sophistication index score. Our analysis substantiates the conclusion that Pakistan's industrial structure has stagnated, drawing on analyses of export data in other studies. It also indicates that our finding of modest upgrading in the industry sector on the basis of an intuitive division of industries into low-technology and high-technology industries may have been too optimistic. Revitalizing manufacturing growth will require Pakistan to once again adopt a proactive industrial policy to address the constraints and weaknesses of the manufacturing sector.

Keywords: industrialization, premature deindustrialization, manufactures, manufacturing, structural change, growth, exports, sophistication of production.

JEL classification: L60, O14, O25, F1.

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* Director, Centre for Research in Economics and Business, Lahore School of Economics.
** Research and Teaching Fellow, Centre for Research in Economics and Business, Lahore School of Economics.
The authors wish to acknowledge the excellent research assistance provided by Mehreen Irshad Butt, Zara Ejaz, and Abraham Shah, summer interns at the Centre for Research in Economics and Business.

1. Introduction

It is evident that industry[1] in Pakistan is in a state of crisis. The large-scale manufacturing (LSM)[2] sector has grown, on average, by only 1.1 percent per annum in the last seven years (from 2008/09 to 2014/15; see Table A1 in the Appendix). This sector has experienced slowdowns in the past, but there have been only two other extended periods of low growth since 1950: first, in the 1970s (1971/72 to 1976/77) when LSM growth averaged only 2.1 percent per annum and, second, in the 1990s (1994/95 to 1999/2000) when LSM grew, on average, at 2.3 percent per annum.

However, there are several reasons why the current slowdown is of much greater concern. One, in the two previous instances, average annual growth was still about twice as high as it is now. Two, in the earlier two periods, growth in LSM picked up strongly in the seventh year; there are still no signs of a pickup in growth in the current period. Three, there is increasing evidence that the share of manufacturing in the economy is peaking in many developing countries at far earlier levels of income than it did in the industrialized countries – a phenomenon known as "premature deindustrialization" – and it is possible that the current slowdown in growth in industry in Pakistan may not just be a temporary problem.

The rest of the paper is organized as follows. Section 2 looks at growth trends in manufacturing and the economy. Section 3 summarizes the discussion in the literature on "premature deindustrialization." Section 4 looks at developments in Pakistan in the context of this discussion, analyzing the change in the structure of industry in terms of an industrial sophistication index. Section 5 concludes with a discussion of the prospects for industrial growth in Pakistan, and suggests broad guidelines for issues to be addressed in an industrial policy to reinvigorate the country's manufacturing sector.

2. Trends in Growth

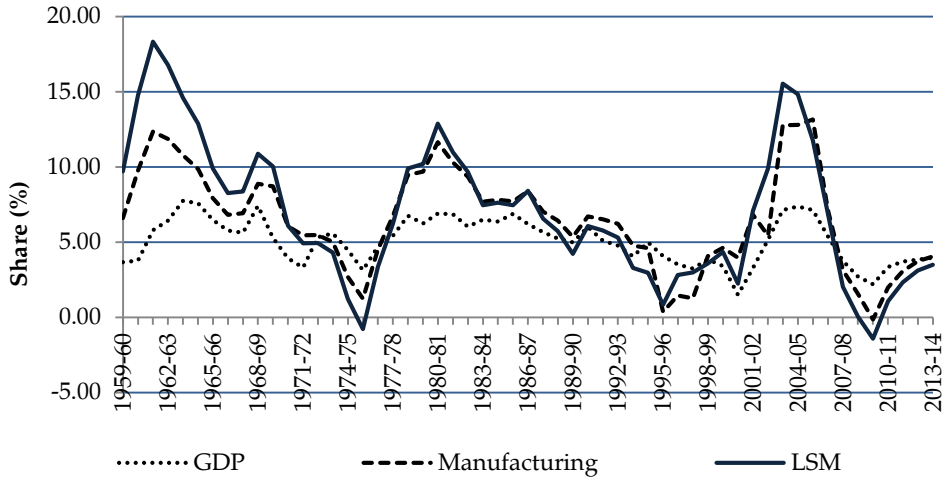
We focus on the LSM subsector not only because it accounts for 80 percent of the manufacturing sector, but also because there is reasonable data available on the annual value added (VA) and on changes in

[1] In this paper, the words "industry" and "manufacturing" are used interchangeably.

[2] In Pakistan, the manufacturing sector comprises two subsectors: LSM and small-scale manufacturing. LSM covers establishments registered under the Factories Act 1934 or those qualifying for registration (having ten or more employees). These include repair and service industries. Small-scale manufacturing includes all such manufacturing establishments not covered under LSM (Pakistan Bureau of Statistics, 2015).

industrial structure over time. Figure 1 shows the (smoothed) growth rates of manufacturing, LSM, and gross domestic product (GDP) since 1960; LSM has been a leading sector of the economy over most of the period.

Figure 1: Growth trend: Smoothed series (three-year moving average)

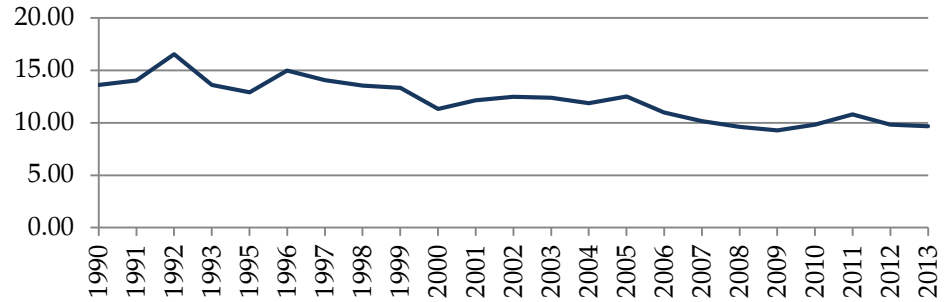


Note: The growth rate for 2000/01 is estimated.
Source: Authors' calculations based on the following data: (i) for 1959–96: *50 years of Pakistan*, vol. 1 (1947–1997) (http://www.pbs.gov.pk/sites/default/files/50_years statistics/vol1/3.pdf); (ii) for 1997–2015: *Pakistan Economic Survey* for various years.

There were three distinct cycles during this period with robust GDP growth: in the 1960s, 1980s, and mid-2000s; in each period, the LSM subsector was clearly the driver. However, there was some kind of structural break around 1990: in the 30 years prior to 1990, LSM (and GDP) growth averaged over 5 percent per annum throughout, except for six years in the 1970s, but in the 25 years since 1990, LSM (and GDP) growth has averaged over 5 percent per annum for only nine (eight) years, mostly in the 2000s.

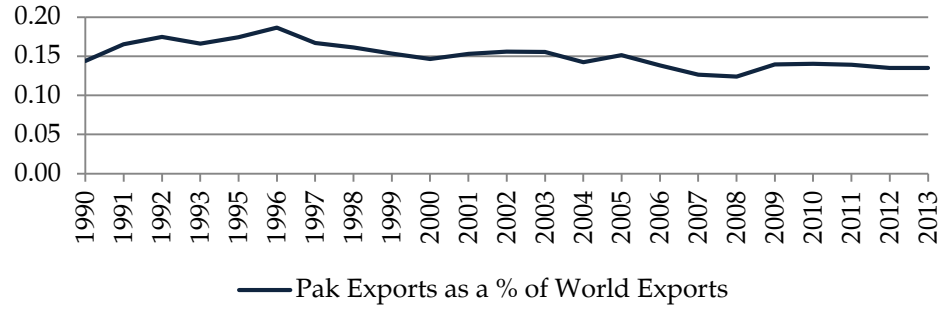
This may be a coincidence, but it is worth noting that Pakistan abandoned its proactive industrial policy around 1990 and started a stop-go process of trade and economic liberalization at the behest of the international financial institutions (IFIs). However, trade liberalization policies do not seem to have had much long-term impact on Pakistan's exports, which, as a percentage of GDP (after reaching a peak in 1992) and world exports (after reaching a peak in 1996), have either declined or stagnated (see Figures 2 and 3).

Figure 2: Exports as a percentage of GDP, Pakistan



Source: Authors' calculations based on data from the United Nations Commodity Trade Statistics database (UN Comtrade) and trade map website, accessed 9 September 2015.

Figure 3: Exports as a percentage of world exports, Pakistan



Note: World export figures for 1990–93 have been estimated by extrapolating backward from 1994, using an index of the value of total world merchandise exports. Retrieved 17 September 2015 from https://www.wto.org/english/res_e/statis_e/its2001_e/stats2001_e.pdf
Source: Authors' calculations based on data from the United Nations Commodity Trade Statistics database (UN Comtrade) and trade map website, accessed 9 September 2015.

It is possible that, in the last 25 years, Pakistan has managed to get the worst of both worlds. By abandoning its active industrial policy, it lost the benefits of an economic focus on the development of the manufacturing sector, while its lackadaisical attempts at trade liberalization were not enough to start the process of export-oriented manufacturing and economic growth.

3. Premature Deindustrialization

Historically, the manufacturing sector was the engine of growth for advanced countries, absorbing most of the surplus labor from the agricultural sector. For a long period, the share of manufacturing in

employment and output increased. However, as productivity growth in this sector rose faster than in the rest of the economy while the relative price of manufactures fell, the share of manufacturing in advanced countries ultimately declined.

This phenomenon was described as "deindustrialization" and was the subject of debate among economists for a long time. While deindustrialization is now considered normal for advanced developed countries, recent trends show that many developing countries have seen their manufacturing employment shares peak at far earlier levels of income than in advanced countries. This new occurrence is called "premature deindustrialization" – a term that seems to have been coined by Dasgupta and Singh (2006).

Rodrik (2015) argues that the conventional explanation for deindustrialization – that is, different rates of technological progress in manufacturing and other sectors of the economy, which relies crucially on adjustments in domestic relative prices – is not directly applicable to developing countries because they occupy a small share of the world market for manufactures, i.e., they are essentially price takers (pp. 3–4). The literature identifies a number of factors, including trade liberalization, globalization, the abandoning of industrial policies in most developing countries under the Washington Consensus, and the rise of China as a major industrial exporter, as reasons for "premature deindustrialization."[3]

A plausible story, according to Rodrik (2015), would be that, "as developing countries opened up to trade, their manufacturing sectors were hit by a double whammy. Those without a strong comparative advantage in manufacturing became net importers of manufacturing, reversing a long process of import substitution. In addition, developing countries 'imported' deindustrialization from the advanced countries, because they became exposed to the relative price trends produced in the advanced economies" (p. 4).

This process was probably compounded by the rise of China as an exporting powerhouse in the 1990s, the effect of which was twofold, with local manufacturers not only facing intense competition in export markets, but also losing consumers in domestic markets. In addition, as China's manufactured exports have expanded, it has grown as a destination for exports of primary products from developing countries,

[3] See, for example, Shafaeddin (2005), Wood and Mayer (2011), Jenkins and Barbosa (2012), Bogliaccini (2013), and Kim and Lee (2014).

particularly in Latin America and Africa, and businesses there have shifted from manufacturing to the production of primary products for export to China – the so-called "Dutch Disease" effect (Kim & Lee, 2014).

To sum up, there seem to be powerful economic forces that are adversely affecting the growth of the manufacturing sector in developing countries. This impact has not been uniform across regions: countries in Latin America and sub-Saharan Africa have been affected the worst, while those in Asia have mostly maintained a stronger manufacturing performance than would be expected on the basis of their income and demography (Rodrik, 2015, p. 12). That premature deindustrialization is not inevitable is reassuring. Historically, industrialization was considered synonymous with development and manufacturing was seen as the engine of growth. It makes it possible for workers in rural areas to move to higher-productivity jobs in factories, contributing to overall GDP growth because of the reallocation effect; manufacturing also tends to experience higher productivity growth.

All countries (except for a few resource-rich economies) that have achieved middle- or high-income status recently are associated with sustained growth in the manufacturing sector. However, Felipe, Mehta, and Rhee (2014) go further and ask if "today's developing economies can achieve high-income status without first building large manufacturing sectors" (p. 1). To answer this, they put together a large cross-country panel dataset. Their analysis shows that peak manufacturing employment shares in excess of 18–20 percent "strongly predict that an economy is rich; while peak shares below this threshold are near perfect predictors that an economy is not rich (i.e., manufacturing employment is necessary for becoming rich)" (p. 10). This could be particularly bad news for Pakistan (where the manufacturing employment share is around 14 percent) if the current slump in the manufacturing sector is an indicator of the onset of "premature deindustrialization" in the country.

4. Pakistan's Experience

This section examines changes in the structure of Pakistan's industry in terms of an industrial sophistication index.

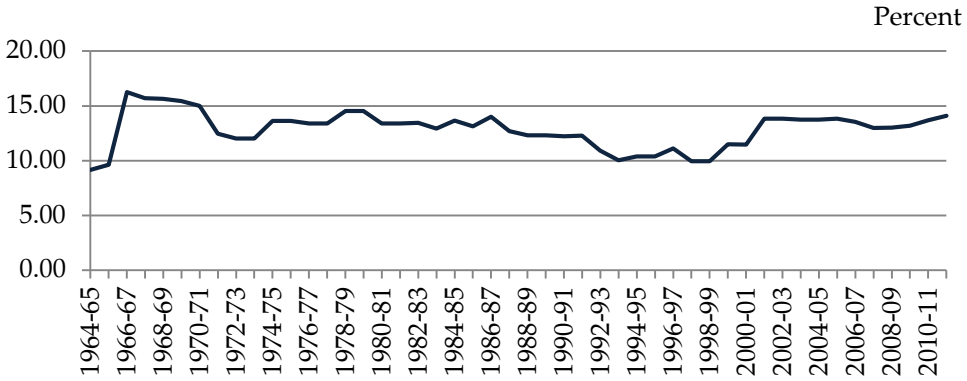
4.1. Is Pakistan in the Premature Deindustrialization Phase?

The literature uses three broad measures to determine if and when a country is experiencing premature deindustrialization: (i) the share of

manufacturing employment in total employment, (ii) manufacturing value added as a percentage of GDP in terms of constant prices, and (iii) manufacturing value added as a percentage of GDP at current prices.[4]

In cross-country analyses, the share of manufacturing employment appears to peak earlier than the real manufacturing value added (RMVA) share (see Felipe et al., 2014; Rodrik, 2015). For Pakistan, the manufacturing employment share is presented in Figure 4.

Figure 4: Manufacturing sector employment as a share of total employment



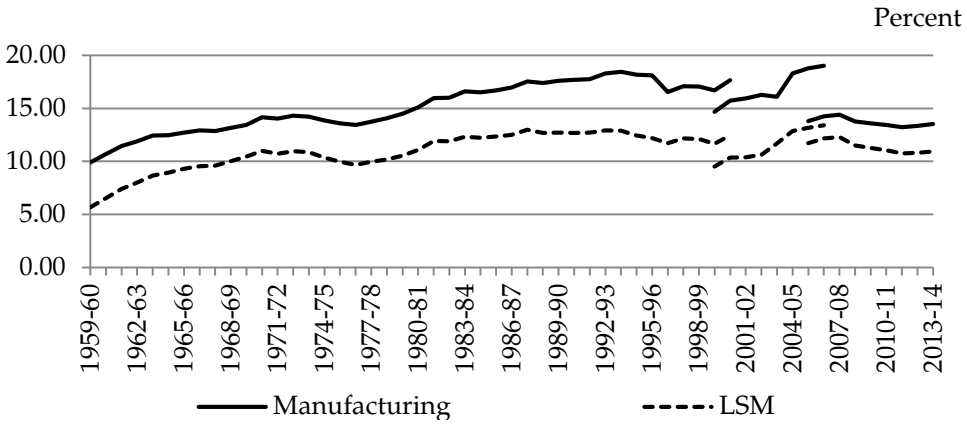
Source: Authors' calculations based on Pakistan country tables retrieved from http://laborsta.ilo.org/STP/guest on 24 March 2015.

The share of manufacturing employment peaked at 16.3 percent in 1966/67 as a consequence of rapid industrialization in the 1960s. After declining in the late 1960s and early 1970s, this share remained fairly stable at around 14 percent until 1986/87. It declined to a low of around 10 percent in 1993/94, at which level it stayed till 1998/99. The share of manufacturing employment then increased rapidly to 14 percent in 2001/02, where it stabilized. The slight upward trend since 2007/08, despite the low growth in the manufacturing sector, is puzzling. It seems that, while the manufacturing employment share has stabilized at well below the 18 percent threshold level established by Felipe et al. (2014), it has not begun to decline. It is worth noting that the peak manufacturing employment shares of China and India are in the 14–15 percent range, which are not much higher than the share in Pakistan.

[4] The peak in nominal manufacturing value added (NMVA) shares occurs somewhere in between the other two, but according to Rodrik (2015, p. 6), it is not clear if changes in the NMVA share have any economic significance per se. We do not discuss changes in the NVMA share in the paper, but these are presented in Figure A1 in the Appendix.

The RMVA share for the period 1959/60 to 2013/14 is presented in Figure 5. There is a problem when looking at the trend over the entire period as the revisions in the base year in 1999/2000 and 2005/06 create discontinuities. As expected, there is a downward shift in the curve each time the base year is updated as the relative price of manufacturing declines over time. However, what is clear is that the RMVA share was increasing until 2007/08, when it peaked at 19 percent of GDP. Since then, the RMVA share has declined: according to the revised series (base year 2005/06), in 2013/14 it was 13.5 percent compared to 14.4 percent in 2007/08, i.e., lower by 0.9 percentage points.[5]

Figure 5: Share in GDP at constant factor cost



Note: The CMI's new survey re-estimated the size when the base year changed from 1999/2000 to 2005/06.

Source: Authors' calculations based on the following data: (i) for 1959–96: *50 years of Pakistan*, vol. 1 (1947–1997) (http://www.pbs.gov.pk/sites/default/files/50_years statistics/vol1/3.pdf); (ii) for 1996–2001: *Pakistan Statistical Year Book 2006* (Pakistan Bureau of Statistics); (iii) for 2001–10: *Pakistan Statistical Year Book 2012* (Pakistan Bureau of Statistics); (iv) for 2010–14: *Pakistan Economic Survey 2013–14*.

During this period, the LSM share declined by 1.4 percentage points (from 12.3 percent in 2007/08 to 10.9 percent in 2013/14), indicating that small-scale and informal manufacturing activities were gaining at the expense of LSM. Since the former are far more labor-intensive than LSM, this probably explains the increase in the manufacturing employment share since 2007/08 despite the slow growth in the sector (Figure 4).

[5] When adjusted for the price effect of the revision in the base year, it is only marginally below, i.e., 18.2 percent in 2013/14 against 19.0 percent in 2007/08 (about 5 percent lower).

The evidence based on the shares of manufacturing employment and real value added is mixed. It seems that, unless there is another episode of rapid manufacturing growth as in the Musharraf period, the RMVA share has begun to decline. However, this is not yet reflected in the manufacturing employment share because the declining LSM share is being partially substituted by increasing small-scale and informal manufacturing activities, which are much more labor intensive. In other words, even if Pakistan is not already experiencing premature deindustrialization, it is on the brink of doing so.

4.2. Trade Liberalization and Pakistan's Industrial Crisis

It is argued that IFIs have played an important role in promoting trade liberalization in developing countries, primarily through the World Bank's structural adjustment lending and the IMF's stabilization programs. Pakistan received a number of such loans and credits in the early 1990s and again in the first half of the 2000s. Pakistan is not an open economy[6] and probably has never been very open. However, despite IFI pressure to liberalize trade and many structural adjustment loans and IMF programs, Pakistan's trade openness has declined since the early 1990s.

Figure 6 plots Pakistan's trade openness ratio (exports plus imports of goods as a percentage of GDP). We see that, when Pakistan receives a World Bank structural adjustment loan or is under an IMF program, its trade openness increases, but as soon as the Bank loan is disbursed or the IMF program completed, its trade openness declines. For example, after increasing in the early 1990s, the trade-GDP ratio declines from 37.7 percent in 1992 to 24.9 percent in 2000. Again, after increasing in the first half of the 2000s, the trade-GDP ratio declines from 32.0 percent in 2005 to 29.7 percent in 2008. Since then, it has fluctuated between 25.9 and 29.4 percent.

[6] For example, in the "Trade Openness" component of the ICC Open Markets Index, Pakistan has the lowest score (1.8 out of a possible 6) among the 75 countries covered in the report (ICC, 2013, pp. 29-30).

Figure 6: Trade openness

Source: Authors' calculations based on data from the United Nations Commodity Trade Statistics database (UN Comtrade) and trade map website, accessed 9 September 2015.

An alternative measure of the likely impact of trade liberalization on industry is to look at trends in the ratio of nonfood/nonoil (NFNO) imports to GDP since 1990. For this purpose, we take the 1980s as a benchmark, when Pakistan's NFNO imports were, on average, 11.3 percent of GDP. After increasing sharply in the early 1990s (to 14.3 percent in 1992/93), the NFNO imports-to-GDP ratio declines steadily for the rest of the decade (to 9.3 percent in 1999/2000) (see Table A2 in the Appendix). Thus, it seems that, on the external side, the cause of the slump in manufacturing in the 1990s was, if anything, the balance-of-payments (BOP) constraint rather than increasing manufacturing imports.

After 2001/02, there is a surge in the NFNO imports-to-GDP ratio, driven both by a relaxation of the BOP constraint and trade liberalization, with a peak of 13.5 percent in 2005/06. However, this period is also one of high manufacturing growth and rising manufacturing employment and RMVA shares. Thus, one cannot say that trade liberalization adversely impacted the manufacturing sector during this period. Finally, post-2007, during the current manufacturing slump, the NFNO imports-to-GDP ratio declines from 13 percent in 2006/07 to 10 percent in 2012/13.

This implies that, in Pakistan, it is the BOP rather than excessive imports that has generally been the binding constraint as far as the manufacturing sector is concerned. Arguably, inadequate trade liberalization and an overvalued exchange rate[7] – compounded by power shortages – have prevented Pakistan's exports (including manufacturing) from expanding rapidly, increasing manufacturing growth and relaxing

[7] Pakistan's tradable sector suffers from the Dutch Disease effect because of workers' remittances, which were over 32 percent of total imports and 5.4 percent of GDP in 2012/13.

the BOP constraint on a more sustainable basis (Ahmed, Hamid, & Mahmud, 2015).

Imports from China have probably had a considerable impact on manufacturing in Pakistan. This is reflected in the increase in China's share of Pakistan's NFNO imports from 8.3 percent in 2000 to 25.6 percent in 2013 (see Table A3 in the Appendix). However, this does not give us a complete picture of the likely impact. Pakistan has a very special relationship with China, which includes tremendous support for Pakistan in defense and international forums, a preferential trading arrangement, and substantial Chinese investment in infrastructure. In return, Pakistan has been very relaxed in terms of scrutinizing imports from China, and this has opened up avenues for under-invoicing Chinese imports to evade import duties.

One estimate of this under-invoicing emerges when comparing "exports to Pakistan" as reported by China and "imports from China" as reported by Pakistan in the United Nations Commodity Trade dataset. Adjusted for this misreporting, Pakistan's NFNO imports from China as a share of total NFNO imports have increased from 10 percent in 2000 to 36.4 percent in 2013.

However, the impact of Chinese imports may not have been entirely negative. No doubt, local producers of competing manufactures would have been badly affected, but since the average import-to-GDP ratio in Pakistan has not increased since 1990, a large part of the increase in Chinese imports was at the expense of other countries. As far as these imports are concerned, consumers are certainly better off, but also a number of industries in Pakistan have gained because of access to restricted or high-duty imports of raw materials at reasonable prices. The motorcycle industry, manufacturers of white goods, assemblers of electronic goods, and exporters of sportswear and footballs, to name a few, have all benefited considerably from cheap imports from China.

Thus, Pakistan's manufacturing industry is in crisis not so much because of trade liberalization, but because of weaknesses in its internal policies. These are discussed by one of the authors elsewhere, but to summarize, they include: a disproportionate tax burden on manufacturing compared to other sectors, a restrictive and nontransparent trade regime, an overvalued exchange rate, and extensive gas and power shortages (see Ahmed et al., 2015; Ahmed, Mahmud, Hamid, & Rahim, 2010; Hamid & Hayat, 2012).

A reason for the lack of a conducive environment for the manufacturing sector is that Pakistan has not had a proactive industrial policy since the 1990s. Industrial policy is also needed to nudge industry in the country to move up the technology or sophistication ladder, which is essential if the manufacturing sector is to be an engine of growth over an extended period. Next, we look at what has been happening to the structure of industry in Pakistan over the last two decades or so.

4.3. Structural Change in Industry

A key element in the success of the new industrializers, particularly in East Asia, has been their ability to move up to more sophisticated industries as rising labor costs eroded their competitiveness in the simpler and more labor-intensive industries. Thus, structural change in an industry can be a good leading indicator of the likelihood of a country being able to sustain industrial growth over an extended period of time.

In this section, we look at how the structure of industry in Pakistan has changed in the last 25 years or so. First, we discuss the change in structure in terms of the standard industrial classifications given in the Census of Manufacturing Industries (CMI). Given that any conclusions we draw on this basis – with regard to whether the observed changes in the share of different industries represent a movement up the technology ladder – will be subjective, we also look at the change in industrial structure based on the sophistication index scores developed by Lall, Weiss, and Zhang (2005).

Data on the VA shares of the top 16 industries at the 2-digit level for Pakistan, Sindh, and Punjab from 1990/91 to 2005/06 (2010/11 for Punjab) are presented in Tables A4 to A6 in the Appendix. The top three industries in 2005/06 were textiles, food products and beverages, and chemicals and chemical products. Their combined VA share was 57.5 percent, which has hardly changed since 1990/91, when it was 56.9 percent. There were, however, some positive changes within two of these industries with higher VA activities such as fabrics and finishing gaining at the expense of spinning (in textiles), and vegetable oils and dairy products gaining at the expense of sugar (in food and beverages).

At the 2-digit level, the main gainers (i.e., an increase of over 0.5 percent in their VA share) during this period were wearing apparel (from 1.4 to 4.7 percent), petroleum (from 3 to 4.7 percent), motor vehicles (from 2 to 4.5 percent), paper and paper products (from 1.6 to 2.5 percent), and other transport equipment (from 0.6 to 1.5 percent). The main losers

during this period were basic metals (from 5.6 to 4 percent) and electrical machinery (from 4.1 to 1.9 percent).[8] Thus, the change over this 15-year period (1990 to 2005) was relatively small, but on the whole, largely positive, with higher VA items such as fabrics, garments, petroleum, and vehicles increasing their share. There was some downside, such as the decline in basic metals and electrical machinery.

Most of the industry in Pakistan is located in Sindh and Punjab, accounting for 88 percent of the LSM value added in 2005/06. It is interesting to see that the industrial structure in the two provinces is quite different. In Punjab, agriculture and resource-based industries, such as textiles (excluding silk and art silk textiles), food and beverages, wearing apparel, cement, and paper dominate, accounting for over 61 percent of the value added in 2005/06.[9] In Sindh, however, the industrial structure is more technology-intensive with chemicals, petroleum, motor vehicles, basic metals, machinery (both general and electrical), and other transport equipment accounting for over 51 percent of the value added in 2005/06.[10] These differences between the two provinces seem to have increased from 1990/91 to 2005/06: in 1990/91, the share of agriculture and resource-based industries in Punjab was less than 50 percent and that of technology-intensive products in Sindh was around 42 percent.

Unfortunately, the data on the structure of industry for Pakistan as a whole is almost a decade old, but the CMI for Punjab for 2010/11 shows a slight trend reversal in the increasing concentration on agriculture and resource-based industries, whose VA share declined from under 58 percent (adjusted) to under 57 percent (adjusted).[11] However, there was no increase in the VA share of technology-intensive industries, which remained around 22 percent. The structural change in Pakistan's industry seems to have been slow, largely because Sindh and Punjab have very different industrial structures. Thus, as the trend has been one of increasing concentration in their respective areas of strength, any changes in the two provinces have tended to cancel each other out.

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[8] The decline in tobacco products seems to be very large (from 6.4 to 2.2 percent), but this is an overstatement due to the likely underreporting of tobacco products in Punjab in 2005/06. The share of tobacco products in Punjab was abnormally low in 2005/06 (0.8 against 7.2 percent in 2000/01 and 8.1 percent in 2010/11), possibly because the CMI for 2005/06 is missing the largest cigarette manufacturer in the country, Pakistan Tobacco Company, whose main production facilities are located in Punjab.

[9] This is probably an overstatement (see footnote above). If we adjust for it, the share of agriculture and resource-based industries drops to around 58 percent.

[10] The share of these industries in Punjab in 2005/06 was only 22 percent.

[11] The 2005/06 share was adjusted for underreporting in tobacco products and the 2010 share has been adjusted for the missing data on silk and art silk textiles, which accounted for about 7 percent of the CMI value added in Punjab in 2005/06.

We have discussed the structure of industry and changes in it in terms of agricultural and resource-based industries on the one hand and technology-intensive industries on the other, assuming that movements from the former to the latter imply an upgrading of industrial structure. However, this is a rather crude and not very satisfactory basis for analyzing structural change in industry for a country. Most other studies discuss the upgrading of industrial structure in developing countries based on an analysis of the structure of a country's exports (see Lall et al., 2005; Hausmann, Hwang, & Rodrik, 2005; Hausmann & Klinger, 2007). On this basis, Pakistan's exports have not been upgraded very much in terms of technology or sophistication. Hausmann et al. (2005) have developed a methodology that uses the weighted average of the per capita GDP of the countries exporting that commodity (denoted by PRODY) and the weighted average income level of a country's exports basket (denoted by EXPY) to look at changes in the structure of a country's exports.

Applying this methodology to Pakistan and comparing exports in 1986 and 2004, Felipe (2007, p. 21) states that, "the country is 'stuck' in exports that are being exported by ever poorer countries. And, the income level of Pakistan's exports, denoted by EXPY, a proxy for its exports complexity… has not shown the increase expected from a country that is undergoing the kind of structural transformation that leads to faster growth. Pakistan's index in 1986 (4,664) is the same as in 2004 (4,628)."

Applying the same methodology somewhat later, Reis and Taglioni (2013) write that, "countries that have a more sophisticated export basket, proxied by a measure named EXPY, enjoy accelerated subsequent growth while those with less sophisticated export baskets tend to lag behind. In a sample of 100 developing countries … Pakistan lies below the 'average' regression line, implying that its export basket is 'poorer' than it should be, given its income per capita." They go on to say that, "in terms of sophistication, in the past two decades Pakistan's export basket has not undergone as stark an improvement as its Asian peers" (p. 14).

A country's export structure may be a reasonable proxy for the structure of its industry, but for a country whose exports (manufacturing exports) are such a small percentage of GDP (VA in the manufacturing sector), it would help if one could look at the industrial structure in terms of sophistication directly. We adapt and apply the industrial sophistication index[12] developed by Lall et al. (2005) to the Pakistan Standard Industrial

[12] Lall et al. (2005) describe their method for calculating the sophistication index as follows: "At the product level, the sophistication measure uses data on exports by all countries (separately) and

Classifications in the CMI. The structure of industry in Pakistan, Sindh, and Punjab is calculated on the basis of the sophistication index score and presented in Tables A7 to A9 in the Appendix.[13]

Given the CMI's variability of coverage in different years and across provinces, we focus on the overall picture and do not discuss year-to-year changes. For the purposes of our discussion, summary tables on the structure of industry on the basis of sophistication levels[14] are presented in Tables 1 to 3. The performance of Pakistan's industry in terms of upgrading seems to have been very poor. One, instead of increasing, industry in Pakistan (and in Punjab) seems to be declining in sophistication over time. Two, the structure shows a complete lack of dynamism with there being hardly any movement between sophistication levels during 1990/91 to 2005/06 (2010/11 for Punjab). Three, about 50 percent of the VA share of the industry is at the lowest level of sophistication.

Table 1: Summary of industrial sophistication, Pakistan

Percentage share of LSM in total manufacturing

	1990/91	**1995/96**	**2000/01**	**2005/06**
Total sophistication level 1	2.1	1.9	1.5	2.4
Total sophistication level 2	21.4	22.3	17.1	20.2
Total sophistication level 3	2.5	2.2	2.9	1.9
Total sophistication level 4	16.6	15.0	16.8	15.0
Total sophistication level 5	8.7	11.0	15.1	9.2
Total sophistication level 6	48.8	47.6	46.6	51.2
Average sophistication score	68.9	66.5	65.9	63.0

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years. Sophistication scores obtained from Lall, Weiss, and Zhang (2005).

the income level of each exporter. The sophistication score is calculated for each product by taking the weighted average (the weights being each country's share of world exports) of exporter incomes. The scores are normalized to yield an index ranging from zero to 100" (p. 8).

[13] The methodology for the preparation of these tables is given in the Appendix.

[14] Lall et al. (2005) divide all the commodities traded into six levels on the basis that the total traded value of commodities at each level is about the same. These levels are numbered from 1 to 6, with the most sophisticated products being at level 1 and the least sophisticated at level 6. Summary tables provide average sophistication scores for Pakistan and the provinces at each of the six levels.

Table 2: Summary of industrial sophistication, Sindh

Percentage share of LSM in total manufacturing

	1990/91	1995/96	2000/01	2005/06
Total sophistication level 1	1.3	1.7	0.7	1.9
Total sophistication level 2	20.1	18.7	24.8	26.7
Total sophistication level 3	0.6	0.9	1.0	1.5
Total sophistication level 4	20.7	22.3	19.4	16.0
Total sophistication level 5	11.5	11.6	19.3	13.7
Total sophistication level 6	45.8	44.9	34.8	40.3
Average sophistication score	65.4	63.3	67.6	65.5

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years. Sophistication scores obtained from Lall, Weiss, and Zhang (2005).

Table 3: Summary of industrial sophistication, Punjab

Percentage share of LSM in total manufacturing

	1990/91	1995/96	2000/01	2005/06	2010/11
Total sophistication level 1	4.9	1.8	2.2	2.6	2.1
Total sophistication level 2	24.0	23.3	16.5	14.1	17.6
Total sophistication level 3	1.5	3.5	4.2	1.5	4.2
Total sophistication level 4	13.0	13.5	13.2	14.7	16.8
Total sophistication level 5	5.9	5.6	10.0	5.2	7.0
Total sophistication level 6	50.7	52.4	53.9	61.8	52.2
Average sophistication score	68.5	65.0	63.6	60.9	63.7

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years. Sophistication scores obtained from Lall, Weiss, and Zhang (2005).

There are considerable differences in provincial industrial structures and changes in them over time. In Sindh, in 2005/06, 40 percent of the VA share of industry is at the lowest sophistication level compared to 52 percent in Punjab in 2010/11.[15] The VA share of the top three sophistication levels is also much higher in Sindh (30 percent in 2005/06) than in Punjab (24 percent in 2010/11). In terms of trends, the VA share of the top three levels increased in Sindh by 8 percentage points between 1990/91 and 2005/06, but in Punjab it actually declined by 6 percentage points from 1990/91 to 2010/11.[16] Thus, the analysis based on

[15] Punjab's average sophistication score is understated and the share of level 6 is overstated in 2005/06 because of the underreporting of tobacco products discussed in the previous footnote. For comparison purposes, therefore, we use Punjab's 2010/11 structure.

[16] There is a sharp fall in the 1990s and then a marginal improvement in the 2000s, with the VA share increasing from 23 percent in 2000/01 to 24 percent in 2010/11.

sophistication levels shows that industry in Sindh is far more sophisticated than in Punjab; it is also more dynamic, with considerable upgrading taking place over the period. In Punjab, the slight improvement in the 2000s is overwhelmed by the massive downgrading of industry in the 1990s.

This analysis of industrial structure on the basis of sophistication of industry tends to substantiate the conclusion that industry in Pakistan has stagnated as a whole, based on an analysis of the export data. Our finding of modest upgrading of industry on the basis of the Standard Industrial Classification may have been too optimistic. It also confirms that industry in Sindh is more sophisticated than in Punjab, and there was substantial upgrading in Sindh's industry in the period 1990/91 to 2005/06.

However, because of the poor law and order situation since 2007 in Karachi, where most of the industry in Sindh is located, it is possible that the process of industrial upgrading in the province seen earlier may not have been sustained. Also because of poor law and order, it is likely that industrial growth in Sindh since 2007 has been even lower than in Punjab. Thus, given the difference in levels of sophistication of industry in the two provinces, it is likely that the average level of sophistication of industry in the country as a whole may be lower today than it was in 2005/06.

5. Conclusion

Manufacturing growth has played a critical role in the development of the advanced countries as well as in almost all developing countries that have succeeded in closing the income gap with the former. Thus, "premature deindustrialization" blocks off the main avenue for a country to catch up with advanced economies.

As a result of stagnation in manufacturing since 2007, Pakistan is on the brink, if not already in the process, of premature deindustrialization. It will not be easy to revitalize industrial growth in Pakistan: its industrial structure in terms of sophistication is not only below that of other countries at its level of per capita income, but it has also been stuck at this low level of sophistication for a long time. On the positive side, the industrial structure in Sindh is much more dynamic and has continued to upgrade since 1990/91. Therefore, if industrial growth in Sindh revives, it could lead the industrial upgrading process in the country as a whole.

Some positive recent developments give hope that Pakistan's manufacturing growth might revive and once again achieve the levels

reached in previous high-growth periods. Among these, probably the most important development is the military's recognition that fundamentalism and religious terrorism pose a threat to the survival of Pakistan, and the fresh purpose with which the fight against terrorism is being conducted. The direct benefits of the improvement in internal security are already visible, particularly in Karachi, and if this fight is sustained, it should result in a sea change in Pakistan's economic environment.

The second significant development is the announcement of the China-Pakistan Economic Corridor investment package of about US$ 46 billion. If implemented even partially, this initiative will have many positive impacts on the economy – boosting economic activity, significantly reducing (if not eliminating) the crippling power shortages, and changing economic sentiments in and about Pakistan, which could boost both domestic and foreign direct investment in the country. These two developments complement each other and could potentially initiate a "virtuous" circle of investment and growth lasting many years.

To take full advantage of these developments to revitalize manufacturing growth in the country, a number of measures need to be implemented. Pakistan should once again adopt a proactive industrial policy to address the constraints and weaknesses of the manufacturing sector. Pakistan abandoned any serious attempt at industrial policy in the late 1980s, undoubtedly influenced by the policy advice of donors based on the Washington Consensus. However, there is now growing realization even in the international community that industrial policy has a role to play in developing countries (see Felipe, 2007; Hausmann & Rodrik, 2006; Hausmann et al., 2005; Rodrik, 2004, 2014), and it is important that Pakistan should develop and implement an industrial policy.

Some of the key aims of this industrial policy should be, first, to provide manufacturing with a level playing field, particularly with regard to the incidence of taxation. Pakistan faces a chronic problem of a low tax-to-GDP ratio and inability to broaden the tax base. Since it is easier to collect taxes from manufacturing than other sectors (such as wholesale and retail trade, real estate, transportation, and agriculture), there is a tendency on the part of the government to impose additional taxes on manufacturing whenever there is pressure to increase tax revenues. Predatory tax officials also find it easier to extract rents from factories than shops, restaurants, construction sites, or bus and truck operators. Since investment decisions are influenced by after-tax returns and many of the other sectors are generally outside the tax net, very little

new investment is going into manufacturing. There is clearly a need to re-address this imbalance.

Second, it is necessary to prioritize manufacturing in the management of power and gas shortages in particular and infrastructure shortages in general. In recent years, the power and gas shortages and resulting load shedding have had a disproportionate adverse impact on the manufacturing sector, both in terms of higher costs and greater uncertainty in production planning (Hamid, Nabi, & Zafar, 2014). While it may be difficult to eliminate these shortages in the short term (though the present crisis has been ongoing since 2007), better demand management that takes into account the needs of the manufacturing sector[17] could mitigate this negative impact.

Third, it is necessary to develop some way of compensating manufacturing exporters for Pakistan's chronic exchange rate overvaluation. As mentioned earlier, large workers' remittances have meant that Pakistan suffers from a chronically overvalued exchange rate as far as the tradable sectors are concerned – the so-called Dutch Disease effect. In recent years, this has been compounded by the government's stated strong exchange rate policy, which has caused Pakistan's real effective exchange rate to appreciate in the last two years.[18] It will be difficult to sustain a high growth rate in manufacturing unless steps are taken to insulate the sector from the Dutch Disease effect.

Finally, to help manufacturing in Pakistan to move up the sophistication curve, it is necessary for the government to focus on developing the required technical and skilled manpower. The Punjab government is pursuing some innovative approaches in the area of skills development, but there is a need for such initiatives on a countrywide level as well as for the development of a larger technical and engineering workforce. If a comprehensive industrial policy that addresses the above issues is developed and implemented in an economic environment that, as mentioned, could be quite positive, the manufacturing sector could once again drive economic growth in Pakistan.

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[17] For example, eight to ten hours a day of continuous supply is far better than 16 hours a day of supply, but on a schedule of a one-hour shutdown every two hours.

[18] According to World Bank (2015) data, Pakistan's real effective exchage rate apreciated from 102 in 2013 (100 in 2010) to 110 in 2014 (http://data.worldbank.org/indicator/PX.REX.REER).

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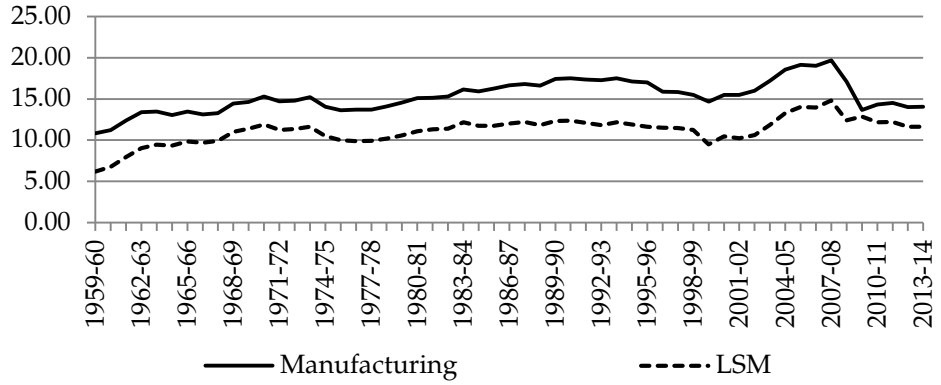
Appendix

Figure A1: Share of GDP at current factor cost (percent)



Source: Authors' calculations based on the following data: (i) for 1959–96: *50 years of Pakistan*, vol. 1 (1947–1997) (http://www.pbs.gov.pk/sites/default/files/50_years statistics/vol1/3.pdf); (ii) for 1996–2001: *Pakistan Statistical Year Book 2006* (Pakistan Bureau of Statistics); (iii) for 2001–10: *Pakistan Statistical Year Book 2012* (Pakistan Bureau of Statistics); (iv) for 2010–14: *Pakistan Economic Survey 2013–14*.

Table A1: LSM, manufacturing, and GDP growth rates

Percent, at constant factor cost

Base year	Year	LSM growth	Manuf. growth	GDP growth
1980/81	1949/50			
	1950/51	23.4	8.4	3.8
	1951/52	18.8	7.7	-1.7
	1952/53	23.7	10.0	1.9
	1953/54	28.6	13.0	10.0
	1954/55	24.2	12.3	1.7
	1955/56	17.4	10.0	3.5
	1956/57	8.1	5.4	2.9
	1957/58	4.9	3.7	2.6
	1958/59	5.6	4.2	5.5
	1959/60	2.7	2.5	0.9
	1960/61	20.3	12.8	4.7
	1961/62	19.9	13.3	5.6
	1962/63	15.7	11.2	7.0
	1963/64	15.5	11.3	6.6
	1964/65	13.0	9.9	9.5
	1965/66	10.8	8.6	6.7
	1966/67	6.7	5.6	3.7

Base year	Year	LSM growth	Manuf. growth	GDP growth
	1967/68	7.6	6.4	6.9
	1968/69	10.6	8.6	6.1
	1969/70	14.0	11.3	9.1
	1970/71	6.2	6.4	1.0
	1971/72	-0.5	1.3	2.1
	1972/73	9.2	8.7	6.7
	1973/74	6.1	6.4	7.0
	1974/75	-1.6	0.5	3.3
	1975/76	-0.6	1.4	3.4
	1976/77	-0.2	1.8	2.8
	1977/78	10.9	10.2	7.8
	1978/79	7.8	8.0	5.6
	1979/80	11.0	10.3	6.9
	1980/81	11.5	10.6	6.2
	1981/82	15.7	13.8	7.6
	1982/83	6.6	7.0	6.8
	1983/84	7.7	7.9	4.0
	1984/85	8.0	8.1	8.7
	1985/86	7.3	7.5	6.4
	1986/87	7.2	7.5	5.8
	1987/88	10.6	9.9	6.4
	1988/89	2.4	4.0	4.8
	1989/90	4.7	5.7	4.6
	1990/91	5.4	6.2	5.6
	1991/92	7.9	8.0	7.7
	1992/93	4.1	5.4	2.3
	1993/94	4.1	5.5	4.5
	1994/95	1.7	3.6	5.2
	1995/96	3.1	4.8	5.2
	1996/97	-2.1	-6.8	2.0
	1997/98	7.6	6.9	3.5
	1998/99	3.6	4.1	4.2
	1999/00	0.0	1.5	3.9
	2000/01	9.5	8.2	2.2
1999/2000	1999/00	~	~	~
	2000/01	11.0	9.3	2.0
	2001/02	3.5	4.5	3.1
	2002/03	7.2	6.9	4.7
	2003/04	18.1	4.9	7.5
	2004/05	19.9	25.5	9.0

Base year	Year	LSM growth	Manuf. growth	GDP growth
	2005/06	8.3	8.7	5.8
	2006/07	8.7	8.3	6.8
	2007/08	4.0	4.8	3.7
	2008/09	-8.1	-3.6	1.7
	2009/10	4.8	5.5	3.1
2005/06	2005/06	~	~	~
	2006/07	9.6	9.0	5.5
	2007/08	6.1	6.1	5.0
	2008/09	-6.0	-4.2	0.4
	2009/10	0.4	1.4	2.6
	2010/11	1.7	2.5	3.6
	2011/12	1.1	2.1	3.8
	2012/13	4.2	4.6	3.7
	2013/14[R]	4.0	4.5	4.0
	2014/15[P]	2.4	3.2	4.2

Note: R = revised, P = provisional.
Source: Authors' calculations based on the following data:
(i) for 1957–96: *50 years of Pakistan*, vol. 1 (1947–1997)
(http://www.pbs.gov.pk/sites/default/files/50_years_statistics/vol1/3.pdf);
(ii) for 1997–14: *Pakistan Economic Survey* for various years.

Table A2: Total and NFNO imports as a percentage of GDP

Year	Total imports as percent of GDP	NFNO imports as percent of GDP
1980	19.1	11.8
1981	16.5	10.1
1982	18.2	10.8
1983	17.2	10.3
1984	18.9	11.4
1985	18.5	10.9
1986	16.1	11.3
1987	15.2	10.8
1988	16.5	12.0
1989	18.7	12.4
1990	18.0	11.4
1991	18.3	13.1
1992	21.2	15.0
1993	19.2	13.6
1995	18.5	12.7
1996	19.5	13.1
1997	18.7	12.0
1998	14.8	9.9
1999	16.2	10.7
2000	13.6	7.8
2001	13.4	8.4
2002	14.0	9.2
2003	13.5	9.3
2004	15.9	11.3
2005	19.5	14.0
2006	19.3	13.0
2007	18.6	12.8
2008	20.1	11.5
2009	16.7	10.8
2010	17.2	10.5
2011	18.6	10.9
2012	17.5	10.0
2013	16.8	10.0

Source: Authors' calculations based on data from the United Nations Commodity Trade Statistics database (accessed 10 July 2015).

Table A3: Pakistan's imports from China (as reported by Pakistan and adjusted for underreporting)

US$ million

Year	Total imports from China as reported by Pakistan	Exports to Pakistan as reported by China	Difference between reports
1980	168	NA	NA
1981	180	NA	NA
1982	148	NA	NA
1983	147	NA	NA
1984	145	256.3	111.8
1985	144	175.5	31.4
1986	163	208.2	45.0
1987	232	271.3	39.2
1988	249	281.9	32.6
1989	321	329.4	8.5
1990	337	344.5	7.9
1991	358	432.3	73.9
1992	421	551.4	130.6
1993	437	751.9	315.3
1995	515	788.6	273.3
1996	574	623.0	48.7
1997	585	689.2	104.4
1998	423	523.4	100.7
1999	447	580.6	133.8
2000	550	670.3	120.2
2001	487	815.0	328.0
2002	699	1,242.1	543.6
2003	957	1,855.0	897.7
2004	1,489	2,465.8	977.0
2005	2,349	3,427.7	1,078.3
2006	2,915	4,239.4	1,324.4
2007	4,164	5,831.3	1,667.1
2008	4,738	6,051.1	1,313.0
2009	3,780	5,515.1	1,735.3
2010	5,248	6,937.8	1,690.1
2011	6,471	8,439.7	1,969.1
2012	6,688	9,276.5	2,588.9
2013	6,626	11,019.6	4,393.3

Source: Authors' calculations based on data from the United Nations Commodity Trade Statistics database (accessed 10 July 2015).

Table A4: Structure of LSM, Pakistan (contribution of value added)

Percent

Industry code (2005/06)	Industry	1990/91	2000/01	2005/06
	All industries	100.0	100.0	100.0
17	Manufacture of textiles	26.4	25.4	26.3
1711	Spinning of textiles	15.1	13.7	9.8
1712	Textile fabrics	3.1	3.4	7.3
	Silk and art silk textiles	4.1	3.0	4.1
1713	Finishing of textiles	0.9	1.9	2.2
15	Food products and beverages	15.5	15.9	15.3
1542	Sugar	7.9	4.9	3.9
1514	Vegetable and animal oils and fats	1.7	3.7	3.3
1520	Dairy products	0.3	0.9	2.5
24	Chemicals and chemical products	15.0	16.6	15.9
2412	Fertilizers and nitrogen compounds	4.6	3.7	4.8
2423	Pharmaceuticals	4.6	5.9	4.7
26	Other nonmetallic mineral products	6.6	4.7	6.5
2694	Cement, lime and plaster	6.4	4.5	5.1
18	Wearing apparel	1.4	2.9	4.7
23	Petroleum	3.0	4.8	4.7
34	Motor vehicles and trailers[2]	2.0	3.0	4.5
27	Basic metals	5.6	4.8	4.0
15142	Cotton ginning[1]	1.2	2.9	2.7
21	Paper and paper products	1.6	1.5	2.5
16	Tobacco products	6.4	4.9	2.2
29	Machinery and equipment NEC	2.5	1.3	2.0
31	Electrical machinery and apparatus NEC	4.1	3.6	1.9
35	Other transport equipment[2]	0.6	0.2	1.5
3591	Motorcycles	0.2	0.1	1.0
25	Rubber and plastic products	1.5	1.2	1.0
19	Leather products	1.1	1.5	1.0
	Others	5.7	4.8	3.3

Note: In order to maintain consistency in industry codes across the series of years, the following industries in 2005/06 have been adjusted as follows:
1. Cotton ginning until 2000/01 was given as a separate industry head. In 2005/06, this was included in the food products and beverages industry. Here, it is shown separately with its value deducted from the total for the food products and beverages industry.
2. Until 2000/01, motor vehicles, trailers and other transport equipment were reported under the combined heading of "transport equipment." Here, the two industries are shown separately as reported in 2005/06.
Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years.

Table A5: Structure of LSM, Sindh (contribution of value added)

Percent

Industry code (2005/06)	Industry	1990/91	2000/01	2005/06
	All industries	100.0	100.0	100.0
17	Manufacture of textiles	20.7	17.4	21.0
1711	Spinning of textiles	9.9	6.8	9.8
1712	Textile fabrics	4.0	4.3	5.3
	Silk and art silk textiles	2.5	1.6	0.8
1713	Finishing of textiles	0.9	1.6	2.1
15	Food products and beverages	16.3	11.5	10.9
1542	Sugar	9.0	4.6	4.3
1514	Vegetable and animal oils and fats	2.0	1.8	1.6
1520	Dairy products	0.01	NA	0.01
24	Chemicals and chemical products	17.0	19.3	20.3
2412	Fertilizers and nitrogen compounds	2.3	2.2	3.5
2423	Pharmaceuticals	7.1	9.4	8.3
26	Other nonmetallic mineral products	5.2	1.9	4.9
2694	Cement, lime and plaster	4.9	1.7	3.9
18	Wearing apparel	2.4	3.9	3.2
23	Petroleum	4.6	9.9	9.3
34	Motor vehicles and trailers[2]	3.8	5.8	7.9
27	Basic metals	10.0	9.1	6.3
15142	Cotton ginning[1]	0.6	5.0	3.3
21	Paper and paper products	0.3	0.4	0.3
16	Tobacco products	2.4	3.7	1.2
29	Machinery and equipment NEC	1.2	0.6	1.7
31	Electrical machinery and apparatus NEC	4.9	4.6	2.4
35	Other transport equipment[2]	0.6	0.2	3.3
3591	Motorcycles	NA	NA	2.1
25	Rubber and plastic products	2.0	1.4	1.3
19	Leather products	1.5	2.0	0.5
	Others	6.6	3.3	2.4

Note: In order to maintain consistency in industry codes across the series of years, the following industries in 2005/06 have been adjusted as follows:

1. Cotton ginning until 2000/01 was given as a separate industry head. In 2005/06, this was included in the food products and beverages industry. Here, it is shown separately with its value deducted from the total for the food products and beverages industry.

2. Until 2000/01, motor vehicles, trailers and other transport equipment were reported under the combined heading of "transport equipment." Here, the two industries are shown separately as reported in 2005/06.

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years.

Table A6: Structure of LSM, Punjab (contribution of value added)

Percent

Industry code (2005/06)	Industry	1990/91	2000/01	2005/06	2010/11
	All industries	100.0	100.0	100.0	100.0
17	Manufacture of textiles	33.8	36.3	32.5	26.7
1711	Spinning of textiles	21.7	22.1	10.5	14.5
1712	Textile fabrics	2.8	3.2	8.5	7.8
	Silk and art silk textiles	5.0	4.2	7.3	
1713	Finishing of textiles	1.0	2.7	2.8	0.5
15	Food products and beverages	13.1	16.9	19.4	18.7
1542	Sugar	7.6	6.2	4.2	3.4
1514	Vegetable and animal oils and fats	1.6	1.1	4.7	2.4
1520	Dairy products	0.9	2.7	5.3	5.3
24	Chemicals and chemical products	13.8	14.5	13.6	14.4
2412	Fertilizers and nitrogen compounds	5.9	6.3	7.2	9.0
2423	Pharmaceuticals	2.2	1.7	1.6	1.6
26	Other nonmetallic mineral products	4.7	4.4	4.5	7.0
2694	Cement, lime and plaster	4.6	4.3	3.9	6.3
18	Wearing apparel	0.4	2.5	7.4	4.6
23	Petroleum	1.4	0.02	1.3	1.8
34	Motor vehicles and trailers[2]	0.1	0.4	1.9	0.7
27	Basic metals	1.6	0.8	2.2	2.9
15142	Cotton ginning[1]	2.0	1.1	3.0	0.5
21	Paper and paper products	2.4	2.5	5.0	2.7
16	Tobacco products	13.0	7.2	0.8	8.1
29	Machinery and equipment NEC	4.2	1.9	2.7	1.3
31	Electrical machinery and apparatus NEC	2.7	2.5	0.9	1.9
35	Other transport equipment[2]	0.4	0.3	0.3	0.4
3591	Motorcycles	NA	0.1	0.2	0.3
25	Rubber and plastic products	0.9	0.4	0.3	1.4
19	Leather products	0.9	1.2	1.6	1.5
	Others	4.5	6.9	2.5	5.4

Note: In order to maintain consistency in industry codes across the series of years, the following industries in 2005/06 have been adjusted as follows:

1. Cotton ginning until 2000/01 was given as a separate industry head. In 2005/06, this was included in the food products and beverages industry. Here, it is shown separately with its value deducted from the total for the food products and beverages industry.
2. Until 2000/01, motor vehicles, trailers and other transport equipment were reported under the combined heading of "transport equipment." Here, the two industries are shown separately as reported in 2005/06.

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years.

Table A7: Industrial structure by sophistication scores, Pakistan

	CMI code/description	Sophistication score	Value added share of total (%)			
			1990/91	1995/96	2000/01	2005/06
292	Special purpose machinery	83.24	2.0	1.8	1.5	1.3
343	Parts and accessories for motor vehicles	82.69	-	-	-	0.8
291	General purpose machinery	82.49	0.0	0.0	0.0	0.3
	Total sophistication level 1		2.1	1.9	1.5	2.4
242	Other chemical products	81.46	9.3	9.9	5.7	10.2
331	Medical and measuring	81.37	0.2	0.3	0.5	0.6
210	Paper and paper products	79.86	1.9	1.8	1.7	2.8
160	Tobacco products	79.82	7.5	7.1	5.7	2.5
341	Motor vehicles	79.62	2.4	3.2	3.5	4.2
	Total sophistication level 2		21.4	22.3	17.1	20.2
261	Glass and glass products	75.71	0.8	0.4	0.4	0.7
155	Beverages	70.65	1.7	1.8	2.5	1.2
	Total sophistication level 3		2.5	2.2	2.9	1.9
252	Plastic products	69.20	0.6	0.5	0.9	0.9
359	Transport equipment	68.15	0.3	0.6	0.2	1.2
241	Basic chemicals	67.06	8.6	8.7	10.1	7.7
311	DC motors, generators and transformers	66.27	0.5	0.3	0.1	1.2
271	Basic iron and steel	64.71	6.6	4.8	5.5	4.1
	Total sophistication level 4		16.6	15.0	16.8	15.0
289	Other fabricated metal products	59.13	0.9	0.7	1.4	0.9
369	Manufacturing NEC	54.88	0.6	1.0	1.4	0.6
293	Domestic appliances	54.70	2.4	4.6	0.4	0.7
232	Refined petroleum products	54.51	3.5	3.5	9.3	5.2
202	Products of wood	51.07	0.3	0.3	0.1	0.6
173	Knitted and crocheted fabrics and articles	50.75	0.9	0.9	2.5	1.2
	Total sophistication level 5		8.7	11.0	15.1	9.2
171	Textile spinning, weaving and finishing	46.41	23.2	20.7	22.5	26.1
154	Other food products	44.66	10.9	11.0	7.0	6.1
191	Tanning and dressing of leather	43.37	1.3	0.9	1.7	0.5
269	Nonmetallic products	41.27	8.2	8.4	5.7	6.6
151	Meat, fruit, vegetables, oils and fats	40.99	2.4	3.1	4.6	4.1
181	Wearing apparel, except fur apparel	33.18	1.6	1.6	3.4	5.3
172	Other textiles	30.77	0.7	1.4	0.8	2.0
192	Footwear	29.90	0.5	0.6	0.7	0.5
	Total sophistication level 6		48.8	47.6	46.6	51.2
	Percentage of LSM included		84.0	87.0	86.0	90.0

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years. Sophistication scores obtained from Lall, Weiss, and Zhang (2005).

Table A8: Industrial structure by sophistication scores, Sindh

	CMI code/description	Sophistication score	Value added share of total (%)			
			1990/91	1995/96	2000/01	2005/06
292	Special purpose machinery	83.24	1.3	1.7	0.7	0.7
343	Parts and accessories for motor vehicles	82.69	-	-	-	0.8
291	General purpose machinery	82.49	0.0	0.0	0.0	0.3
	Total sophistication level 1		1.3	1.7	0.7	1.9
242	Other chemical products	81.46	12.8	10.4	13.6	17.1
331	Medical and measuring	81.37	0.0	0.0	0.0	0.2
210	Paper and paper products	79.86	0.3	0.5	0.4	0.3
160	Tobacco products	79.82	2.7	1.3	4.2	1.3
341	Motor vehicles	79.62	4.3	6.5	6.6	7.8
	Total sophistication level 2		20.1	18.7	24.8	26.7
261	Glass and glass products	75.71	0.4	0.3	0.3	0.6
155	Beverages	70.65	0.1	0.6	0.6	0.9
	Total sophistication level 3		0.6	0.9	1.0	1.5
252	Plastic products	69.20	0.8	0.4	0.7	0.9
359	Transport equipment	68.15	0.7	1.3	0.1	1.3
241	Basic chemicals	67.06	6.5	10.2	8.3	5.2
311	DC motors, generators and transformers	66.27	1.5	1.0	0.2	1.9
271	Basic iron and steel	64.71	11.3	9.4	10.1	6.7
	Total sophistication level 4		20.7	22.3	19.4	16.0
289	Other fabricated metal products	59.13	1.9	0.3	0.9	1.0
369	Manufacturing NEC	54.88	0.2	0.3	0.4	0.2
293	Domestic appliances	54.70	2.7	2.4	3.9	0.8
232	Refined petroleum products	54.51	5.2	7.2	11.2	10.2
202	Products of wood	51.07	0.3	0.3	0.3	0.3
173	Knitted and crocheted fabrics and articles	50.75	1.3	1.1	2.5	1.3
	Total sophistication level 5		11.5	11.6	19.3	13.7
171	Textile spinning, weaving and finishing	46.41	18.0	15.6	14.3	19.6
154	Other food products	44.66	12.5	14.3	8.1	7.8
191	Tanning and dressing of leather	43.37	1.6	1.1	2.3	0.5
269	Nonmetallic products	41.27	5.9	6.2	2.2	4.7
151	Meat, fruit, vegetables, oils and fats	40.99	2.9	4.3	2.2	2.1
181	Wearing apparel, except fur apparel	33.18	2.8	2.4	4.4	3.5
172	Other textiles	30.77	1.3	0.9	1.0	2.0
192	Footwear	29.90	0.8	0.1	0.3	0.1
	Total sophistication level 6		45.8	44.9	34.8	40.3
	Percentage of LSM included		88.0	91.0	88.0	91.0

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years. Sophistication scores obtained from Lall, Weiss, and Zhang (2005).

Table A9: Industrial structure by sophistication scores, Punjab

			Value added share of total (%)				
	CMI code/description	**Sophistication score**	**1990/91**	**1995/96**	**2000/01**	**2005/06**	**2010/11**
292	Special purpose machinery	83.24	4.9	1.7	2.2	2.0	1.1
343	Parts and accessories for motor vehicles	82.69	-	-	-	0.3	0.6
291	General purpose machinery	82.49	0.0	0.0	0.0	0.3	0.4
	Total sophistication level 1		4.9	1.8	2.2	2.6	2.1
242	Other chemical products	81.46	6.1	8.9	5.0	4.5	3.3
331	Medical and measuring	81.37				1.1	1.9
210	Paper and paper products	79.86	2.8	3.2	2.9	5.7	3.1
160	Tobacco products	79.82	15.1	10.7	8.2	0.9	9.2
341	Motor vehicles	79.62	0.1	0.4	0.5	1.9	0.1
	Total sophistication level 2		24.0	23.3	16.5	14.1	17.6
261	Glass and glass products	75.71	0.8	0.4	0.3	0.3	0.5
155	Beverages	70.65	0.7	3.1	3.9	1.2	3.7
	Total sophistication level 3		1.5	3.5	4.2	1.5	4.2
252	Plastic products	69.20	0.1	0.4	0.4	0.3	0.6
359	Transport equipment	68.15	0.5	0.5	0.3	0.4	0.4
241	Basic chemicals	67.06	9.9	11.0	11.4	10.9	12.4
311	DC motors, generators and transformers	66.27	0.6	0.6	0.2	0.9	0.2
271	Basic iron and steel	64.71	1.9	1.0	0.8	2.3	3.2
	Total sophistication level 4		13.0	13.5	13.2	14.7	16.8
289	Other fabricated metal products	59.13	0.3	0.2	1.6	0.4	0.4
369	Manufacturing NEC	54.88	1.2	1.3	3.0	1.1	2.4
293	Domestic appliances	54.70	1.9	2.4	2.5	0.7	1.9
232	Refined petroleum products	54.51	1.6	0.4	0.0	1.4	2.0
202	Products of wood	51.07	0.2	0.2	0.1	0.3	0.1
173	Knitted and crocheted fabrics and articles	50.75	0.6	1.0	2.9	1.3	0.2
	Total sophistication level 5		5.9	5.6	10.0	5.2	7.0
171	Textile spinning, weaving and finishing	46.41	30.3	27.5	32.1	33.1	26.0
154	Other food products	44.66	9.3	11.1	8.0	5.7	4.6
191	Tanning and dressing of leather	43.37	1.0	1.1	1.4	0.7	1.0
269	Nonmetallic products	41.27	5.8	7.6	5.3	4.8	7.4
151	Meat, fruit, vegetables, oils and fats	40.99	2.1	2.4	1.8	5.5	2.9
181	Wearing apparel, except fur apparel	33.18	0.5	1.2	2.9	8.4	5.3
172	Other textiles	30.77	0.6	0.5	1.1	2.5	4.2
192	Footwear	29.90	1.2	1.1	1.4	1.1	0.7
	Total sophistication level 6		50.7	52.4	53.9	61.8	52.2
	Percentage of LSM included		86.0	89.0	88.0	88.0	88.0

Source: Authors' calculations based on data from the Census of Manufacturing Industries for various years. Sophistication scores obtained from Lall, Weiss, and Zhang (2005).

Methodology for calculating the sophistication index industrial structure

The Census of Manufacturing Industries (CMI) classification is based on the Pakistan Standard Industrial Classification (PSIC). This had to be matched to the Standard International Trade Classification (SITC), which is what Lall et al. (2005) use to assign sophistication scores to different industries.

In order to obtain sophistication scores against the 3-digit CMI level, only those industries were considered that accounted for 0.5 percent or more of the total industries' value added in the CMI.[19] Industries for which a sophistication score was not available in the sophistication classification prepared by Lall et al. (2005) were omitted. For the selected set[20] of industries for each 3-digit CMI, all products at the 4-digit or 5-digit CMI level were identified that contributed at least 5 percent of the value added of that industry at the 3-digit CMI level. As an example, below we describe the steps involved in calculating the weighted average sophistication score for one industry at the CMI 3-digit level, i.e., other chemical products (PSIC 242). The 4-digit or 5-digit CMI level description was matched[21] to the 3-digit SITC level.

CMI (PSIC)	Description	% Share value added	SITC	Description
242	Other chemical products			
2422	Paints, varnishes, printing ink	5.43	533	Pigments paints, varnishes and related materials
2423	Pharmaceuticals	52.03	541	Medicinal and pharmaceutical products
2424	Soaps and detergents	15.13	554	Soap, cleansing and polishing preparations
2429	Other chemical products	26.21	598	Miscellaneous chemical products

[19] We consider those 4-digit and 5-digit level codes in the CMI that contribute most to the 3-digit level in the CMI in terms of the weights calculated, adding up the weights of the industries considered to make up the denominator. The individual weights of the same 4-digit or 5-digit industries are used as the numerator.

[20] Despite these omissions, the value-added share of industries included in the structure ranges from 84 to 91 percent of the total CMI value added for that year.

[21] We assign weights to each of the 4-digit and 5-digit level CMI codes under 3-digit level in the CMI. The weights are calculated as: $\left[\frac{Value\ added\ of\ 4\ or\ 5\ digit\ CMI\ codes\ under\ the\ 3\ digit\ code}{3\ digit\ CMI\ code\ for\ the\ same\ industry}\right]$.

The percentage value-added shares of the matched 4-digit or 5-digit CMI level in each industry at the 3-digit level in the CMI were taken as weights. These weights were used to calculate the weighted proportion of each 3-digit SITC level as shown below:

SITC code	Percent share valued added (weights)	Weighted proportion
533	5.430	0.055
541	52.03	0.531
554	15.13	0.154
598	26.46	0.260
	98.06	1.000

Note: Formula used for code 533 is: $\left[\frac{\%\text{ Share valued added of 533}}{\text{Total sum of weights}}\right]$

We multiplied the weighted proportion of each 3-digit SITC level by its sophistication score given by Lall et al. (2005), and added the products to obtain this weighted sophistication score against each industry at the 3-digit CMI level as shown in the table below:

Industrial code	Lall et al. (2005) sophistication score 2000	Weighted proportion	Contribution to CMI sophistication score
533 (SITC)	79.61	0.055	4.41
541 (SITC)	83.91	0.531	44.52
554 (SITC)	69.44	0.154	10.72
598 (SITC)	83.99	0.260	21.81
242 (CMI/PSI)		1.000	81.46

Note: Formula used for code 533 is: [Sophistication score 2000 for 533 * weighted proportion 533]
Formula for weighted average score is: $\sum$ [Sophistication score 2000 * weighted proportion]

After quantifying sophistication scores for all 3-digit CMI codes and using the same methodology, we allocated these scores among six groups of different sophistication levels ranging from 1 to 6 according to Lall et al. (2005), where 1 represents the most sophisticated industries and 6 represents the least so.

The Lahore Journal of Economics
20 : SE (September 2015): pp. 143–182

The Economic Impact of New Firms in Punjab

Azam Chaudhry* **and Maryiam Haroon****

Abstract

Despite the consensus that new firms have a significant economic and socioeconomic impact, there is very little empirical evidence to support this claim in the Pakistani context. In this paper, we start by looking at how new firm entry varies across districts in Punjab over time. We then look at how the establishment of different types of firms across these districts has affected district-level socioeconomic outcomes in the province. We find that firm entry has a positive impact on economic outcomes such as employment and enrollment, and that this impact can vary by the scale of the firms that enter.

Keywords: Firms, entry, Punjab, Pakistan.

JEL classification: M13, O47.

1. Introduction

Discussions on economic growth and socioeconomic development are closely interlinked. One aspect of this debate that appears in much of the theoretical and empirical literature is the idea that new firms create employment opportunities and growth, followed by socioeconomic development. There is, however, little empirical evidence on the actual socioeconomic impact of new firms on economic growth, except for macroeconomic analyses that look at how the overall level of industrial activity affects overall growth rates.

There are many problems with this approach. First, when one looks at country-level industrial activity and economic growth, one ignores the differences across regions. It is very possible that industrial activity has a significantly different impact in one region compared to another, both because of the characteristics of the region and the characteristics of the industries located there. Second, it is very difficult to determine if industrial activity causes development, is caused by development, or (as is most likely) if both cause each other. Higher industrial output in a region

* Professor and Dean, Department of Economics, Lahore School of Economics, Pakistan.
** Teaching Fellow and PhD student, Department of Economics, Lahore School of Economics.

can cause income levels to rise, which in turn increases enrollment rates, providing more skilled labor for industries and consequently attracting new industries to enter the region. Finally, macroeconomic analyses tend to focus on overall industrial output as opposed to the nature of the firms producing this output. So, economists have looked at the relationship between the value of industrial output and economic growth, but ignored the types of firms that produce this output.

In this paper, we use a unique dataset for Punjab to examine how the entry of different types of firms in a district over time affects socioeconomic outcomes. In particular, we see how firm entry affects district-level economic outcomes such as industrial employment, primary school enrollment rates, and the number of new hospitals. We take the analysis a step further by disentangling the impact of different types of firms (small, medium, and large) on these economic outcomes. We also look at how the entry of firms that produce export goods affects these outcomes compared to those producing goods for the local market. The premise here is that the entry of different types of firms has differing impacts on development.

Although we employ a standard empirical approach as used in the literature, one has to be cautious at the outset in drawing conclusions about economic causality. So, if we find that the entry of large industrial firms has an impact on primary enrollment rates across districts in Punjab, we cannot say with absolute certainty that this is the only factor that has caused primary enrollment to rise. There could be a host of other endogenous and exogenous factors affecting both simultaneously, even if we prove that primary enrollment rates are positively correlated with the entry of large firms across districts. That said, our analysis adds to the discussion on the socioeconomic impact of industrial activity in the Pakistani context.

The setup of this paper is as follows. Section 2 looks briefly at the geographic distribution of employment and firms by size in Punjab. Section 3 reviews the literature on measuring the impact of new firm entry on employment. Section 4 presents the methodology followed. Section 5 gives the results of the empirical analysis and Section 6 discusses these results.

2. Geographic Distribution of Industrial Employment and Firms by Size in Punjab

We begin by looking at maps that explain the regional breakdown of industrial employment and firm distribution by size across districts of

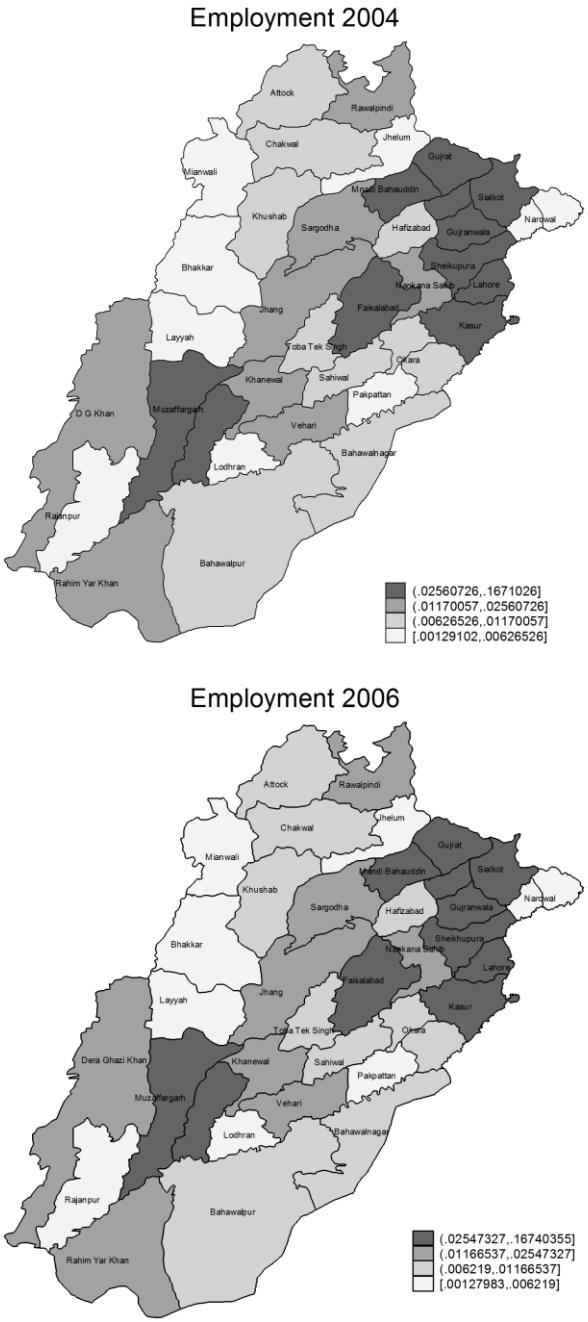
Punjab. For these maps, we use the Government of Punjab's Directory of Industries (DOI) for 2010, 2006, and 2002; this is a firm-level dataset that covers more than 18,000 manufacturing firms.

The district-level breakdown of industrial employment is given in Figure 1 as a ratio of total employment in the province for 2010, 2006, and 2004. The darker-shaded districts have a higher share of industrial employment. In 2010, the greatest share of industrial employment was concentrated in districts such as Lahore, Kasur, Faisalabad, Sheikhupura, Gujranwala, Sialkot, and Gujrat; districts such as Pakpattan, Layyah, Lodhran, Bhakkar, and Mianwali had a smaller share of industrial employment. This distribution of employment in the industrial sector was approximately the same in 2004 and 2006.

Figure 2 indicates which districts had the highest share of small, medium, and large firms as a proportion of total firms in the district. In particular, we see that, in 1995–2010, the highest concentration of small firms was in Sialkot, Hafizabad, Gujranwala, Toba Tek Singh, Okara, and Pakpattan. The largest concentration of medium firms was in Rawalpindi and in certain districts in southern Punjab (Dera Ghazi Khan, Rajanpur, and Rahimyar Khan). Finally, the highest concentration of large firms was primarily in central Punjab in Lahore, Faisalabad, and Sheikhupura.

Figure 3 shows the breakdown of districts with the highest proportion of firms producing goods for export. This breakdown reinforces what is generally known: that most export good producers are in central Punjab in districts such as Lahore, Faisalabad, Sialkot, Gujranwala, and Kasur. Comparing these maps, we also see that those districts with the highest proportion of exporting firms account for the highest employment shares.

Figure 1: District-level breakdown of industrial employment, Punjab



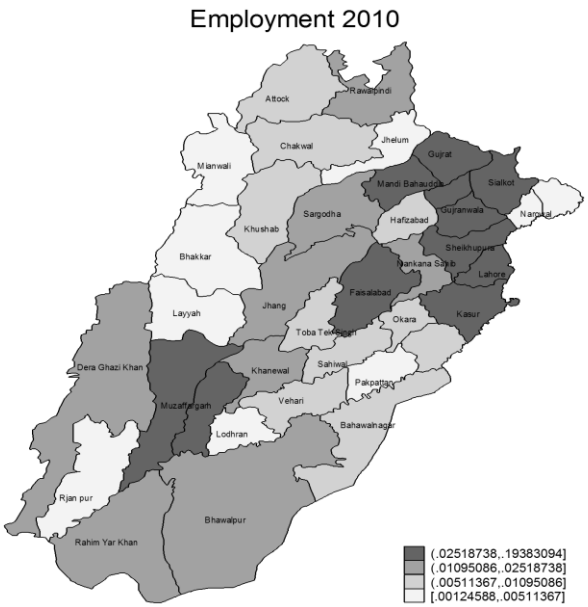
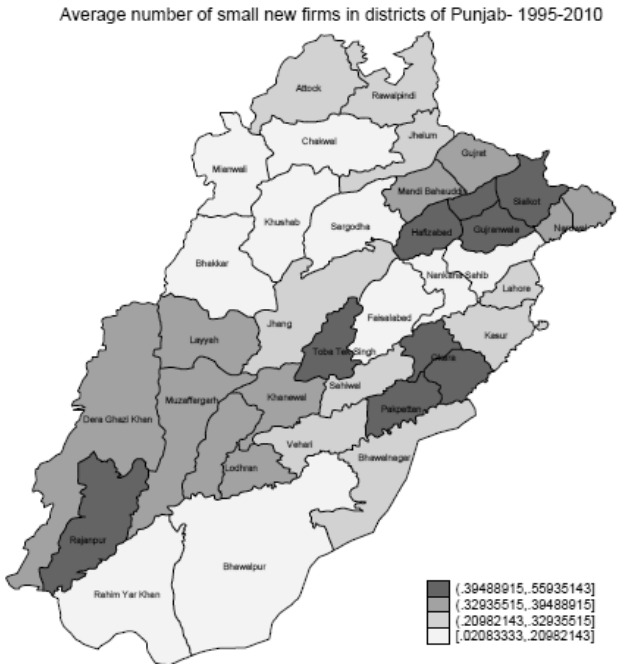
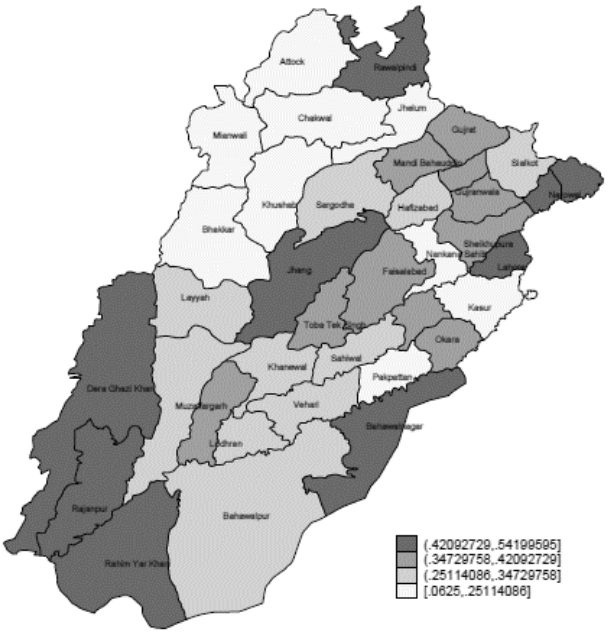


Figure 2: Districts with the highest share of small, medium, and large firms as a proportion of total firms, Punjab



Average number of medium new firms in districts of Punjab -1995-2010



Average number of large new firms in districts of Punjab - 1995-2010

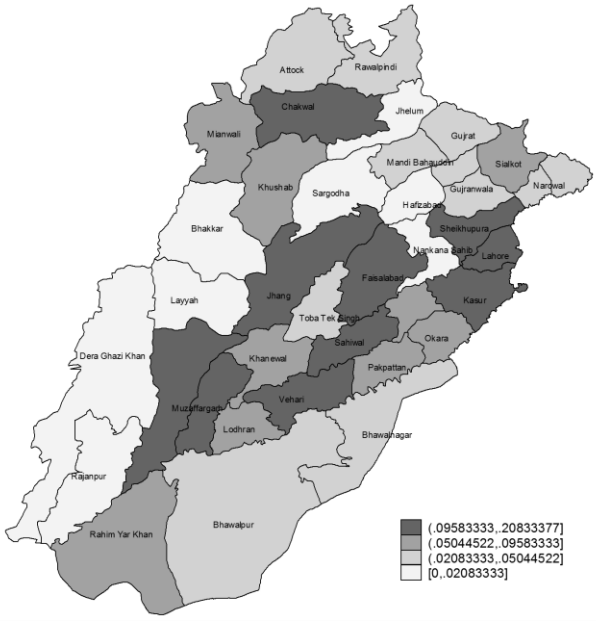
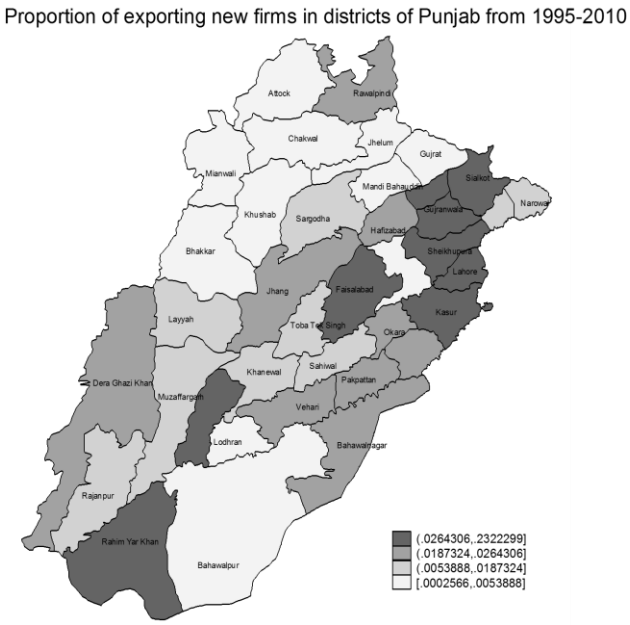


Figure 3: Districts with the highest proportion of export good-producing firms, Punjab



3. Literature Review

The impact of new firm entry on regional development is complex because there are numerous factors at play. Apart from the direct effects of firms entering a market, such as higher output and employment, there are myriad indirect effects, such as larger or more competitive markets after firm entry (or the opposite if a new firm enters and eliminates competition), more innovation as a result of new firm entry, greater variety and quality of products, and the development of ancillary goods and services. Moreover, it is extremely difficult to separate out the impact of macroeconomic factors on regional development from the impact of firm entry: if regional employment goes up, is it because of some positive macroeconomic shock that may affect regions differently or is it because of new firm entry? The most likely answer is that it is a combination of both, with each of these factors affecting the other; this makes the process of isolating the impact of firm entry on regional development difficult.

For this reason, the literature on new firm entry is varied: some studies look at the impact of economic fluctuations on regional growth (see Callejón & Segarra, 2000; Bosma & Nieuwenhuijsen, 2002; Caves, 1998), while others examine the impact of firm entry and economic fluctuations

on different economic sectors such as manufacturing and services (see Acs & Armington, 2003; Bosma & Nieuwenhuijsen, 2002; Geroski, 1995). The more recent literature focuses on the impact of firm entry across regions on regional employment (or unemployment).

Acs and Armington (2003) and Reynolds (1994, 1999) look at the impact of firm entry on regional employment changes in the US. They find the impact is significant, though varied over time. Similarly, Ashcroft and Love (1996) and Mueller, van Stel, and Storey (2008) find that the impact of firm entry on regional employment in the UK varies by region. Mueller et al. (2008) conclude that this impact is positive and significant for England, but not significant for Scotland. Foelster (2000) finds that firm entry has a significantly positive impact on self-employment rates in Sweden. Brixy (1999) shows that new firm entry had a significant impact on regional employment in East Germany early on after reunification, while van Stel and Suddle (2008) find that new firm entry has a significant impact on changes in regional employment in the Netherlands.

What differentiates the literature on regional economic growth and new firm entry from that on regional employment changes and new firm entry is that the latter focuses on how the impact of new firm entry can change over time: new firms entering today may have a different impact compared to one, two, or three years from now. Fritsch and Mueller (2004, 2007), who were among the first to look at the lagged effects of firm entry on regional employment, explain that, when a firm enters a market, it can have different impacts on regional development at different points in time. The "direct" positive effect on employment may be followed by a "displacement" effect whereby new firm entry can lead to the exit of other firms (due to differences in productivity, scale, and technology), in turn causing employment to fall. Finally, the firm's entry can potentially stimulate surviving firms into performing better and expanding; this "induced" effect increases employment.

Fritsch and Mueller (2004, 2007) look at the differential impact over time of firm entry by testing if regional employment is a function of the present and lagged values of firm entry. By regressing changes in regional employment rates on these values, they determine how the impact of any firm entering a market is different today compared to one year from now, two years from now, and so on. More recent work has started looking at how the entry of different types of firms affects employment. Baptista and Preto (2011) show that the impact on employment of knowledge-based firm entry is different from that of other firms, while van Stel and Suddle

(2008) look at the differential impact on employment of manufacturing vis-à-vis nonmanufacturing firms entering regional markets.

Our work takes this literature and extends it, making the study one of the first attempts to look at the impact of firm entry on changes in employment rates in a developing country context. In order to control for regional heterogeneity, we include regional fixed effects. We also look at the impact on regional employment of overall firm entry as well as breaking these firms down into small, medium, and large firms and into exporting versus nonexporting firms. In other words, we see if small firms entering a regional market have a different impact on regional employment compared to medium and large firms, and whether the entry of exporting firms has a different impact on regional employment compared to nonexporting firms.

We take a different route from the rest of the literature. Arguing that new firm entry can have a significant impact not just on regional employment, but also on regional socioeconomic development in a country such as Pakistan, we look at the impact of new firm entry on other regional characteristics, including primary school enrollment, the number of primary schools, and the number of hospitals. We do this to see if new firm entry has spillover effects from employment to household outcomes.

This may be considered a more tenuous series of relationships than just the impact of firm entry on employment (which is relatively straightforward) because so many more unobserved (at least in this case) factors may affect some of these socioeconomic variables. However, even if we cannot prove causality, we can at least prove correlation: we might not be able to say definitively that new firm entry causes a rise or fall in primary school enrollment at the regional level, but at least we can say that new firm entry is correlated with a rise or fall in primary school enrollment. This in itself is important from both the academic's point of view as well as from the policymaker's point of view.

4. Methodology

The DOI dataset for 2010, 2006, and 2002 includes information on each firm's year of establishment, employment level, initial investment, location, product manufactured, and industry. We use these data to construct measures of the district-level growth in employment, firm birth, and average firm size. We also use the Punjab Development Statistics dataset for 2006 to 2012 (collected by the Punjab Bureau of Statistics) on health indicators, education indicators, population, and the area of each

district. The employment data it provides is used as a robustness check for estimations.

The empirical analysis follows the standard estimation procedure discussed in the firm entry and regional development literature. The dependent variables are growth in employment or primary enrollment. The independent variables are the contemporaneous rate of firm entry and lagged values of firm entry. The control variables include population density and average firm size in a district.

The first set of regressions includes the standard regressions that measure the impact of firm entry over time on district-level industrial employment. For this reason, we take the growth rate in industrial employment in the districts of Punjab over time as the dependent variable and the number of firms that have entered each district in this period. As discussed above, the standard methodology is to use lagged values of the number of firms that have entered each district over time as well as a fixed effect to control for district-level fixed effects. As per standard practice, we use up to 10 lags of the independent variable to take into account the possibility that a firm entering in one year can affect employment in the following years.

The second set of regressions deviates from the literature in an interesting way. Since we know that small firm entry has a different impact on employment compared to large firm entry – not only because of the obvious difference in the number of workers employed by different sized firms, but because of the spillover effects from firm entry, such as increased demand for ancillary goods and services – we divide district-level firm entry over the time period into the entry of small, medium, and large firms (characterized by employment). This allows us to separate out the effects of firm entry based on firm size. In this set of regressions, we also control for district-level differences by including fixed effects as well as lagged values of the number of firms entering each district.

The third set of regressions looks at the differing impact of the entry of firms that produce goods for export compared to firms that produce goods for the domestic market. As Chaudhry and Haseeb (2014) show, exporting firms tend to be different from nonexporting firms in terms of productivity and size, and so, we estimate the effect of district-level firm entry on the growth in employment. As above, we include lagged values of the number of firms that have entered as well as fixed effects.

The fourth set of regressions deviates liberally from the standard literature: in the context of Pakistan, we argue that firm entry not only impacts employment, but also other socioeconomic outcomes such as education and health. For example, there is a significant body of literature showing how the creation of firms can increase school enrollment through higher incomes and other factors, such as parents wanting to educate their children so they are able to find manufacturing jobs. At the same time, many studies indicate that the entry of new firms can lead to higher levels of child labor, which in turn can decrease enrollment rates. To test for this, we estimate the impact of firm entry at the district level on district-level primary school enrollment and number of schools. Again, we include fixed effects and lagged values of the independent variable.

Similarly, the fifth set of regressions looks at how healthcare is affected by firm entry. As in the regressions above, we test to see if the growth in number of hospitals is a function of the entry of new firms in a district over time. We extend these basic models by testing if primary school enrollment and the number of primary schools are differentially affected by the size of the firm entering (small, medium, or large) in our sixth model, and by testing if the district-level number of hospitals is differentially affected by the size of the firm entering (small, medium, or large) in our seventh model.

Finally, the last set of regressions determines the impact on school enrollment and the number of schools over time of the entry of firms producing exportable goods across districts in Punjab.

5. Results

The first set of regressions focuses on the overall impact of firm entry on employment growth across districts in Punjab (Table 1). As the results show, the average size of entrants has a negative relationship with growth in employment, which means that, as larger firms enter a district, employment growth decreases. The results also show that, at an aggregate level, firm entry does not affect employment over the time period.

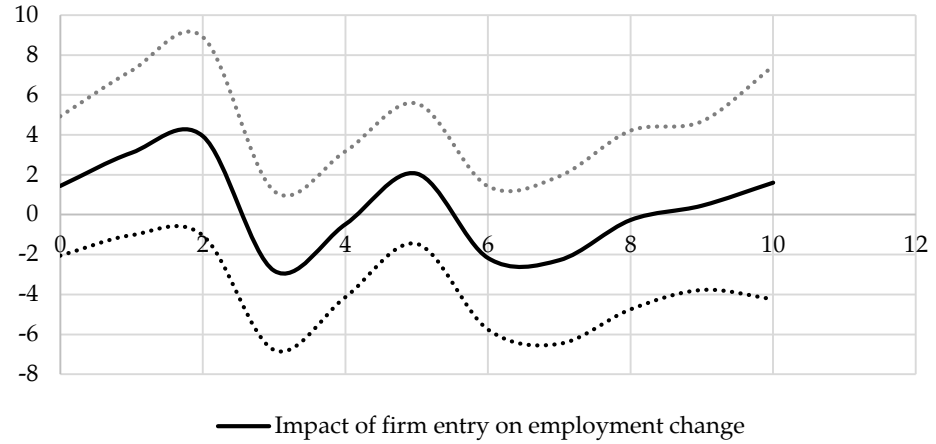
Table 1: Impact of firm entry on employment across districts in Punjab

Variable	Employment growth
Population density	0.00696
	(0.0157)
Average firm size	-0.105**
	(0.0509)
Firm birth t	1.437
	(3.488)
Firm birth t–1	3.096
	(4.119)
Firm birth t–2	3.935
	(4.970)
Firm birth t–3	-2.802
	(3.978)
Firm birth t–4	-0.481
	(3.652)
Firm birth t–5	2.057
	(3.515)
Firm birth t–6	-2.168
	(3.588)
Firm birth t–7	-2.277
	(4.196)
Firm birth t–8	-0.266
	(4.476)
Firm birth t–9	0.450
	(4.223)
Firm birth t–10	1.603
	(5.835)
Constant	3.513
	(11.47)
R-squared	0.064
District fixed effects	Yes

Note: Standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1
Dependent variable
Employment growth = (employment in region *i* at time *t* – employment in region *i* at time *t* – 2)/employment in region *i* at time *t* – 2
Independent variables
Firm birth = (new firms in region *i* at time *t*/total new firms in Punjab at time *t*)
Population density = (population in region *i* at time *t*/area of a region)
Average firm size = (average size of firms in region *i* at time *t*)
Source: Authors' calculations.

Figure 4 illustrates the impact of overall firm entry on district-level employment in Punjab. We see a slight rise in district-level employment after firm entry, followed by a fall and then a rise. This may reflect the idea discussed above concerning the fluctuating impact of firm entry on employment over time. As mentioned, the impact is not statistically significant.

Figure 4: Impact of all firm entry on district-level employment in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

The second set of results shows the impact of firm entry on employment growth when firms are broken down into small, medium, and large enterprises. Columns 1 to 3 in Table 2 show the impact of small, medium, and large firm entry on employment growth across districts. Column 4 indicates the impact of all firms simultaneously on employment growth across districts. The results show that small and medium firms are associated with higher employment growth at the district level. The combined specification shows that the entry of large firms does not lead to higher employment growth over time.

Looking more closely at the coefficients of the lagged variables, we see that, on average, it takes about three years for small firm entry to increase employment growth and a year for the entry of medium firms to do so, although the employment impact of small firms is larger. So the entry of small firms has had the greatest impact on employment growth across districts in Punjab, but this impact occurs faster when medium firms enter.

Table 2: Impact of small, medium, and large firm entry on employment across districts in Punjab

	Employment growth					
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Population density	-0.00343	0.00599	0.0102	0.00381	0.00709	0.0151
	(0.0166)	(0.0151)	(0.0164)	(0.0145)	(0.0193)	(0.0193)
Average firm size	-0.0987**	-0.114**	-0.120**	-0.140***	-0.0802	-0.0978*
	(0.0465)	(0.0461)	(0.0494)	(0.0483)	(0.0507)	(0.0527)
Small firm birth t	3.423				4.687*	4.758**
	(2.278)				(2.383)	(2.403)
Small firm birth t–1	3.118				4.471*	4.222*
	(2.189)				(2.291)	(2.295)
Small firm birth t–2	-3.261				-1.673	-1.340
	(2.247)				(2.529)	(2.550)
Small firm birth t–3	6.118***				5.349**	5.339**
	(2.031)				(2.253)	(2.284)
Small firm birth t–4	-1.655				-0.950	-0.334
	(1.874)				(2.143)	(2.197)
Small firm birth t–5	0.904				0.643	1.397
	(1.800)				(2.199)	(2.286)
Small firm birth t–6	-0.389				-0.0267	0.242
	(1.682)				(1.953)	(1.989)
Small firm birth t–7	0.00645				1.195	1.398
	(1.517)				(1.741)	(1.750)
Small firm birth t–8	-0.0842				-0.134	0.836
	(1.607)				(1.917)	(1.977)
Small firm birth t–9	-1.917				-1.028	-1.780
	(1.627)				(1.997)	(2.038)
Small firm birth t–10	1.460				-0.475	-0.564
	(1.739)				(2.346)	(2.367)
Medium firm birth t		0.570			0.830	1.467
		(1.400)			(1.534)	(1.633)
Medium firm birth t–1		4.286***			3.570**	3.756**
		(1.491)			(1.649)	(1.695)
Medium firm birth t–2		3.571**			1.733	1.963
		(1.618)			(1.822)	(1.880)
Medium firm birth t–3		-0.371			-1.880	-1.054
		(1.668)			(1.836)	(1.907)
Medium firm birth t–4		0.798			-0.748	0.791
		(1.773)			(2.027)	(2.087)
Medium firm birth t–5		0.472			-0.667	0.769
		(1.716)			(2.023)	(2.076)

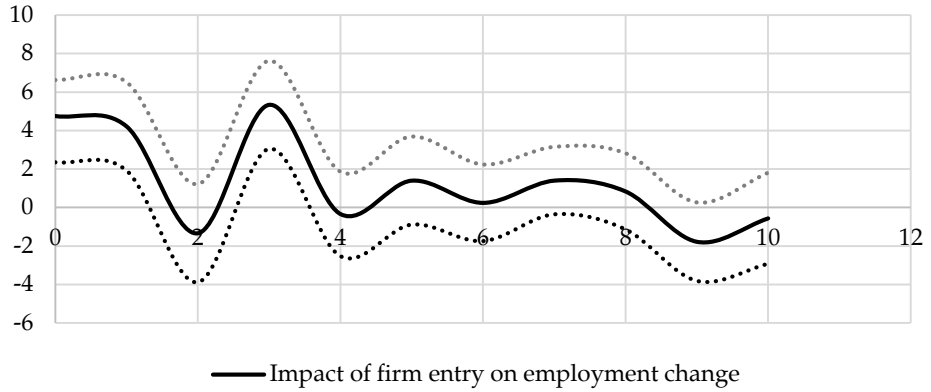
	Employment growth					
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Medium firm birth t–6		1.802			0.391	1.780
		(1.697)			(2.046)	(2.133)
Medium firm birth t–7		2.400			2.830	3.785*
		(1.776)			(2.101)	(2.154)
Medium firm birth t–8		-0.233			0.381	1.224
		(1.859)			(2.136)	(2.169)
Medium firm birth t–9		0.309			0.628	1.203
		(2.118)			(2.520)	(2.534)
Medium firm birth t–10		-2.236			-2.573	-2.385
		(2.252)			(2.881)	(2.885)
Large firm birth t			-2.484		-1.981	-1.480
			(3.196)		(3.322)	(3.380)
Large firm birth t–1			-1.281		0.918	-0.219
			(3.257)		(3.436)	(3.556)
Large firm birth t–2			-4.639		-3.245	-4.839
			(3.387)		(3.419)	(3.427)
Large firm birth t–3			-3.853		-4.074	-8.363**
			(3.566)		(3.608)	(3.816)
Large firm birth t–4			-1.259		-1.221	-0.773
			(3.785)		(3.882)	(3.923)
Large firm birth t–5			-2.085		-2.136	-1.380
			(3.594)		(3.775)	(3.826)
Large firm birth t–6			-4.066		-2.906	-2.590
			(4.057)		(4.233)	(4.334)
Large firm birth t–7			-5.588		-1.635	-2.008
			(4.217)		(4.466)	(4.530)
Large firm birth t–8			0.117		2.569	1.500
			(3.951)		(4.244)	(4.252)
Large firm birth t–9			1.785		2.809	0.968
			(4.145)		(4.462)	(4.673)
Large firm birth t–10			-4.056		-0.578	-2.194
			(4.818)		(5.023)	(5.202)
Other firm birth t				14.59**		18.34***
				(5.762)		(6.218)
Other firm birth t–1				19.15**		27.22***
				(7.932)		(8.448)
Other firm birth t–2				2.896		8.827
				(7.746)		(8.406)
Other firm birth t–3				6.909		6.027
				(7.538)		(8.366)
Other firm birth t–4				10.61		9.298

	Employment growth					
Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
				(7.778)		(8.531)
Other firm birth t–5				10.35		10.44
				(7.502)		(8.347)
Other firm birth t–6				6.430		10.60
				(7.974)		(8.353)
Other firm birth t–7				2.355		4.441
				(8.112)		(8.792)
Other firm birth t–8				7.526		12.67
				(8.082)		(9.150)
Other firm birth t–9				8.290		2.899
				(10.21)		(10.73)
Other firm birth t–10				0.0615		11.21
				(11.46)		(12.15)
Constant	11.14	0.896	5.062	7.106	1.544	-6.769
	(12.13)	(9.963)	(10.43)	(9.713)	(14.00)	(14.30)
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1
Dependent variable
Employment growth = (employment in region *i* at time *t* – employment in region *i* at time *t* – 2)/employment in region *i* at time *t* – 2
Independent variables
Small firm birth = (new firms with fewer than 10 employees in region *i* at time *t*/total new small firms in Punjab at time *t*)
Medium firm birth = (new firms with 10 or more employees and fewer than 50 in region *i* at time *t*/total new medium firms in Punjab at time *t*)
Large firm birth = (new firms with 50 or more employees in region *i* at time *t*/total new large firms in Punjab at time *t*)
Other firm birth = (new firms with no employment reported in region *i* at time *t*/total new firms whose employment is not reported in Punjab at time *t*)
Population density = (population in region *i* at time *t*/area of a region)
Average firm size = (average size of firms in region *i* at time *t*)
Source: Authors' calculations.

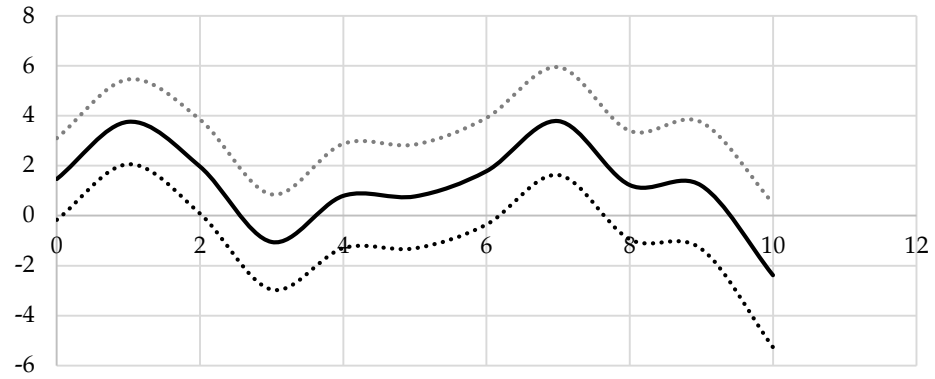
These results are illustrated in Figures 5, 6, and 7. Figure 5 shows that the change in district-level employment increases as soon as small firms enter the market; this decreases and then increases once again. On average, there is a significant fall in the growth rate of employment a few years after a large firm enters the market, and this impact is greater than the employment impact of a small entrant. Finally, the entry of a medium firm tends to increase the growth rate of employment about a year after entry, though this impact dissipates after a year.

Figure 5: Impact of small firm entry on district-level employment in Punjab



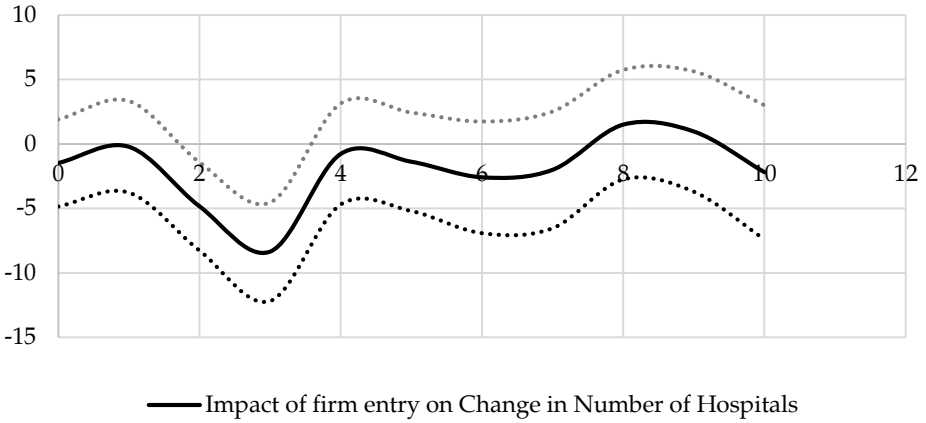
Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 6: Impact of medium firm entry on district-level employment in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 7: Impact of large firm entry on district-level employment in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

The third set of results in Table 3 analyzes the impact of entrants that produce exportable goods on employment growth over different time periods. The results show that the entry of export good producers has a significant positive impact on employment growth; this impact is significant across multiple periods. Specifically, employment growth increases a year after the entry of export good-producing firms and this persists three, five, six, and seven years later. The entry of export good producers thus has a significant and persistent positive impact over time.

Table 3: Impact of export good-producing firm entry on employment across districts in Punjab

	Employment growth		
	2005–08	**2007–10**	**2006–10**
Variable	**(1)**	**(2)**	**(3)**
Population density	0.0127	-0.0347	0.0280
	(0.0672)	(0.0615)	(0.0348)
Average firm size	-0.122*	-0.443**	-0.132**
	(0.0632)	(0.198)	(0.0629)
Firm birth t	-0.223	0.0692	0.0207
	(0.263)	(0.315)	(0.230)
Firm birth t–1	0.486*	0.418	0.431*
	(0.291)	(0.268)	(0.225)
Firm birth t–2	0.151	0.191	-0.268
	(0.203)	(0.313)	(0.198)
Firm birth t–3	0.433*	-0.454	0.0549
	(0.239)	(0.289)	(0.157)
Firm birth t–4	0.311	-0.244	-0.166
	(0.232)	(0.186)	(0.168)
Firm birth t–5	0.427**	-0.519**	-0.147
	(0.208)	(0.245)	(0.152)
Firm birth t–6	0.351**	-0.324	-0.159
	(0.177)	(0.224)	(0.136)
Firm birth t–7	0.300*	-0.370*	-0.113
	(0.171)	(0.195)	(0.132)
Firm birth t–8	0.116	-0.331*	-0.0620
	(0.311)	(0.181)	(0.125)
Firm birth t–9	-0.115	-0.306*	-0.124
	(0.308)	(0.165)	(0.129)
Firm birth t–10	0.0775	0.105	0.0670
	(0.0859)	(0.304)	(0.220)
Constant	-13.57	67.85	-3.787
	(41.52)	(46.19)	(22.93)
R-squared	0.113	0.195	0.085
District fixed effects	Yes	Yes	Yes

Note: Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Dependent variable

Employment growth = (employment in region *i* at time *t* – employment in region *i* at time *t* – 2)/employment in region *i* at time *t* – 2

Independent variables

Firm birth = (new firms producing export goods in region *i* at time t/total new firms in Punjab at time *t*)

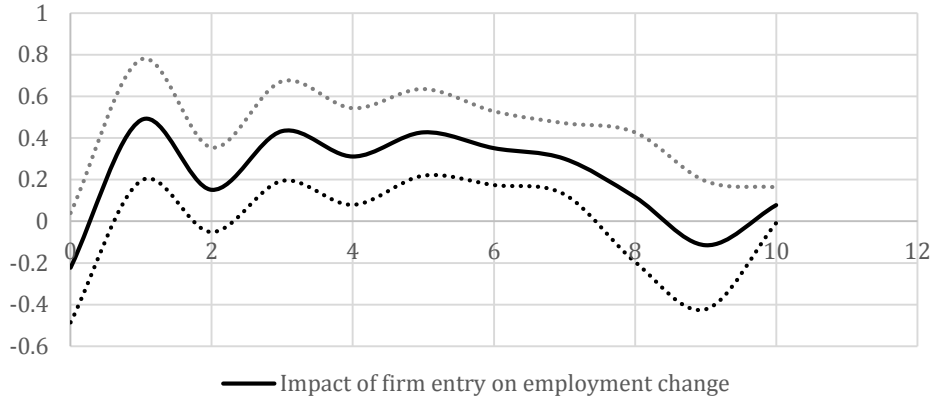
Population density = (population in region *i* at time *t*/area of a region)

Average firm size = (average size of firms in region *i* at time *t*)

Source: Authors' calculations.

Figure 8 shows that, as an exporting firm enters, the rate of change in employment increases by about 0.5 percent after a year; this impact persists over many years.

Figure 8: Impact of entry of exporting firms on district-level employment in Punjab, 2005–08



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Next, we look at how firm entry affects district-level school enrollment and the number of schools in a district over time. The results in Table 4 show that firm entry has a significant and positive impact on both variables. The impact of firm entry takes an average of about two years to materialize in either case and the impact on the number of schools persists over time.

Table 4: Impact of firm entry on educational outcomes across districts in Punjab

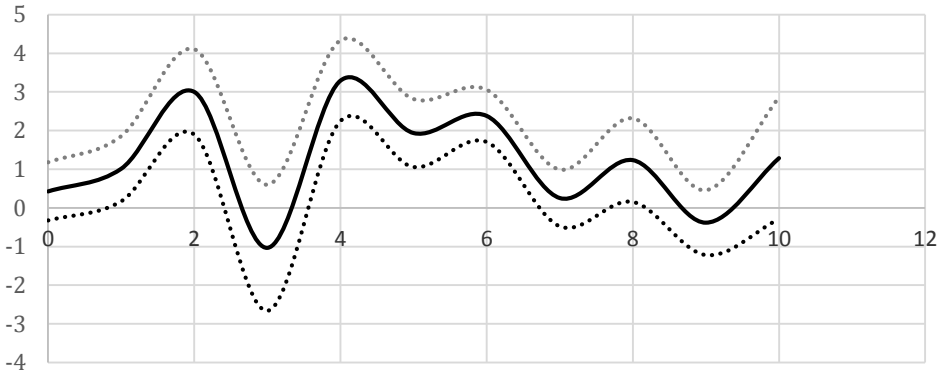
	Number of primary schools		Primary school enrollment	
Variable	**(1)**	**(2)**	**(3)**	**(4)**
Firm birth t	0.427	0.205	7.939	7.124
	(0.753)	(0.683)	(14.19)	(12.77)
Firm birth t–1	1.013	1.334*	-19.30	-18.25
	(0.843)	(0.735)	(15.90)	(13.74)
Firm birth t–2	3.001***	3.190***	39.56*	39.10*
	(1.105)	(1.077)	(20.83)	(20.14)
Firm birth t–3	-1.033	-0.973	-12.51	-11.69
	(1.632)	(1.587)	(30.76)	(29.66)
Firm birth t–4	3.292***	3.381***	15.17	14.27
	(1.045)	(0.980)	(19.71)	(18.32)
Firm birth t–5	1.937**	1.848**	-22.38	-22.79
	(0.880)	(0.861)	(16.60)	(16.09)
Firm birth t–6	2.381***	2.536***	-12.70	-11.82
	(0.676)	(0.592)	(12.75)	(11.07)
Firm birth t–7	0.256	0.147	1.580	2.048
	(0.734)	(0.670)	(13.84)	(12.52)
Firm birth t–8	1.236	1.064	-23.25	-22.65
	(1.082)	(0.996)	(20.40)	(18.62)
Firm birth t–9	-0.382		-2.309	
	(0.839)		(15.81)	
Firm birth t–10	1.287		-0.328	
	(1.573)		(29.66)	
Constant	-209.6	-89.78	158,703***	157,947***
	(612.9)	(448.8)	(11,554)	(8,390)
R-squared	0.336	0.325	0.150	0.149
District fixed effects	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1
Dependent variables
Number of primary schools = total number of primary schools in region *i* at time *t*/total number of schools in Punjab at time *t*
Primary school enrollment = total number of students enrolled at primary level in region *i* at time *t*/total number of students enrolled in Punjab at time *t*
Independent variable
Firm birth = (new firms in region *i* at time *t*/total new firms in Punjab at time *t*)
Source: Authors' calculations.

Figures 9 and 10 show that the entry of a new firm increases enrollment rates and the number of schools after about a year. While this

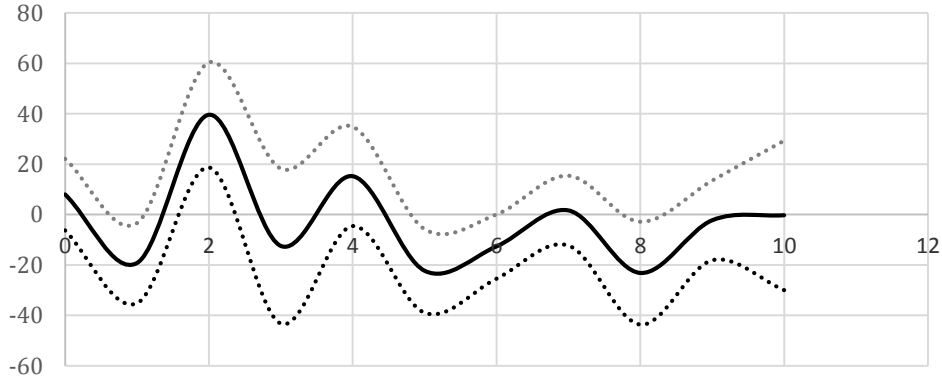
impact persists over time for the number of schools, the impact on primary enrollment rates becomes insignificant after a year.

Figure 9: Impact of all firm entry on the number of primary schools at the district level in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 10: Impact of all firm entry on primary enrollment at the district level in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Table 5 shows the impact of firm entry on the number of hospitals in a district over time. The results are similar to those for the educational outcomes discussed above. When new firms enter a district, there is an

increase in the number of hospitals. This impact, while initially negative, becomes positive after a year and persists for up to three years.

Table 5: Impact of firm entry on number of hospitals across districts in Punjab

	Number of hospitals	
Variable	**(1)**	**(2)**
Firm birth t	-2.321*	-2.362*
	(1.361)	(1.405)
Firm birth t–1	3.403*	2.610
	(1.716)	(2.370)
Firm birth t–2	2.021	3.226
	(1.554)	(2.921)
Firm birth t–3	3.639**	4.790*
	(1.487)	(2.732)
Firm birth t–4		2.182
		(3.129)
Firm birth t–5		-0.118
		(4.714)
Constant	8.520***	8.194***
	(0.466)	(1.438)
R-squared	0.142	0.149
District fixed effects	Yes	Yes

Note: Standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1
Dependent variable
Number of hospitals = total number of hospitals in region *i* at time *t*/total number of hospitals in Punjab at time *t*
Independent variable
Firm birth = (new firms in region *i* at time *t*/total new firms in Punjab at time *t*)
Source: Authors' calculations.

Tables 6 and 7 look at the impact of the entry of small, medium, and large firms on the number of schools and primary enrollment rates, and on the number of hospitals, respectively. Table 6 indicates that the entry of small and medium firms leads to a decline in the enrollment rate early on (after about three years). Subsequently, however, the enrollment rate rises, on average seven years after initial firm entry. The entry of large firms leads to the highest increase in primary enrollment, although it takes about four years for this impact to occur. Table 7 shows that the entry of large firms is associated with a marginal increase in the number of hospitals. The

entry of small and medium firms is correlated with a marginal decrease in the number of hospitals.

Table 6: Impact of small, medium, and large firm entry on schooling outcomes across districts in Punjab

	Number of primary schools	Primary school enrollment
Variable	**(1)**	**(2)**
Small firm birth t	0.805	-21.01
	(0.814)	(13.76)
Small firm birth t–1	0.225	2.088
	(0.661)	(11.16)
Small firm birth t–2	1.443**	-12.23
	(0.643)	(10.86)
Small firm birth t–3	2.138***	-36.23***
	(0.713)	(12.05)
Small firm birth t–4	-0.776	8.314
	(0.693)	(11.70)
Small firm birth t–5	0.245	-8.681
	(0.561)	(9.475)
Small firm birth t–6	-0.108	1.102
	(0.613)	(10.36)
Small firm birth t–7	-0.218	0.647
	(0.571)	(9.639)
Small firm birth t–8	-0.934	23.75**
	(0.602)	(10.17)
Small firm birth t–9	0.127	-10.31
	(0.459)	(7.753)
Small firm birth t–10	0.194	7.047
	(0.612)	(10.35)
Medium firm birth t	-1.074**	6.987
	(0.499)	(8.423)
Medium firm birth t–1	0.263	-11.70
	(0.463)	(7.821)
Medium firm birth t–2	0.106	-8.189
	(0.498)	(8.418)
Medium firm birth t–3	-0.252	-18.40*
	(0.609)	(10.29)
Medium firm birth t–4	1.843**	-13.21
	(0.701)	(11.84)
Medium firm birth t–5	-0.0256	-7.214
	(0.525)	(8.873)
Medium firm birth t–6	-0.366	0.555

Variable	Number of primary schools (1)	Primary school enrollment (2)
	(0.579)	(9.784)
Medium firm birth t–7	-0.0751	22.12*
	(0.640)	(10.81)
Medium firm birth t–8	-0.0472	0.378
	(0.479)	(8.100)
Medium firm birth t–9	-0.825	2.452
	(0.639)	(10.79)
Medium firm birth t–10	-0.0623	7.396
	(0.655)	(11.07)
Large firm birth t	-1.257	17.99
	(1.126)	(19.03)
Large firm birth t–1	0.563	-0.238
	(1.033)	(17.46)
Large firm birth t–2	0.00279	1.695
	(0.939)	(15.86)
Large firm birth t–3	1.018	-12.32
	(0.985)	(16.64)
Large firm birth t–4	-3.040**	52.74**
	(1.186)	(20.04)
Large firm birth t–5	-0.451	17.34
	(0.845)	(14.28)
Large firm birth t–6	0.277	-9.625
	(1.209)	(20.42)
Large firm birth t–7	-0.991	-12.66
	(1.039)	(17.56)
Large firm birth t–8	-0.780	-10.69
	(1.009)	(17.05)
Large firm birth t–9	0.234	-12.16
	(1.426)	(24.09)
Large firm birth t–10	0.216	-14.13
	(0.945)	(15.97)
Other firm birth t	-2.224	14.66
	(1.474)	(24.90)
Other firm birth t–1	-3.390	23.74
	(3.086)	(52.13)
Other firm birth t–2	0.184	0.233
	(2.287)	(38.64)
Other firm birth t–3	-3.414	27.66
	(2.387)	(40.33)
Other firm birth t–4	-2.766	-184.2
	(14.70)	(248.4)

	Number of primary schools	Primary school enrollment
Variable	**(1)**	**(2)**
Other firm birth t–5	-0.927	34.63
	(2.539)	(42.89)
Other firm birth t–6	2.981	29.59
	(5.916)	(99.95)
Other firm birth t–7	-3.904	49.36
	(4.075)	(68.84)
Other firm birth t–8	-0.312	47.76
	(2.831)	(47.82)
Other firm birth t–9	2.269	-18.35
	(2.086)	(35.24)
Other firm birth t–10	-0.659	65.42
	(3.142)	(53.09)
Constant	1.597	166.7***
	(1.566)	(26.45)
R-squared	0.693	0.684
District fixed effects	Yes	Yes

Note: Standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1

Dependent variables

Number of primary schools = total number of primary schools in region *i* at time *t*/total number of schools in Punjab at time *t*

Primary school enrollment = total number of students enrolled at primary level in region *i* at time *t*/total number of students enrolled in Punjab at time *t*

Independent variables

Small firm birth = (new firms with fewer than 10 employees in region *i* at time *t*/total new small firms in Punjab at time *t*)

Medium firm birth = (new firms with 10 or more employees and fewer than 50 in region *i* at time *t*/total new medium firms in Punjab at time *t*)

Large firm birth = (new firms with 50 or more employees in region *i* at time *t*/total new large firms in Punjab at time *t*)

Other firm birth = (new firms with no employment reported in region *i* at time *t*/total new firms whose employment is not reported in Punjab at time *t*)

Source: Authors' calculations.

Table 7: Impact of small, medium, and large firm entry on number of hospitals across districts in Punjab

Variable	Number of hospitals
Small firm birth t	-0.000335
	(0.00104)
Small firm birth t–1	-6.43e-05
	(0.00120)
Small firm birth t–2	0.000485
	(0.00140)
Small firm birth t–3	0.00127
	(0.00132)
Small firm birth t–4	0.00207
	(0.00157)
Small firm birth t–5	0.00220
	(0.00135)
Small firm birth t–6	0.000892
	(0.00117)
Small firm birth t–7	-0.000281
	(0.00113)
Small firm birth t–8	0.000860
	(0.00117)
Small firm birth t–9	-0.00179**
	(0.000817)
Small firm birth t–10	8.77e-05
	(0.000934)
Medium firm birth t	0.000719
	(0.000800)
Medium firm birth t–1	0.000538
	(0.000732)
Medium firm birth t–2	0.00246
	(0.00144)
Medium firm birth t–3	0.00371**
	(0.00154)
Medium firm birth t–4	0.00345*
	(0.00174)
Medium firm birth t–5	0.00311**
	(0.00140)
Medium firm birth t–6	0.00423**
	(0.00157)

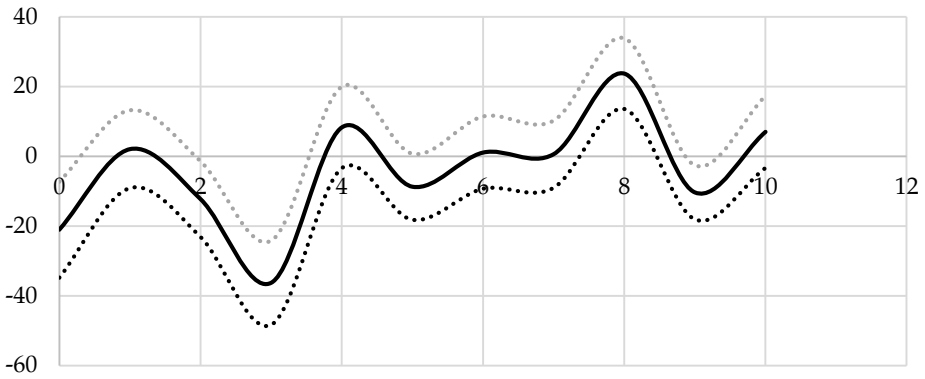
Variable	Number of hospitals
Medium firm birth t–7	0.00267**
	(0.00129)
Medium firm birth t–8	0.00167
	(0.00103)
Medium firm birth t–9	-0.000517
	(0.000840)
Medium firm birth t–10	5.49e-05
	(0.000900)
Large firm birth t	0.00203
	(0.00264)
Large firm birth t–1	0.00162
	(0.00274)
Large firm birth t–2	0.00216
	(0.00255)
Large firm birth t–3	0.000542
	(0.00269)
Large firm birth t–4	-0.000984
	(0.00240)
Large firm birth t–5	-0.00324
	(0.00215)
Large firm birth t–6	-0.00269
	(0.00227)
Large firm birth t–7	-0.000609
	(0.00256)
Large firm birth t–8	-0.00375
	(0.00250)
Large firm birth t–9	-0.00511**
	(0.00242)
Large firm birth t–10	-0.00457*
	(0.00267)
Other firm birth t	0.00293
	(0.00239)
Other firm birth t–1	0.0138
	(0.0114)
Other firm birth t–2	0.00539
	(0.0115)
Other firm birth t–3	-0.00117
	(0.0120)

Variable	Number of hospitals
Other firm birth t–4	-0.00309
	(0.0126)
Other firm birth t–5	-0.00744
	(0.0132)
Other firm birth t–6	-0.00602
	(0.00594)
Other firm birth t–7	0.00904
	(0.00635)
Other firm birth t–8	0.00872
	(0.00525)
Other firm birth t–9	0.00906***
	(0.00315)
Other firm birth t–10	0.00852**
	(0.00404)
Constant	0.00118
	(0.00428)
R-squared	0.882
District fixed effects	Yes

Note: Standard errors in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1
Dependent variable
Number of hospitals = total number of hospitals in region *i* at time *t*/total number of hospitals in Punjab at time *t*
Independent variables
Small firm birth = (new firms with fewer than 10 employees in region *i* at time *t*/total new small firms in Punjab at time *t*)
Medium firm birth = (new firms with 10 or more employees and fewer than 50 in region *i* at time *t*/total new medium firms in Punjab at time *t*)
Large firm birth = (new firms with 50 or more employees in region *i* at time *t*/total new large firms in Punjab at time *t*)
Other firm birth = (new firms with no employment reported in region *i* at time *t*/total new firms whose employment is not reported in Punjab at time *t*)
Source: Authors' calculations.

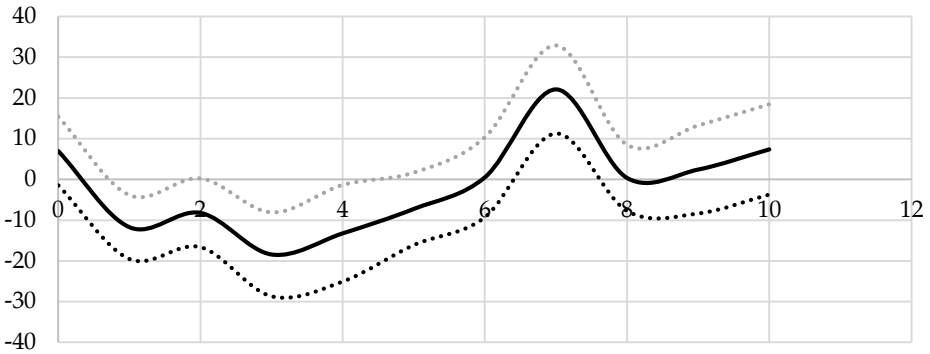
The results for the impact of firms of various sizes on schooling outcomes are shown in Figures 11–16. We observe that the entry of small firms does not significantly increase primary enrollment rates, while the entry of medium firms initially decreases district-level primary enrollment rates for almost five years, after which a positive impact on primary enrollment arises. The largest increase in primary enrollment rates is associated with the entry of large firms in a district, but this impact is only observed about four years after firm entry and is short-lived.

Figure 11: Impact of small firm entry on primary school enrollment in Punjab



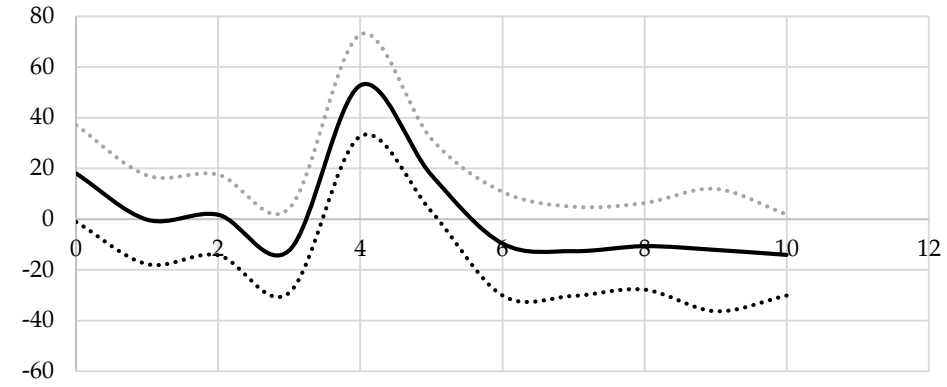
Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 12: Impact of medium firm entry on primary school enrollment in Punjab



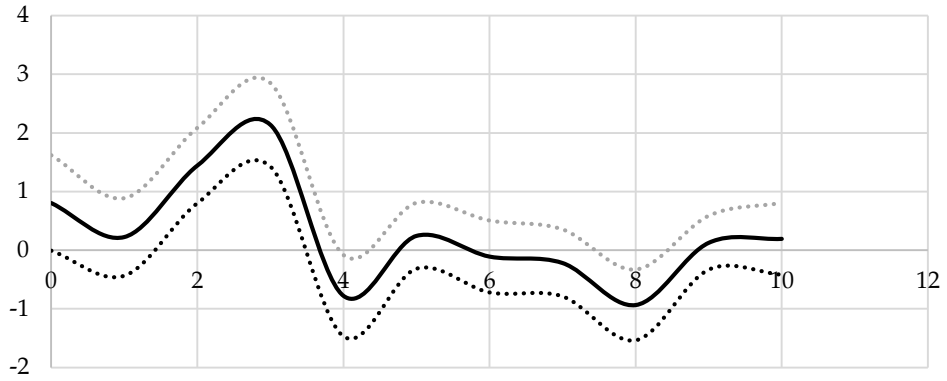
Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 13: Impact of large firm entry on primary school enrollment in Punjab



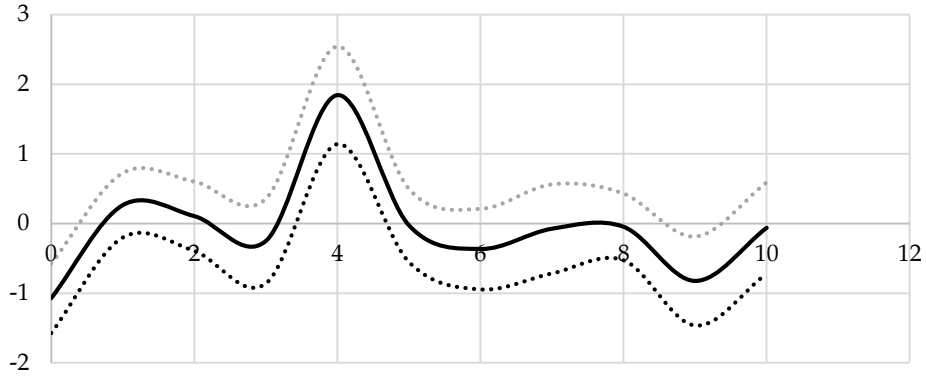
Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 14: Impact of small firm entry on the number of primary schools in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

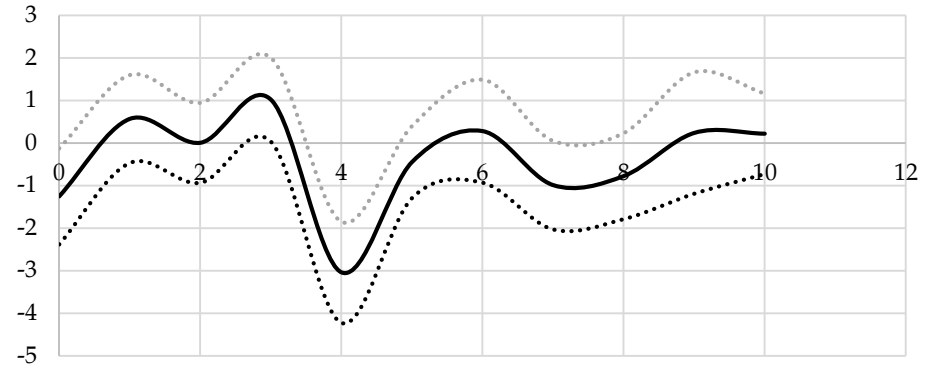
Figure 15: Impact of medium firm entry on the number of primary schools in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.

Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

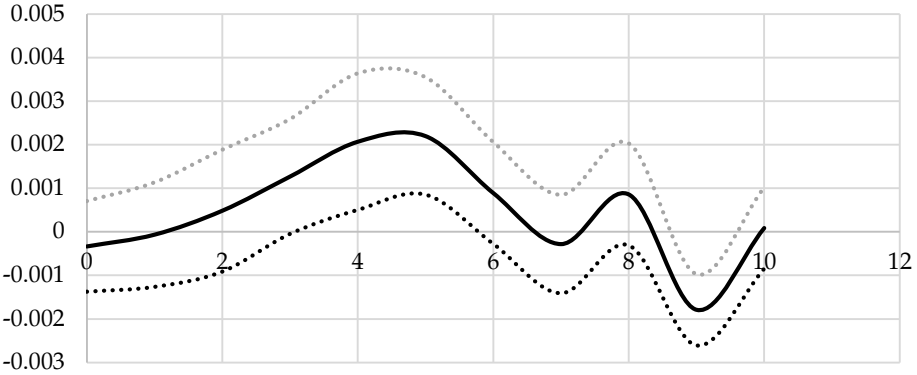
Figure 16: Impact of large firm entry on the number of primary schools in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

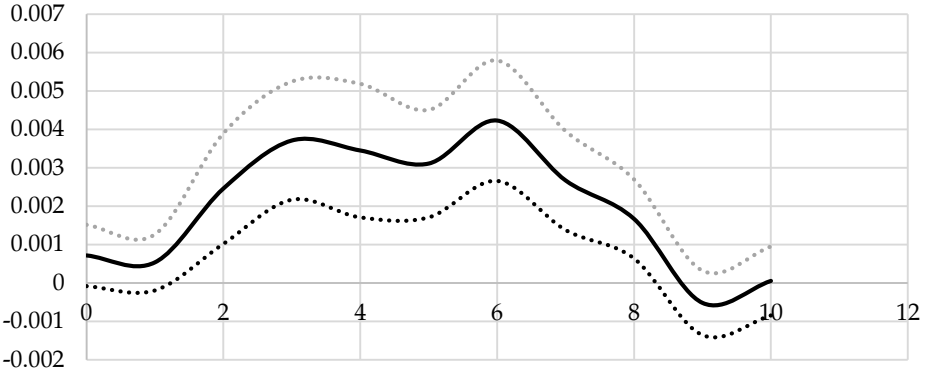
Figures 17–19 illustrate the results for the impact of small, medium, and large firm entry on the number of hospitals in Punjab.

Figure 17: Impact of small firm entry on the number of hospitals in Punjab



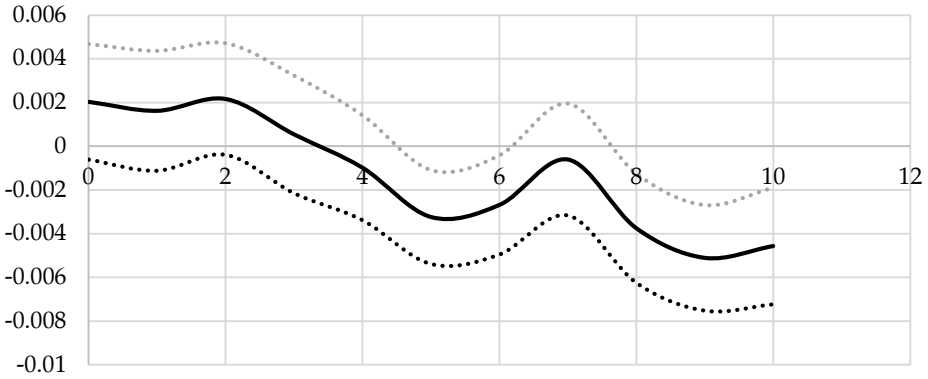
Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 18: Impact of medium firm entry on the number of hospitals in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 19: Impact of large firm entry on the number of hospitals in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Table 8 shows the impact of the entry of export producing firms on schooling outcomes across districts in Punjab. There is a significant increase in the number of schools and primary enrollment after the entry of an export-producing firm, but this is at least two years after entry in the case of the number of hospitals and at least six years in the case of district-level primary school enrollment.

Table 8: Impact of export good-producing firm entry on schooling outcomes across districts in Punjab

	Number of primary schools	Primary school enrollment
Variable	**(1)**	**(2)**
Firm birth t	0.104	2.690
	(0.633)	(11.91)
Firm birth t–1	0.283	-8.279
	(0.786)	(14.78)
Firm birth t–2	2.037*	-22.53
	(1.020)	(19.19)
Firm birth t–3	-0.199	-9.052
	(0.947)	(17.82)
Firm birth t–4	2.082***	3.674
	(0.758)	(14.27)
Firm birth t–5	0.809	2.440
	(1.646)	(30.96)
Firm birth t–6	2.992**	43.59*
	(1.353)	(25.45)
Firm birth t–7	0.0162	-7.584
	(0.983)	(18.49)
Firm birth t–8	0.0356	-10.71
	(0.961)	(18.08)
Firm birth t–9	-0.217	-19.62
	(1.024)	(19.27)
Firm birth t–10	-0.876	10.43
	(1.284)	(24.16)
Constant	0.625	154.1***
	(0.755)	(14.21)
R-squared	0.384	0.214
District fixed effects	Yes	Yes

Note: Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Dependent variables

Number of primary schools = total number of primary schools in region *i* at time *t*/total number of schools in Punjab at time *t*

Primary school enrollment = total number of students enrolled at primary level in region *i* at time *t*/total number of students enrolled in Punjab at time *t*

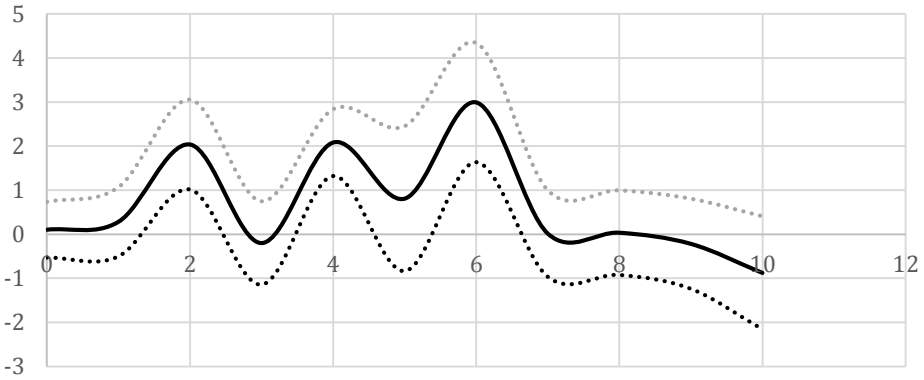
Independent variable

Firm birth = (new firms producing export goods in region *i* at time *t*/total new firms in Punjab at time *t*

Source: Authors' calculations.

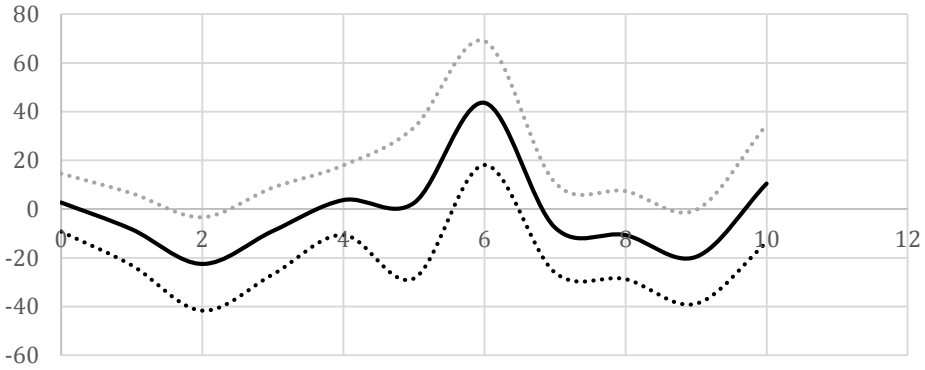
This is illustrated in Figures 20 and 21, which show how primary enrollment is positively affected about six years after the entry of an export-producing firm. The impact on the number of primary schools in a district increases after a few years and then fluctuates.

Figure 20: Impact of entry of exporting firms on the number of primary schools in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

Figure 21: Impact of entry of exporting firms on primary enrollment in Punjab



Note: The x-axis shows the number of time lags of firm entry or, in other words, the impact of firm entry one year later, two years later, etc. The y-axis shows the percentage change.
Source: These figures are generated from the regression results shown above, based on data from the Punjab Directory of Industries.

6. Discussion

Our analysis looks at the economic implications of new firm entry across the districts of Punjab. We start by looking at how new firm entry affects employment growth, primary enrollment rates, the number of schools, and the number of hospitals. We then extend the basic model to isolate the impact of firms of various sizes entering the market. Finally, we look at how export-oriented firm entry can have a different impact on the variables above compared to firms producing for the domestic market.

The results generally prove that the impact of new firm entry on employment growth fluctuates over time. When new firms enter the market, they initially cause an increase in employment – the direct employment effect – but this is followed by a decrease in district-level employment due to the displacement of workers as some firms are driven out of business. Eventually, employment goes up as the remaining firms perform better and expand.

The entry of small firms tends to lead to short-term increases in employment; this impact on employment is slightly longer-lived in the case of entry by medium firms. On average, there is a significant decrease in the growth rate of employment after a large firm enters the market and this impact is greater than that of a small firm. While the entry of export-oriented firms has a significant impact on employment that is sustained over time, this effect is substantially smaller than in the case of other types of firms.

In terms of socioeconomic outcomes – primary enrollment rates and the number of schools in a district over time – we find that overall firm entry tends to initially decrease primary enrollment rates in Punjab; this is followed by a pattern of increased and decreased enrollment rates over time. The entry of small firms has little impact on primary enrollment initially, but after a few years, it leads to a fall in primary enrollment, followed by gradual increases. The entry of medium firms leads to a significant decline in primary enrollment rates over time: this lasts almost seven years before becoming positive. The largest positive impact on primary enrollment is correlated with the entry of large firms, but it takes almost four years for this impact to materialize.

The entry of an export good producer also has a large, positive impact on primary school enrollment after about six years. It is tempting to believe that the results are similar because the largest firms and export good-producing firms are the same, but this is not necessarily the case:

we do not get the same results for large firms and export producers when we look at the impact on employment. Finally, we find that new firm entry has a significant, if marginal, impact on the number of hospitals and primary schools.

Overall, our results imply that firm entry has a significant impact on socioeconomic outcomes, which differs across the economic variables we look at and also across the types of firms that enter the market. What is important to note is that some of these impacts are immediate while some take years to occur. In the context of formulating industrial policies, policymakers must recognize that different types of firms have different kinds of impacts, so that a one-size-fits-all approach to industrial development is unlikely to succeed.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 183–204

Organization, Management, and Wage Practices in Pakistan's Electrical Fan and Readymade Garment Sectors

Theresa Thompson Chaudhry* **and Mahvish Faran****

Abstract

The electrical fan sector in Pakistan has existed since at least the country's independence and produced for the domestic market for most of its history, although the sector has had strong export growth in the last 15 years. On the other hand, the readymade garment sector has a shorter history, but has been export-oriented from the beginning. The fan sector has retained the traditional batch production system while garments are produced along a line. Nonetheless, both rely on piece rate-based wages to meet their production targets. In this paper, we describe production, management, wage practices, quality, and some barriers to reorganization in these sectors.

Keywords: Production, management, quality, wage practices, ready-made garments, Pakistan.

JEL classification: D20, L23, L67.

1. Introduction

Management, once primarily the domain of business consulting and business schools, now garners intense interest among academic economists. Recent research has provided concrete and convincing evidence of the profound and positive impact of sound management practices on firm-level productivity (Bloom & Van Reenen, 2007; Bloom et al., 2013).[1] In addition, the organization of firms – the delegation of authority and decentralization of decision-making, only possible when trust is high – is also seen to play a role in firm size and performance

* Associate professor, Department of Economics, Lahore School of Economics. I would like to acknowledge the financial support provided by the International Growth Centre (IGC) to carry out research in these sectors. The opinions expressed in this article are those of the authors and do not necessarily reflect the opinions of the IGC.
** Project coordinator, RMG Benchmarking Project; visiting lecturer, Lahore School of Economics.
[1] Bloom and Van Reenen's (2007) study was based on a survey of firms' management practices in the US, UK, France, and Germany. Subsequently, they surveyed more than 30 firms from both developed and developing countries (see Bloom et al., 2014); Pakistan is among the most recent additions and the results are not yet available.

(Bloom, Sadun, & Van Reenen, 2012). The stakes are high, not just for firm profits but also for national economic performance; Bloom et al. (2014) suggest that a quarter of the variation in total factor productivities can be explained by the quality of private sector management.

In Pakistan, firms tend to be family-managed.[2] Ilias (2006) demonstrated this reliance on family management in Sialkot's surgical goods sector; firm growth was found to be associated with the size of the founder's family, such that firm founders with more brothers tend to grow into larger firms. The dominance of family management systems may be due to a dearth of professional managers, lack of trust in nonfamily management or systems to control them, or both. This could happen if weak legal systems and poor contract enforcement reduce a firm's ability to sanction nonfamily management in the case of shirking or expropriation of firm resources. Firms may find it easier to monitor family managers (for example, by observing spending habits) or sanction them through informal mechanisms (such as social exclusion).

At the same time, research has found that the family management of firms is associated with poorer-quality management, lower productivity, and smaller profits (Bloom & Van Reenen, 2007; Bandiera, Prat, & Sadun, 2013). Family ownership-cum-management structures can also run into succession difficulties: if there are not enough descendants to take over or if they lack competence to run the business, a firm might fail after losing its founder. On the other hand, if there are too many potential managers in the younger generation, the business may be split amongst the inheritors so that economies of scale are lost.

In addition to the aforementioned research on management, organization and family firms, a third, related, line of research deals with the design of wage schedules to raise productivity. Given the concerns surrounding the econometric identification of the impact of different wage systems on productivity, newer studies have borrowed techniques from the hard sciences and applied the randomized controlled trial (RCT) approach to economic experiments in the field.[3] Researchers randomly

[2] Firm owners are not the only segment of society to look inward in Pakistan; marriage practices are also largely endogamous since most unions are between first or second cousins, according to the Pakistan Demographic and Health Survey (2006).

[3] Specifically, there are two potential sources of endogeneity that would bias results in observational studies of incentive wages on productivity. First, it is likely that unobservable firm-level characteristics, such as management ability, would be correlated with offering higher-powered incentives for workers and with firm performance. Second, firms offering piece rates may attract more productive workers than firms that offer a fixed wage (Bandiera, Barankay, & Rasul, 2011).

assign different wage schedules to control and treatment groups of actual workers to obtain an unbiased estimate of the impact of different incentive schemes. This research finds that, compared to fixed wages, piece rates and performance-based pay have proven effective in increasing worker productivity, both in developed and developing country settings (see Bandiera, Barankay, & Rasul, 2005; Choudhary, Gabriel, & Rickman, 2013; Goto, Aida, Aoyagi, & Sawada, 2013; Kaur, Kremer, & Mullainathan, in press; Shearer, 2004; Shi, 2010). Managers' performance can also be improved through incentives (Bandiera, Barankay, & Rasul, 2007, 2009). Another benefit to firms is that piece rates give them more flexibility to pay for work as needed when faced with lumpy demand, whereas firms that pay fixed wages need a constant flow of orders.

The aforementioned experiments have focused principally on low-skill agricultural work or data entry and the desired worker effort – for example, fruit-picking speed – is simple to verify and aligned with firm owners' objectives. Simple systems of performance pay such as piece rates may be less applicable in environments where performance is multifaceted or harder to measure. Too much emphasis on easier-to-measure performance metrics may even backfire by focusing efforts away from soft skills that may be more important to firm performance. Incentivizing workers' speed can increase the gross output, but might sacrifice quality, which can be especially detrimental for firms aiming to compete in export markets.

Not all of the increased output induced by piece rates in these studies has met the required quality, even in the simple work of tree planting (Paarsch & Shearer, 2000).[4] Heywood, Siebert, and Wei (2013) explore the quantity-quality tradeoff in data entry work through a field experiment, finding that piece rates are associated with greater productivity as well as more errors, but that the quality problem can be fully mitigated with strict monitoring. At par in terms of performance are committed workers under low monitoring, suggesting that firms need to incur human resource costs either in terms of monitoring or selecting workers. Further, monitoring demotivates committed workers paid fixed wages. Lazear (1986) theoretically explores the circumstances under which piece rates or salary wage systems are preferable, suggesting that piece rates perform better when the measurement costs of quantity and quality of output are low, when workers are more heterogeneous, and when effort

[4] The paper has used nonexperimental data, but limited the sample to those employees who had worked under both fixed and piece-rate wages.

monitoring costs are high. He also suggests that there need not be a quantity/quality trade-off as long as workers become residual claimants.

Anecdotally, Pakistan's quality problems in its readymade garment (RMG) sector are attributed to the piece-rate system, where workers are paid per garment completed. In addition, it has been suggested that labor costs might not necessarily be lower under piece rates as compared to well-managed fixed-wage workers. According to the consulting firm Technopak (2007), piece rates in the RMG sector tend to be based on the market price of particular stitching operations rather than on the content of the final output produced, which may make the cost per piece higher than under a salary-based system. Makino (2012) finds higher salaries among piece-rate garment workers, using a sample of 22 factories in Lahore and applying Mincerian wage regressions. She notes, however, that the type of work done by salaried workers may have been less skilled work.

Another consideration is that piece rates could inhibit the adoption of technology. Atkin et al. (2014) argue that the system of piece-rate wages paid to workers who cut leather pentagons and hexagons for soccer balls reduces the adoption rate of a new cutting technology because workers naturally slow down during the learning phase, lowering their take home pay. Thus, piece rates can misalign workers' incentives (speed) and owners' objectives (less wastage). Finally, financial incentives may crowd out individuals' intrinsic motivation and backfire in the long run (Bénabou & Tirole, 2003).

In this paper, we describe some aspects of firm organization, wage practices, and output quality for two sectors in which we have done fieldwork over the last few years: electrical fans and RMGs. The electrical fan sector in Pakistan, an example of light engineering, has focused historically on production for the domestic market, but diversified into export markets in the last 10 to 15 years, with exports reaching nearly US$ 40 million in 2012. Altogether, textile exports account for over half of Pakistan's export receipts, of which garments, hosiery, towels, bed sheets, and other made-ups comprise more than half of these.[5] Garment exports reached US$ 3.72 billion in 2011/12 (Nabi & Hamid, 2013). Data from the Ministry of Commerce indicate that exports of RMG and knitwear products increased by 12 and 6 percent, respectively, between FY2012 and FY2013.

[5] Data from the All Pakistan Textile Mills Association, cited in Hussain et al. (2013).

2. Background of the Electrical Fan and RMG Sectors

This section provides a context for analyzing the two sectors studied.

2.1. The Electrical Fan Sector

Pakistan's electrical fan sector is clustered in the Gujrat and Gujranwala districts of Punjab. In addition to being geographically agglomerated, production is concentrated in five or six large firms, with the remaining production disbursed among medium and small firms in what is referred to locally as the "cottage industry."[6] The three largest firms in Gujrat estimate that they are responsible for roughly 50 percent of the sector's output.

Exporting is a relatively recent development in the fan sector, although both large and cottage firms now sell in domestic and export markets. Entry into export markets, which picked up around 10 to 15 years ago, was mainly a response to excess production capacity that had developed. The largest three firms were also under pressure from the competing cottage industry, having lost market share to them despite reducing their mark-ups and differences in quality and energy efficiency. However, export markets have proved a fruitful outlet; exports have continued to grow at a healthy pace, reaching nearly US$ 40 million in 2012.

Domestic sales take place mainly through distributors and each of the large firms has a different regional strength.[7] With some distributors, the arrangement is that they provide working capital or "invest" in the firm every September by depositing money with the fan company. This establishes for the distributor a credit line with the company and fixes the prices at which they can purchase fans until their credit is exhausted.[8] Other distributors have profit-sharing arrangements in place and the distributor acquires the fans from the manufacturer on credit.

Both the demand for and production of fans is highly seasonal. The high season, lasting about six months, accounts for around 80 percent of annual production (Munir & Khan, 2011). Many of the small firms shut down temporarily for at least part of the slow season, while the large firms remain open but operate at less than full capacity. At least one firm

[6] Cottage-industry fan factories can be as large as 100+ employees.
[7] Royal Fans is strong in Lahore, Pak Fans in Karachi, Younas Fans in KP, and GFC in southern Punjab.
[8] This is an acceptable credit arrangement for the religiously observant, given Islam's prohibition on interest income.

utilizes the slow season for repairing defective fans rather than producing new units. The seasonality of production is one potential reason for having retained the batch production system, which we discuss in more detail in the following section.

2.2. The RMG Sector

Pakistan now faces an opportunity in the RMG sector as increasing wage rates in China lead buyers to look for alternative sourcing countries. The recently granted GSP-Plus status by the European Union is another significant source of potential expansion for Pakistani exports. Nonetheless, productivity and quality must improve if export growth is to be sustained beyond the short term. Pakistan's knitwear sector grew rapidly in the 1980s under the Multi-Fiber Agreement, but these gains quickly dissipated once the quota regime was dismantled in 2005, as firms were unable to compete. The country also faces stiff competition from lower-wage countries including, importantly, Bangladesh.

Pakistan's RMG sector relies mainly on domestically produced fabric woven from domestically farmed cotton – one of the country's most important crops after wheat and rice. Its cotton varieties are well suited to the production of denim. In contrast, Bangladesh must import its material. Firms shy away from bank finance and rely on credit from suppliers, advances from buyers, and self-finance (Nabi & Hamid, 2013).

In Pakistan, the workforce in the garment sector is predominantly male, although many firms we surveyed claimed they would prefer to hire more women, who are perceived as being more reliable and attentive to quality.9 Currently, only about 16 percent of stitching operators are female (Nabi & Hamid, 2013). On the other hand, stitching workers in factories in other major exporting countries, such as Bangladesh, Sri Lanka, Indonesia, and Thailand, are overwhelmingly female (Makino, 2012). Cultural attitudes, however, may be constraining more women from entering the manufacturing workforce in Pakistan; in a survey of 150 textile firms, Haque (2009) found that, on average, workers and managers believed that women should work only if economically necessary.

Most workers are trained on the job and the larger factories have small training centers onsite.[10] The availability of trained stitching

[9] Haque (2009) finds that 64 percent of firms were willing to hire women.
[10] The Technical Education and Vocational Training Authority has training programs for stitching, but none of the firms we surveyed were familiar with its graduates.

operators seems to be a constraint among the firms we interviewed as well as among a larger sample of firms surveyed by Nabi and Hamid (2013). The lack of middle management is also cited as a constraint (Makino, 2012; Nabi & Hamid, 2013).

3. Organization of Production

In Pakistan, the fan and RMG sectors have adopted different modes of organizing production. Fans are produced using a batch or production group system, even though internationally, large producers such as China manufacture fans along an assembly line.[11] Garments in Pakistan, on the other hand, are produced along a line, which is the industry standard worldwide.

3.1. Fan Production

Fans in Pakistan are produced as batches in a series of workshops dispersed throughout the factory. Each type of fan – including pedestal fans, ceiling fans, bracket fans, and exhaust fans – follows a slightly different process, although the essential components (especially of the motor) are more or less the same. Each workshop focuses on completing a series of operations on a single type of fan, even though the factory itself likely produces many models of each type of fan and each team has to work on a variety of models.[12] For example, the operations required to produce a ceiling fan include winding (of copper wire around a steel rotor), drilling, fitting, painting, and packing. Each stage takes place in individual workshops by teams of workers, under the supervision of a team leader known as an *ustad*.[13]

Multiple teams often work on the same stage of production, for example, winding, depending on the output required. Teams sometimes work side by side in a large hall or might work in separate workshops, according to the limitations of space in the factory.[14] Team sizes are mainly determined by the ustad and vary significantly, even within the same part of the production process. Senior workers on the team are

[11] According to discussions, the batch system is common throughout the light engineering sector in Pakistan.
[12] It has been suggested that efficiency might increase if the teams each become specialized in fewer models.
[13] The *ustad-shagird* or master-apprentice system is the traditional, informal system of vocational skills training.
[14] The factory comprises a series of rooms of varying size, resulting from the gradual and organic growth of the firm over several decades.

multi-skilled and can perform a variety of tasks required by the workshop.[15] Therefore, daily production targets can be met by extending the working day when workers are absent.

Much of the responsibility for the day-to-day management of production is delegated to the ustads and a few foremen, including supervision of work, quality control, identifying and training new workers, negotiating piece rates, and monitoring attendance. In our survey of 85 workers (eight teams) in one of the sector's largest firms, the most common way of finding a job was for the worker or a family member to have directly contacted the ustad; just over half the workers got their jobs this way.[16] Another 43 percent of workers initiated contact through other employees of the firm. Most workers (89 percent) stated that their initial *nafri* or piece rate was decided solely by the ustad. Historically, the ustad collected payment for the team's output and distributed salaries to workers. This system may be in place in other factories still, but the large firm with which we had the most contact had taken over the function of making wage payments directly to its workers.

This same firm was interested in moving from batch manufacturing to an assembly line in order to adopt international best practice and reduce defects. Moving production from the batch system to an assembly line was perceived as potentially more cost-effective as less electricity would be used if the same amount of work could be completed in fewer hours, and through a reduction in in-process inventory.

However, the firm encountered many barriers to reorganizing production. First, the layout of the factory was a series of disjointed rooms rather than a large open hall, reflecting the firm's incremental and organic growth over decades. Second, workers resisted the change because operating along an assembly line meant they would be shifted to fixed wages. They may have also been concerned that their skills would become more specialized and less transferable between firms within the sector if they switched from batch to assembly line work (workers commonly move among jobs at different firms in the sector, given the

[15] In our survey of around 85 workers in eight workshops of a large fan manufacturer, about 40 percent of winders and 60 percent of packers reported working on different tasks at least once a week.

[16] Only about 8 percent of workers surveyed were relations of the ustad. Four out of eight ustads had at least one relation among their team members. On the other hand, more than a quarter of the workers had known the ustad before joining the firm and 18 percent lived in the same village as the ustad. Across individual ustads, this figure varies from 0 (for three ustads) to 72 percent.

agglomeration of firms).[17] However, since an assembly line requires a fixed and constant number of workers on the line, the largest impediments cited by the management were high rates of absenteeism and irregular working hours (including late arrivals and breaks for tea or smoking), which caused bottlenecks in the production process.[18] Batch production may be more flexible from the workers' perspective as they can take breaks during the day without disrupting the line and even take days off work for odd jobs or seasonal agricultural work in the villages.

We worked with this firm to address one of these barriers, that is, the irregular attendance of workers. We piloted two types of bonuses for high monthly attendance: (i) a bonus based on individual attendance (calculated per worker) and (ii) a group-based attendance bonus (calculated at the team level). The group-based bonus depended on the number of days each month that the team's target attendance was met.[19]

After the pilot, we tested the group-based bonus with a larger sample of teams, since it seemed to be the more promising of the two incentives at the pilot stage. Comparing the attendance records of the teams offered the group-based incentive to that of a control group, our early results show that this particular bonus increased by almost three days per month the number of days that the attendance target was met.

As a result of the project, the ceiling fan packing teams (which assemble the blades, test the fan, then disassemble and pack for shipping) started working on a nonmechanized assembly line where the fans were moved from worker to worker on a series of rollers. This allowed some specialization of the workers' tasks and helped protect the fans from damage in the final stages of inspecting and packing each unit.

3.2. RMG Production

Under the assembly line system, each worker stitches a different part of the garment in a particular order so that the garment takes shape along the line. For example, in the stitching of denim garments, the factory floor is generally divided into four or five sections: small parts

[17] Just over a quarter of the workers surveyed (24 workers, or 28 percent) had left the firm at some point and later returned. Of these, about a third had worked in another fan factory while away, while 29 percent had worked at other firms in the fan sector prior to joining the firm studied here.

[18] In our survey of workers, the most common reasons cited for absences were family weddings (34 percent), family illness (27 percent), a death in the family (25 percent), and other work, including agricultural (13 percent).

[19] The target depended on the team size, but for the average team was $n - 1$ for a team of n members.

(such as pockets and belt loops), backs, fronts, and assembly. Some factories further divide the assembly section into two parts. In knitwear, lines are usually allocated to various styles to allow workers to specialize in the operations of particular styles. Most machine operators are multi-skilled and workers can be substituted for each other to minimize bottlenecks due to absenteeism. We have so far surveyed 33 line supervisors from six RMG factories in the Lahore area, covering both knitwear and woven items (mainly denim), to obtain a better understanding of the role of supervisors and the challenges they face.[20]

Similar to the fan sector, absenteeism seems to be a problem in the RMG sector. Accepted reasons for taking time off work, according to the supervisors, included family illnesses, death, and weddings, and (to a lesser extent) seasonal or agricultural work. About two thirds of the supervisors felt that absenteeism was an important cause of bottlenecks on the line.[21] In addition, workers tended to move between firms frequently. In response, some firms have introduced a sliding bonus payment tied to monthly attendance as part of the compensation package; this is referred to as the "incentive plus piece rate." The full amount of the fixed payment (ranging from PKR 2,000 to 3,000) is given if the worker is present every working day in the month. Deductions are made from the bonus for each day a worker takes off, unless he or she gives advance notice.

The supervisory structure of the typical RMG firm in Pakistan includes both production and quality supervisors. On each line there is one line supervisor (or section supervisor, in the case of denim) in charge of production, who is mainly responsible for looking after the inputs and output of the line and managing the workers.[22] Across lines, production managers (possibly with assistant managers) oversee multiple lines. There is also usually one quality supervisor per line or section. Under each quality supervisor are three to four quality inspectors who check the garments at various stages. Each quality inspector specializes in checking a handful of stitching operations. The hierarchy of quality and production supervisors can vary across factories: in some factories, the quality supervisors may be a level below the production supervisors, while in others they are at par. According to our survey, around 90 percent had at

[20] There was one female supervisor among these.
[21] Unscheduled breaks during the day were generally considered not to cause disruptions on the line.
[22] Usually, there is one production supervisor per line for knitwear factories and one per section (back, front, assembly) in denim.

least some secondary schooling and nearly half had completed secondary school with an FA or higher.[23]

Based on our discussions with line supervisors, it appears that they exercise a fair amount of decision-making authority and can move around operators on the line as needed. They rely mainly on their own informal knowledge of each operator's skills to balance the line. If a machine breaks down or needs repairing, the line supervisors will consult other supervisors or managers to identify if an idle machine is available. Supervisors can also discuss the layout and targets for the line and suggest changes directly to the industrial engineers, since they visit the factory floor frequently. The production manager approves production targets, but supervisors can also suggest changes. Incidents on the line such as receiving the wrong accessory are typically reported to a production manager and then to the supply department. Decisions such as firing an operator are discussed with the production manager and then left to human resources personnel. Discipline issues with workers are also handled directly by the production supervisors. Conflicts between supervisors are often resolved by the assistant production managers and the issue then conveyed to the production manager.

To balance the line, the key measure is the standard minute value (SMV), which is used to estimate the time required by each operation in stitching a garment. The cumulative SMV for each operation gives the total required stitching time per piece. The SMV is used in allocating workers to stations along the line to avoid bottlenecks: operations with a low SMV may be allocated one worker; operations that take longer (with a higher SMV) will often have at least two workers stationed on the line. The SMV is also used to set the piece rates that workers receive per garment they stitch.

Most, though not all, of the larger garment producers in Pakistan that we visited now have industrial engineers and have adopted some version of the SMV to organize production, pay wages, and set production targets. Field visits to garment factories confirm that firms employ an adjusted version of the SMV, known as the standard adjusted minute (SAM). Some firms start with the internationally calculated SMVs and then adjust these according to the time it actually takes to produce a garment on their line. Other firms conduct their own time and motion studies to calculate the SAM, using a stopwatch to determine the time it takes to

[23] Specifically, one had completed the eighth grade, two had completed the ninth grade, 14 were matriculates, 13 had achieved an intermediate degree (FA) pass, and three had completed a BA.

perform each operation of a particular garment a number of times. The piece rate is then set according to the SMV or SAM of the operation.

According to our discussions, the firms with industrial engineering departments regularly calculate the efficiency of workers and set targets based on these calculations. Supervisors revealed that workers are generally able to meet the targets set, except in cases such as machine breakdowns or delays in inputs. When supervisors were asked to assess whether poor planning or poor layout of the line was more important in creating bottlenecks on the line, their answers were almost evenly split – interestingly, even among supervisors within the same factory.

Some newer timesaving technologies, such as sewing machines with thread auto-trimmers, have not been widely adopted by the sector. Whether this is because firms are not willing to take on the added maintenance required of a more complex machine (to keep the trimmer in sync) or for other reasons is not known.

4. Wage Practices

In Pakistan, wages based on piece rates appear to be the most common system of compensation in sectors including (but not limited to) electrical fan production, RMG production, and soccer ball production.[24] Discussions with production managers and firm owners in the RMG sector indicate that they believe productivity would fall significantly – leaving them unable to fill customers' orders in time – without piece rates to incentivize their primarily male workforce. One theory is that piece rates substitute for a lack of managerial capacity to supervise fixed-wage work. Managers in the RMG sector believe they would face fewer quality issues in the case of fixed wages and a female workforce, such as that in Bangladesh. However, the current workforce in Pakistan's RMG sector, unlike in Bangladesh, is primarily male and accustomed to working on piece rates. In Pakistan's electrical fan sector, the entrenched piece-rate system (preferred by workers) has made it difficult for firms to transition to an assembly line system with fixed wages that could help reduce in-process inventory and improve fan quality.[25]

[24] In the soccer ball and RMG sectors, there are also firms that pay fixed wages. At least one RMG firm pays some lines piece rates and others fixed wages.

[25] Fan production along an assembly line (as in China's large factories) is thought to result in lower levels of in-process inventory and thereby in less damage to components and less need for reworking.

4.1. Remuneration in the Electrical Fan Sector

Output is measured at the team level and the team is paid at a piece rate per unit produced (for example, per motor wound with copper wire). Each member receives a share (nafri) of the team's daily output. The worker's individual nafri is determined primarily by the ustad (with occasional input from the management) and is based on the worker's experience.[26] The team's daily output is attributed to the workers present on a particular day. Each worker's share of the team's daily output depends on their nafri relative to the sum of the nafri of all team members present that day. Monthly salaries consist of a nominal fixed payment plus their share of the team's output, which depends on their nafri, the output on each day they were present at work, and the nafri of the other workers present on the same days.

Since the daily output is divided among only the team members present that day, workers get paid more on days that fewer workers are present (holding the output constant).[27] This reduces the incentive for workers, particularly senior workers, to put pressure on their fellow team members to minimize absenteeism, since those with higher nafri stand to benefit proportionately more from worker absences.

4.2. Wage Systems in the RMG Sector

As mentioned earlier, piece-rate wages are common in Pakistan's RMG sector.[28] According to Makino (2012), this is a historical remnant of the subcontracting system that originated when textile firms first entered into garment production. Lacking management capacity due to the capital intensity of spinning and weaving activities, textile firms initially contracted with ustads who were paid on the basis of output for cut, make, and trim (CMT) operations; the ustads in turn hired workers and supervised the actual work. This is known generally as "cell manufacturing." Makino notes that workers were later hired directly by the firms in order to satisfy the labor standards imposed by international buyers, but that aspects of the old system – particularly the lopsided role played by supervisors in hiring and managing workers – have persisted.

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[26] Overall, workers cited either seniority or years of experience in the fan sector as the major determinants of nafri (59 percent). Only 38 percent stated that knowledge and skills (23 percent) or efficiency (15 percent) were the primary factors.

[27] The team is typically responsible for completing a daily target.

[28] However, one medium firm we interviewed said it paid most of its workers fixed salaries. One line was given a base salary plus a bonus for meeting a target efficiency level.

In the garments sector today, workers are paid according to the number of bundles completed and the piece rate. The most experienced operators are multi-skilled. Even under the piece-rate system, firms must comply with the minimum wage regulations set by the government. If a worker's wage due, according to the pieces produced, is less than the minimum wage, then s/he is paid the minimum wage. Workers are allowed a maximum of two hours' overtime per day or 12 hours in a week.

Generally, we observed that workers tend to negotiate piece rates through supervisors in some factories and that the actual piece rates may be higher than those calculated through the SMV. Interviews with human resources personnel in the factories revealed that piece rates are usually set in line with the rate prevalent for each operation in the market, because if one factory is unable to offer a similar rate, the most efficient workers will move to higher-paying factories.

5. Quality Issues

Both the electrical fan and RMG sectors have struggled with quality issues. Discussions with key players in both sectors indicate that the main problems stem from both input quality and production methods.

5.1. Issues in Fan Quality

Anecdotally, Pakistan's fans are seen as superior to Chinese-made fans in tropical climates, given their popularity in markets such as Africa, the Gulf, and Bangladesh.[29] Gujrat's large fan producers distinguish their higher-quality models from those of the medium/small cottage industry through their use of rotors stamped out of electrical steel sheet by heavy (and very expensive) imported equipment. The cottage industry's rotors are stamped out of (often rusted) recycled steel, using low-tech locally made equipment. Incidentally, the large firms also produce lower-quality fans using recycled materials, but these are exported mainly to the Gulf and sold under other brand names by the importers.

One source of quality issues in the fan sector is the use of intermediate inputs. Firms produce a large number of different models of fans and purchase components from local intermediate input producers. Reports on the sector indicate a weak and unreliable vendor segment, although energy shortages can be partly to blame. As a result, the large

[29] We were told of how some Chinese-made fans intended for the Bangladesh market were labeled "Made in Pakistan."

fan firms are unable to specialize in assembly like their competitors in China, but have to manufacture a number of components as well.

The second source of defects is related to the batch method of production. The fan motors are delicate and prone to damage, especially before they are fitted inside the fan casing. Along an assembly line, each in-process piece moves continually from one station to the next in the production process, possibly along a mechanized line. On the other hand, in the batch method, in-process pieces (literally) pile up between workers on workspaces. Workers are not paid for defective pieces, but otherwise are not penalized. If a piece passes inspection within the workshop and a defect is discovered after it has moved onto a subsequent step in the production process, the re-work is paid. Another opportunity for damage occurs when the completed units from one workshop are transported to the next workshop for the next stage of production.

Quality is also related to the vintage of the capital or its misuse. Older equipment, especially in the motor winding process, can raise defect rates. Another issue is that workers sometimes damage the machinery by setting it at a higher speed to finish the batch more quickly. Running the machines beyond the recommended speed is also bad for fan quality.

The firm we worked with to incentivize attendance with bonuses reported that quality had improved as a result of having more workers on a regular basis, although no formal analysis was performed. One concrete change observed by the management was that more fans were getting a final quality check prior to packing than before.

5.2. Quality Issues in the RMG Sector

Our research so far indicates that Pakistan's RMG industry has a high rate of quality defects. These can be caused by a number of factors: negligence on the part of stitching operators, mechanical problems with the sewing equipment (such as the needle or oil stains), and existing defects in the fabric. In the case of denim, defects can arise after stitching due to special finishes that add value but damage the fabric. These include stone washes, rinse washes, and enzyme washes (known as "wet processes"); and scrapping, sand blasting, potassium permanganate spraying, and resin application (known as "dry processes").

As discussed earlier, stitching operators are mainly paid piece rates, which might enhance the quantity of output but is also believed to

be at least partly responsible for quality problems. In the stitching units, quality inspectors and supervisors check the bundles at multiple points along the line as they are stitched, and send garments back for re-work to any workers whose work has been found defective. This ability to attribute defects to particular workers is facilitated by the piece-rate system of payments: each garment in a bundle in process is marked with the bundle number and a record of which bundles each operator has completed is recorded in order to calculate his or her wage. Returning defective garments to the worker who caused the fault (called self-routing) has intuitive appeal – s/he who made the mistake should be responsible for correcting it. However, an interesting piece of recent theoretical work by Lu, Van Mieghem, and Savaskan (2009) suggests that this may be suboptimal and that routing defective pieces to dedicated re-workers or cross-routing (where workers do both re-work and new pieces) – so that the worker who gets the piece right also gets paid for it – might be a better way to induce quality.

As mentioned above, defects may also be discovered after (denim) garments have undergone chemical treatments, stone washing, and other wet or dry finishes. These garments lose their bundle tag (usually a small adhesive sticker) and any subsequent repair work is done by specialized operators (exclusively engaged in re-work).[30] Such defects can be related either to stitching errors, fabric defects not previously visible, or quite often the wet/dry processes themselves.

Stitching operators are not penalized explicitly for quality defects. To the extent that operators carry out their own re-work for defects recorded before washing, they lose income they would have earned by working on a new piece. Our surveyed supervisors indicated that they would bring in a more experienced operator if a significant rise in defects were detected. However, not all quality defects are visible before the pieces are washed. For the most part, stitching faults can be eventually repaired. As a result, in the current system there may be less attention paid to preventing errors than to detecting and correcting them.

Since some garment producers in Pakistan are part of vertically integrated units, i.e., they also spin, weave, and dye the fabric, we were told there is sometimes pressure on fabric quality inspectors in the RMG units to accept substandard material. As a result, fabric wastage

[30] RFID is a new technology in which small computer-readable tags are sewn into the garment to track its progress through the production process. Some firms are considering trying it, but none have so far, that we know of.

percentages are high compared to international averages. Firms try to minimize the loss by removing the portion of fabric with a significant defect, as fabric constitutes around 70 percent of the total cost of manufacturing a garment. However, not all fabric faults can be detected at the fabric inspection stage, and sometimes are only detected once the denim garment has been washed. Major fabric faults, such as a hole in the fabric, cannot be repaired and the entire worked garment will be rejected. In one firm, fabric defects not discovered until after the garment was completed were responsible for a quarter of the reject rate.

Given constantly changing fashion trends, factories have to adapt to producing a large variety of styles, regardless of whether they produce almost exclusively for one buyer or, like others, produce for multiple brands. This may have consequences for efficiency and quality if there is a learning curve for each new style. One large buyer for an international brand explained that one of their Pakistani suppliers had been the fastest factory in the world when they produced a single style of a pure cotton garment, but that their efficiency fell and defects increased when styles changed and stretch fabrics were introduced. In our survey, however, fewer than half the supervisors felt that changing styles were associated with a greater rate of defects. Our analysis of production and defect data from a sample of firms that is currently underway will yield a more objective answer. Supervisors did feel, however, that rushing to complete an order compromises quality and they try to avoid it as much as possible.

In one large denim factory, a new quality program was recently implemented, using color-coded cards that are hung on each operator's station. Roaming inspectors check seven pieces of each operator's first bundle on their shift and give out cards coded green (good), yellow (one or two problems), or red (serious errors). Operators who receive yellow and red cards are rechecked mid-shift and everyone is checked again toward the end of the shift. Supervisors then have a clearer idea of whose work needs closer monitoring and the public nature of the cards may incentivize workers who would be embarrassed by working underneath a yellow or red card. Stations assigned delicate or critical operations are marked with an orange card, and a blue card is hung on broken-down machinery. This way, supervisors and managers visiting the factory floor have a clear idea of the status of operations. When we visited, there were plans to designate a silver reward card. The firm felt that the experiment had been successful and planned to continue it as well as sharing its experience with other firms.

6. Concluding Remarks

According to our observations and survey responses, ustads in the fan sector and supervisors in the garment sector exercise a fair amount of authority and discretion. However, most of their training remains informal. Middle managers with more formal training would have more knowledge of modern techniques for quality control and lean production methods. However, in the context of Pakistan, where most firms remain firmly in the control of family members, what role can a cadre of outsider professional managers play?

We have also observed that output monitoring (quality checking) is widespread in both sectors under the piece-rate system, but that quality problems remain pervasive. Insiders perceive there to be a quantity-quality tradeoff under the piece-rate system, but see no other way to meet production targets on time for foreign buyers while the workforce remains primarily male. There is a belief – but it is no guarantee – that, if more women entered the workforce and took fixed-wage jobs, the quality problems would resolve themselves. Alternative systems of quality control, such as cross-routing defects or the colored card system of inspections, might be tried experimentally.

However, beyond quality tradeoff, piece rates may have other consequences, such as hindering the adoption of new technologies. For instance, Atkin et al. (2014) show that, when learning is required to adopt a new technology, workers paid piece-rates may earn less in the transition because learning slows them down. This will cause workers to resist innovation unless they are compensated during the transition to the new production technique. In the fan and garment sectors, as long as middle management is weak and demand lumpy, it is likely that piece-rate wages will remain in the medium term. There may be a role for large international buyers, however, to mandate changes in labor or wage practices; we have heard of many cases where firms in Pakistan have been responsive to buyers' rules and regulations.

In the future, it may pay dividends for researchers to consider firms' choices regarding management practices, organization, and wage practices as interrelated, rather than as independent, factors influencing firm performance. For example, Hong, Kueng, and Yang (2014) find that performance pay complements decentralized decision-making in the firm and is correlated with outsourcing and total quality management.

Some larger, related questions involve the role of clusters in manufacturing in developing countries, particularly Pakistan. On the one hand, agglomeration has helped the manufacturing sector to develop by inducing firm entry and growth (Delgado, Porter, & Stern, 2010; Glaeser & Kerr, 2009; Haroon, 2013; Otsuka, 2008; Rosenthal & Strange, 2010). On the other, might agglomeration be locking firms into suboptimal wage and management practices and technologies? For example, the incentives for firms to invest in training their workers may be low when the latter can easily (and often do) move between firms in the sector. Also, it may be difficult for firms to convince workers to learn new technologies, production processes, or management practices when there are other employers available nearby. Workers may choose to seek alternative employment in the cluster if such adjustments entail disutility or lost wages during the transition process. Finally, workers may hesitate to make their skills firm-specific because this might make it difficult for them to move to other firms in the cluster in the future.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 205–224

The State of Manufacturing in Pakistan

Rajah Rasiah* **and Nazia Nazeer****

Abstract

The history of successful industrializers, such as South Korea and Taiwan, shows a systematic shift in the production structure from low- to high-value added activities in manufacturing and its resulting impact on agriculture, mining and services. Within manufacturing, the transformation is seen in both a movement from low-value added sectors, such as apparel making, to high-tech activities, such as automotive and electronics products, and, within particular industries, vertical integration into knowledge-intensive activities.

Pakistan's failure to engender the conditions to stimulate technological upgrading within its leading manufacturing industry of clothing, and a shift away to higher-value added industries is the prime reason why the country has not achieved rapid growth in GDP per capital over the long-term. This paper discusses Pakistan's stagnation in manufacturing over the period 1960-2013 against the experience of the rapid industrializers of South Korea, Taiwan and Malaysia. Drawing on empirical evidence it argues that Pakistan requires a dynamic industrial policy that focuses on technological upgrading in its existing manufacturing sectors and the creation of competitive advantage in high value-added sectors if the country is to experience sustained long-term economic growth.

Keywords: Manufacturing, industries, policy, Pakistan.

JEL classification: L60, O25.

1. Introduction

Pakistan has a rich history of producing and exporting cotton and cotton-based goods. Following independence in 1947, much was expected of the country, given that it was endowed with reasonable levels of human capital compared to other newly independent countries at the time. However, Pakistan has remained a poor country, so much so that its per

* Department of Development Studies, University of Malaya.
** Department of Economics, University of Malaya.
We have benefited enormously from conversations with and suggestions from Irfan ul Haque, Naved Hamid, Shahid Amjad Chaudhry, Azam Chaudhry, and Khalil Hamdani. The usual disclaimer applies.

capita income grew only about fourfold from US$ 219 in 1960 to US$ 790 in 2013 in constant 2005 prices (World Bank, 2014). This growth does not compare well with that achieved by South Korea and other rapid industrializers such as Malaysia, Thailand, and China. Korea's per capita income (in 2005 prices) rose by around 22 times from US$ 1,107 in 1960 to US$ 23,893 in 2013. Malaysia's GDP per capita grew sevenfold from US$ 987 in 1960 to US$ 6,998 in 2013. Thailand's GDP per capita grew eightfold from US$ 437 in 1965 to US$ 3,348 in 2013. China's GDP per capita growth significantly surpassed that of Malaysia and Thailand, growing by 15 times from US$ 246 in 1982 to US$ 3,567 in 2013.

Cotton-related clothing has remained Pakistan's chief export, even in 2014, unlike the case of successful industrializers, where clothing eventually became relatively less significant as they shifted toward high value-added economic activities. This contrasting growth experience largely explains why material living conditions in Pakistan have not improved significantly. This paper examines possible economic reasons for why the country was unable to join the Asian "tigers" to achieve long-term rapid economic growth. We analyze the structural changes that pushed Pakistan toward manufacturing activities, and within manufacturing from low- to medium- and high-technology activities. We also assess the extent of technological upgrading achieved in its chief export – clothing.

Section 2 discusses the theoretical issues relevant to analyzing the state of manufacturing in Pakistan. Section 3 presents the methodology and data used. Section 4 examines the state of manufacturing in Pakistan with a special focus on its leading industries – textiles and clothing. Section 5 presents the study's conclusions.

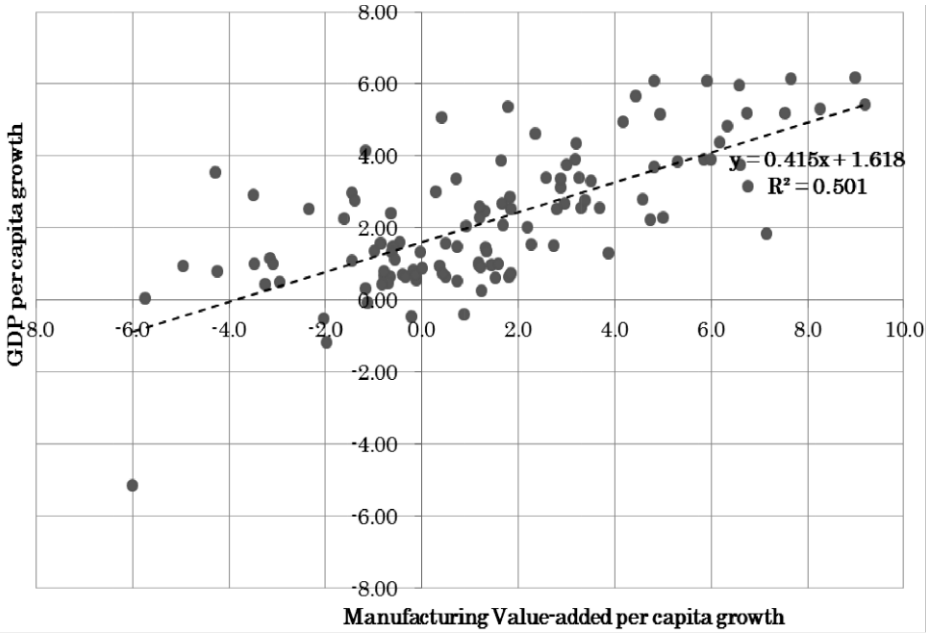
2. Theoretical Considerations

Industrial policy has a long history: the first instance is considered to have originated accidentally in Britain in the 15th century (Reinert, 2007). Early efforts to define industrial policy referred to the term as a policy or set of policies targeted at expanding industry in general and manufacturing in particular (Kaldor, 1967). While some economists, such as Young (1928) and Kaldor (1957), focused on the differentiating characteristics of industrialization and its impact on the division of labor and economic expansion, they did not specifically analyze the technological deepening and structural change from low- to high-value added activities that is essential for manufacturing to remain an engine of growth.

As Rowthorn (1975, 1979) shows, Kaldor's growth equations that were run to establish the increasing returns argument using Verdoorn's law were flawed. Nonetheless, the idea that manufacturing is an important driver of economic growth – at least during the development phase of particular economies of reasonable size and population – has strong support from classic texts such as Smith (1776), Hamilton (1791), and List (1885) and from contemporary studies such as Chang (2002) and Reinert (2007).

There is also strong empirical evidence to support the increasing returns argument associated with manufacturing (see Kaldor, 1967; Singh, 1989; Rasiah, 1994, 1996). Since industrialization is expected to remain important (positive) even when deindustrialization sets in, it is possible to examine the elasticity of GDP per capita with respect to manufacturing per capita even for developed countries, although knowledge-based services are expected to overtake manufacturing as the prime engine of growth. This becomes clear when we regress manufacturing value added per capita on the GDP per capita growth rates for all countries for which data are available over the period 2000–10 (see Figure 1).

Figure 1: Relationship between GDP per capita and manufacturing value-added per capita growth rates, 2000–10 (elasticities)



Source: Authors' calculations based on World Bank data (2014).

Although, in this case, several countries had already developed by the turn of the millennium and a number of economies are small and resource-driven, the relationship between GDP per capita and manufacturing value added per capita growth rates (estimated using 2005 prices) remains strong. Since the constant is not significant and the coefficient of x is significant at the 1 percent level, a one-percent rise in manufacturing value added per capita will generate a 0.4 percent rise in GDP per capita.

While Chenery, Robinson, and Syrquin (1986) attempt to analyze structural change within manufacturing, they confine their analysis to categorization by capital goods, consumer durables, intermediate goods, and raw materials. Feldman (1928), Kalecki (1976), and Mahalanobis (1955) have presented growth accumulation models that target the capital goods industry. Lall (2000) subsequently classifies industries as high-tech, medium-tech, and low-tech to address the sophistication of countries' economic structures. However, these classifications do not address innovation and technology directly.

The transformation of production into different stages and the evolution of embodied knowledge in which the depth of innovation transcends the nature and type of goods and services means that it no longer matters whether countries experience structural transformation by way of specializing in consumer to intermediate to capital goods. For example, Taiwan and Singapore show greater specialization in components and intermediate goods than Malaysia, but are technologically superior to the latter, which is reflected in their respective value-added activities. Hence, a successful industrial policy should be viewed as an exercise used to successfully stimulate sustainable economic transformation from low- to high-value added activities of targeted (as well as other) industries in the economy.

Classic works such as Marx (1957), Veblen (1915), and Schumpeter (1961) laid the foundation for an assessment of technology. Subsequently, Rosenberg's (1983) unbundling of the "black box" led to a plethora of work defining technological capabilities (see, for example, Dahlman, 1984; Bell, 1984; Lall, 1992). Rasiah (2007, 2008) extends the typologies necessary to locate the technological capabilities of firms and differentiate their position using taxonomies and trajectories against the world's frontier firm in particular industries. Rather than defining these typologies in static terms, Rasiah (2007, 2008) follows Nelson's (2008) argument that typologies change with time, location, and industry. Rasiah (2004) does not regard

investment capability as an integral part of technological capabilities, given that the *chaebols* and large integrated circuit (IC) firms in Taiwan were launched through heavy government financing.

The catch-up literature, which has its origins in Marx's notion of capitalist integration and accumulation, expanded with Veblen (1915), Gerschenkron (1962), and Abramowitz (1956). These works gave rise to the idea that the state has a developmental function beyond its regulatory role. The empirical foundations of the developmental state articulating the active role of government in stimulating industrial structural change can be found in works explaining industrial catch-up by Japan and Korea (see Johnson, 1982; Amsden, 1989; Wade, 1990). However, while Amsden (1989) and Amsden and Chu (2003) provide explicit accounts of catch-up in particular industries, Johnson (1982) and Wade (1990) do not present empirical evidence on innovation and technology against the particular industrial policy pursued by Japan and Taiwan, respectively.

Industrial deepening has also benefited from institutional change led by the government (Fagerberg, 2006). The innovation system comprises a country's institutions, its political progression, infrastructure for research and development (R&D), financial setup, and labor force, all of which influence the way it generates, distributes, attains, and utilizes knowledge. Global knowledge is one of the strongest tools to facilitate technological change through foreign direct investment (FDI), the transfer of technology, licensing technology and trade. As Amsden (1989) argues succinctly, latecomer economies have benefited from acquiring and adapting imported technology from developed countries to spearhead their catch-up process (see also Rasiah, Singh, & Ernst, 2015). The relationship between the national innovation system and import substitution industrialization (ISI) helps balance science, technology, and innovation policies in emerging economies. Moreover, these linkages could support sufficient understanding to enable interaction among global institutional factors, collaboration in R&D, and the migration and return migration of knowledge workers.

Taking our cue from these accounts, we examine how Pakistan's manufacturing sector has evolved since the 1960s and its relationship with GDP per capita against selected countries. The next section presents our methodology for analyzing Pakistan's industrialization experience.

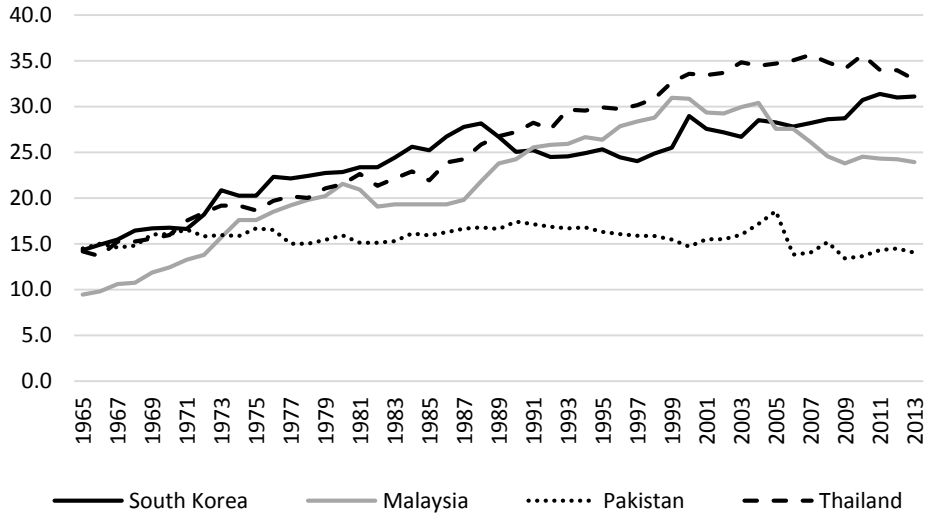
3. Methodology and Data

The first part of the analysis examines the link between manufacturing and GDP per capita, using selected countries for which data are available, to establish the significance of manufacturing as an engine of GDP per capita growth. We use the years 1970, 1990, and 2013 to establish this link. The assessment will allow us to explain why Pakistan's GDP per capita only increased about fourfold over the period 1960–2013, while that of the rapid industrializers, such as South Korea and China, rose far more.

The second methodology examines changes in value added and exports of manufacturing based on Lall's (2000) classification of high-tech, medium-tech, and low-tech industries. The data for manufactured exports and production in Pakistan is analyzed for the period 1960–2013 to examine the extent of structural shift experienced by the country. This is then compared with selected countries for years for which data is available.

The third exercise seeks to analyze the extent of structural change experienced by Pakistan's dominant manufacturing industry – textiles and clothing – over the period 1970–2010. Diversification into upstream and downstream activities is classified as functional integration within the industry (see Figure 2).

Figure 2: Percentage share of manufacturing in GDP for selected countries, 1965–2013



Source: Authors' calculations based on World Bank data (2014).

Functional upgrading is considered to be taking place if the structural shift within the industry involves downstream integration from cotton fiber to yarn, and from yarn to knitted and woven fabrics (Rasiah, Yap, & Yap, 2015). This also applies if there is increased production of mixed fibers (e.g., cotton and synthetic fiber such as polyester) and its downstream processes such as spinning, and weaving and knitting. However, the data we have does not allow us to distinguish between upgrading and just integration because we lack information on designing, R&D, and logistics for both the textiles and clothing industries in Pakistan.

Combining both dimensions of technological upgrading, it is possible to define the technological depth of textiles and clothing firms, albeit without profound coverage of the technological depth of these operations. Hence, it is possible to evaluate the success of industrialization by first examining if inter-sectoral and intra-industry upgrading has taken place in Pakistan's two leading manufacturing industries, i.e., textiles and clothing.

4. Manufacturing

Pakistan's turbulent economic history largely explains its uneven economic growth experience. However, fundamental to its slow growth have also been (i) the lack of a strong foundation in manufacturing with little diffusion of new technologies, (ii) firms' inability to access international best practices, and (iii) "brain drain". Not only has manufacturing contributed less to GDP in Pakistan relative to the successful industrializers (South Korea, China, and Malaysia), but it has also started to deindustrialize prematurely before achieving specialization in high-value added activities.

4.1. Contribution to GDP

One way to analyze the importance of manufacturing in an economy is to examine its share of GDP and compare changes in this over a period of time with comparable economies. For this purpose, we use South Korea, Malaysia, and Thailand, which either showed lower shares than Pakistan or were similar in 1965 when the host governments had not started focusing seriously on promoting industrialization. The trend shifts are then analyzed against policy focus until 2013.

As Figure 2 shows, Pakistan's (14.5 percent) share of manufacturing value added in GDP exceeded that of South Korea (14.3

percent), Malaysia (9.5 percent), and Thailand (14.2 percent) in 1965. South Korea's share rose in trend terms to 31.1 percent in 2013, interrupted in the intervening years by imported economic crises. Whereas Malaysia's share rose to 30.9 percent in 2000 before falling to 23.9 percent in 2013, Thailand's share rose steadily to 35.6 percent in 2010 before falling slightly to 32.9 percent in 2013. National firms have continued to shape the technology frontier in a number of industries (e.g., memory chips, shipbuilding, iron and steel, consumer electronics and smartphones) so as to support manufacturing as the prime engine of growth in South Korea.

Among these countries, South Korea's achievement is, by far, the most dramatic: rising manufacturing productivity has propelled the nation into developed country status. Using export-processing zones and FDI as springboards, Malaysia managed to appropriate considerable industrial synergy to fuel its economic growth till 2000. However, slow technological upgrading against soaring production costs cooled down the rate of manufacturing growth during 2000–13. In Thailand's case, extensive focus on supplying East Asian markets through the use of foreign technology in automotive manufacturing and other industries strengthened the manufacturing sector's share of GDP. Against these achievements, Pakistan has performed dismally: low-value added resource processing only raised manufacturing's contribution to 18.6 percent in 2005.

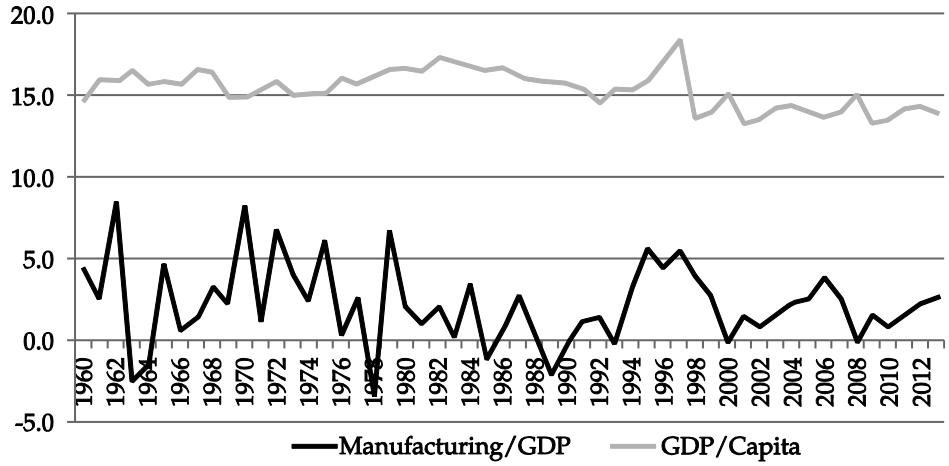
Of the four countries examined, South Korea has enjoyed the most dynamic industrial policy, using a carrot-and-stick approach to good effect to stimulate capital accumulation as the state subsidized the chaebols' forays into high technology and heavy industries to catch up with and leapfrog over incumbents. The diffusion of foreign technology through licensing agreements, acquisition of critical firms, deepening of education and science and technology institutes, and the hiring of nationals carrying tacit knowledge in the industry played a central role in quickening the technological catch-up of South Korean firms. The successful catch-up experience of the chaebols has spearheaded the country's rapid economic growth.

Malaysia's ability to provide excellent basic infrastructure, political stability, and security stimulated the massive relocation of FDI. While this propelled growth and resource rents from natural endowments (e.g., oil and gas, and oil palm) helped make Malaysia a middle-income country, a lack of strong education, and science and technology policies and the ineffective strategies used to import foreign

technology undermined its capacity to stimulate technological catch-up in high technology and heavy industries (Rasiah, 1995). Thailand has managed to upgrade in light industries, such as jewelry and canned foods, and provided ideal incentives for regional assembly of automobiles by foreign firms. The lack of a dynamic industrial policy focused on learning and technological catch-up has, however, restricted its capacity to stimulate rapid economic growth.

Not only has Pakistan's manufacturing remained in low-value added activities, but it has also failed to stimulate rapid per capita income growth (Figure 3). Manufacturing has suffered from a lack of policy support for technological upgrading, while exchange rates and indirect taxation have undermined resource allocation in the sector. Political instability and lack of security have denied the country the easier route of offering excellent basic infrastructure a la Malaysia to attract FDI. In fact, deindustrialization has emerged in Pakistan prematurely since 1986 with the share of manufacturing falling from 18.6 percent in 2005 to 14.0 percent in 2013.

Figure 3: Manufacturing share of GDP and GDP per capita growth rate, Pakistan, 1968–2013



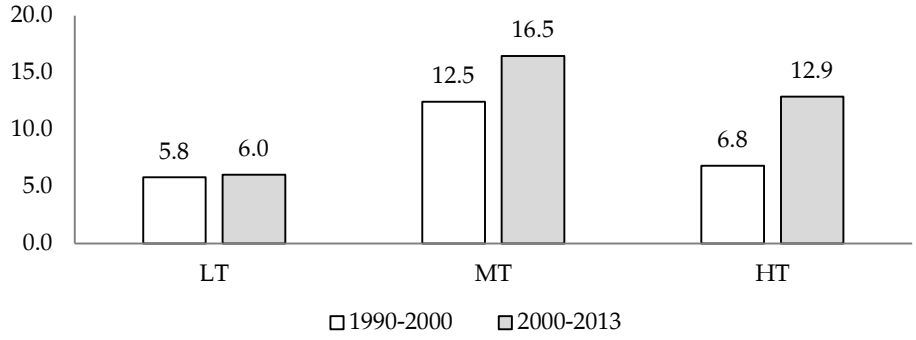
Source: World Bank (2014).

It is obvious that manufacturing has stagnated in Pakistan. While a strategic focus was never applied in the country to fuel manufacturing, the sector has also suffered from a region rife with political instability and insecurity. Hence, manufacturing has hardly evolved to include medium- and high-technology activities, a topic we discuss in the next subsection.

4.2. Technological Specialization

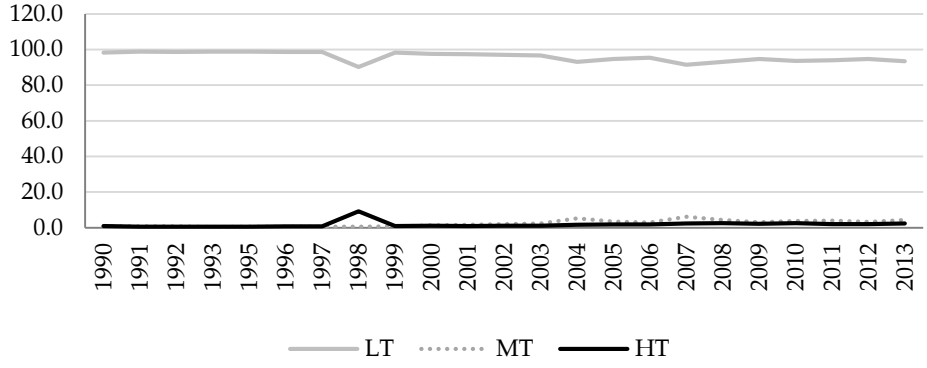
Following Lall's (2000) measure of competitiveness, Pakistan's manufacturing sector demonstrated high growth in medium- and high-technology industries during 1990–2013 (Figure 4). However, that was only because their starting bases were very small. In addition, medium- and high-technology industries focus on low-end manufacturing activities for the domestic market. Examples include the manufacture of electrical fans. This explains why low technology (LT) industries still account for around 98 percent of Pakistan's manufactured exports (Figure 5). Clearly then, manufacturing has not undergone inter-industry structural change within the sector.

Figure 4: Annual average growth in exports by technological intensity, Pakistan, 1990–2013



Source: Authors' calculations based on Comtrade data.

Figure 5: Percentage export breakdown by technological intensity, Pakistan, 1990–2013

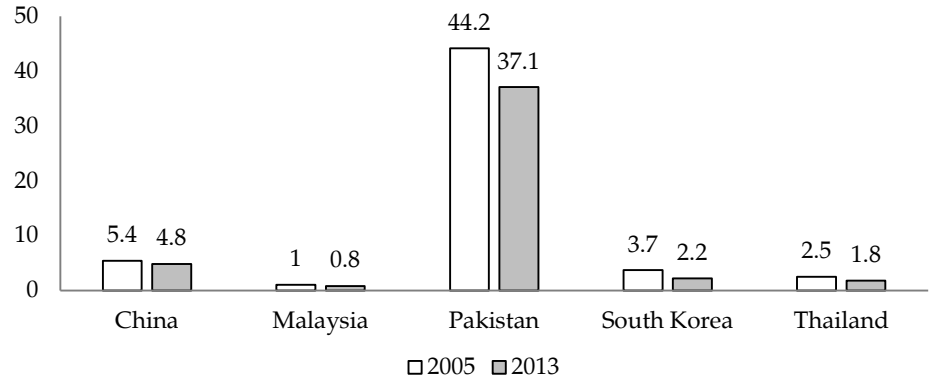


Source: Authors' calculations based on Pakistan Bureau of Statistics data.

4.3. Low-End Textile and Cotton Exports

Whereas textiles and clothing spearheaded early expansion in the manufactured exports of South Korea, China, Malaysia, and Thailand, structural change from low- to medium- and high-value added activities drove down their relative significance in exports. Thus, textiles accounted for only 5.4, 1.0, 3.7, and 2.5 percent in 2005, which fell to 4.8, 0.8, 2.2, and 1.8 percent of overall exports in China, Malaysia, South Korea, and Thailand, respectively, in 2013 (Figure 6). Pakistan's textiles industry remained the cornerstone of manufacturing exports, accounting for 44.2 percent of exports in 2005 and 37.1 percent in 2013. While Pakistan has undergone little industrial structural change, its leading manufactured export, cotton and cotton-based products, has also experienced little vertical and functional upgrading.

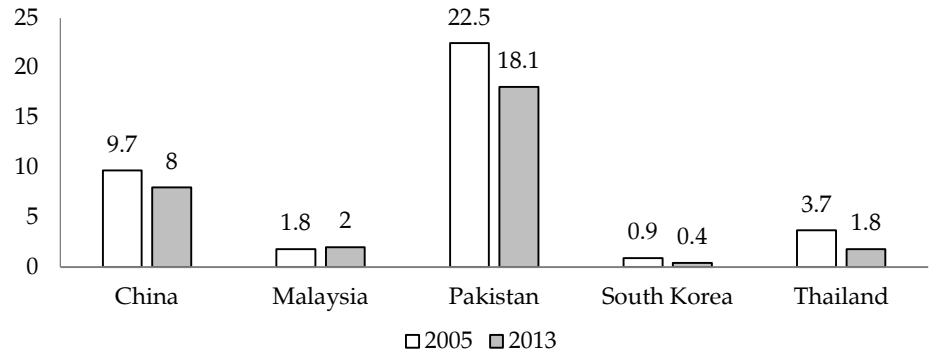
Figure 6: Textile exports as a percentage of total exports, selected countries, 2005–13



Source: Authors' calculations based on World Trade Organization data (2008, 2014).

In addition, clothing accounted for only 8.0, 2.0, 0.4, and 1.8 percent of overall exports for China, Malaysia, South Korea, and Thailand, respectively, in 2013, (having changed from 9.7, 1.8, 0.9, and 3.7 percent in 2005). Pakistan's share of overall exports remained high at 18.1 percent in 2013, falling from 22.5 percent in 2005 (Figure 7). Hence, textiles and clothing together accounted for 55.2 percent of all exports of Pakistan in 2013.

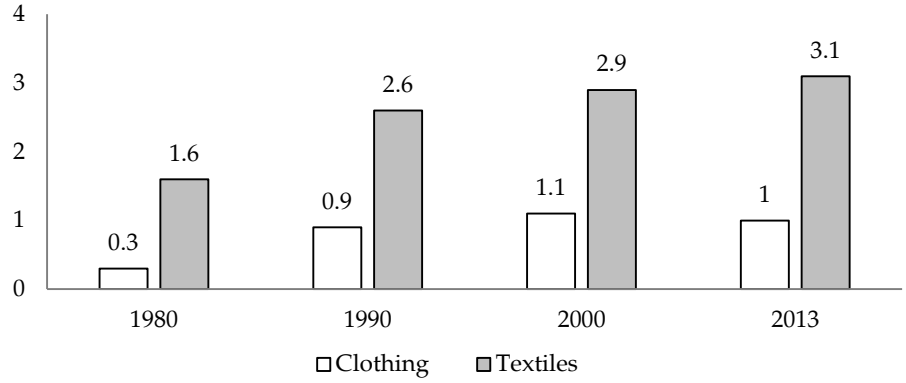
Figure 7: Clothing exports as a share of total exports, selected countries, 2005–13



Source: Authors' calculations based on World Trade Organization data (2008, 2014).

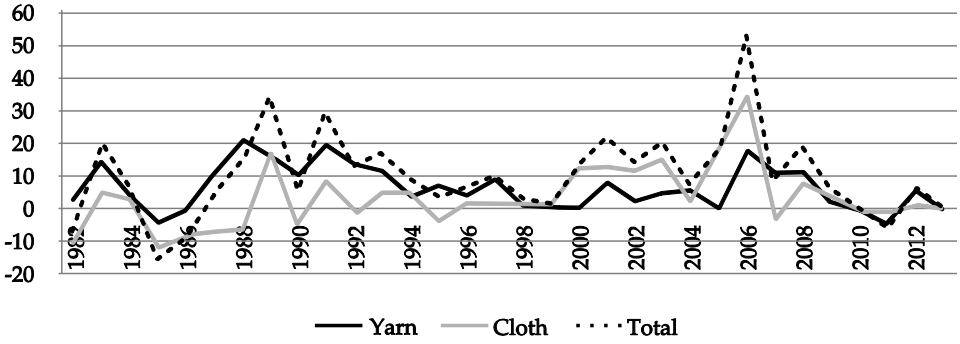
As an agricultural country, Pakistan produces large amounts of raw wool and cotton to support its textiles and clothing industry. The sector produces five types of fabric: blended, bleached, dyed, printed, and grey (which accounts for about half the overall production). Such an overwhelming dominance of textiles and clothing in Pakistan's exports reflects the lack of industrial policy focus – there has been little shift toward the medium- and high-technology industries. Pakistan's share of textile exports in global exports rose from 1.6 percent in 1980 to 3.1 percent in 2013 (Figure 8), whereas its share of clothing exports in global exports rose from 0.3 percent in 1980 to 1.1 percent in 2000 before falling to 1.0 percent in 2013. Indeed, cotton yarn grew far more than clothing exports over the period 1982–2013 (Figure 9).

Figure 8: Percentage export share of world exports, Pakistan, 1980–13



Source: Authors' calculations based on World Trade Organization data (2014).

Figure 9: Annual growth in cotton yarn and cloth exports, Pakistan, 1982–2013



Source: Authors' calculations based on Pakistan Bureau of Statistics data.

Since Pakistan specializes in low-value added textiles (especially in raw fiber and in processed and grey fabric exports) and clothing (Table 1), efforts must be made to stimulate upgrading in the industry and to spawn medium- and high-technology industries. For an integrated high-value added textiles and clothing industry to emerge, the country must stimulate (i) upgrading vertically so as to raise the value added within the textiles and clothing industries, and (ii) functional upgrading to include designing, logistics, and the manufacture of complementary support materials and machinery, such as resins, air-jet looms, auto-fabric scanners, computer-aided design and computer-aided manufacturing machinery (Figure 10).

Table 1: Textiles and clothing exports, Pakistan, 2012–14

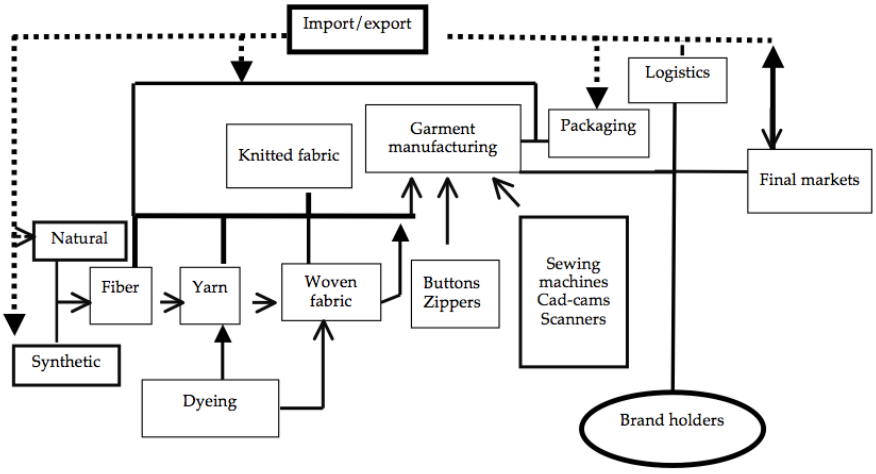
	July–April			Absolute change
Particulars	**2012/13**	**2013/14**	**%Change**	**($ million)**
Overall textiles and clothing	10,739.8	11,437.6	6.5	697.8
Raw cotton	138.3	196.1	41.8	57.8
Cotton yarn	1,860.5	1,708.1	-8.2	-152.4
Cotton cloth	2,224.0	2,346.8	5.5	122.8
Knitwear	1,663.6	1,842.1	10.7	178.5
Bed wear	1,468.2	1,767.3	20.4	299.1
Towels	645.0	624.5	-3.2	-20.5
Readymade garments	1,470.8	1,580.8	7.5	110.0
Made-up articles	480.8	552.1	14.8	71.3
Other textile manufactures	788.6	819.8	4.0	31.2

Source: Pakistan Economic Survey 2013/14.

Pakistan's cotton-based industry is characterized by an integrated production chain – from cotton cultivation to ginning, weaving, knitting, processing, and finishing of fabrics – but little technological upgrading. The industry can only become strongly integrated if it is clustered to include the higher-value added segments of branding and logistics, and the strong presence of machinery and material suppliers (Figure 10). It has been adversely affected by soaring gas and electricity prices, political insecurity, and technological stagnation. The lack of vocational and technical education has restricted the capacity of workers to absorb best practices in the industry, which is critical if the sector is to compete with exports from China, Bangladesh, Cambodia, and India.

Thus, Pakistan's manufacturing is still dominated by low-technology textiles and clothing. Indeed, resource-based textiles have been the leading export (exceeding clothing exports), thereby suggesting that little functional upgrading has taken place. High-technology products have been insignificant, while exports of synthetic textiles have led to medium-technology exports performing marginally well in Pakistan. It could learn from Malaysia, the Philippines, and Thailand where high-technology products have become the dominant manufacturing exports. However, while it is good to stimulate structural change into medium- and high-technology industries, Pakistan should not abandon the apparel industry. Instead, it should undertake more designing, R&D, and brand marketing in the clothing industry, while raising the value added by engaging in the complementary industries of machinery (knitting and weaving machines) and dyes.

Figure 10: Textiles and clothing value chain, 2015



The industrialized economies of South Korea and Taiwan consciously drove institutional change and evolved their technological capabilities to raise the competitiveness of their national firms. For example, both targeted domestic R&D to acquire and evolve technology-intensive activities that allowed them to eventually catch up with and leapfrog over early movers in several industries. Samsung's leadership in memory chips and Taiwan Semiconductor Manufacturing Corporation's frontier status in logic chips are examples (see Rasiah, Yap et al., 2015). Instead of leaving it to markets, which are prone to failure when it involves the promotion of technical change, Pakistan should adopt a proactive industrial policy to stimulate industrialization and structural change from low- to high-value added activities.

5. Conclusion

We have seen that manufacturing was never a major sector in Pakistan. While being confined to low-value added activities, it has started to contract since 2005. Specialization in resource-based yarn and cloth and in clothing production has meant that the industry has remained in a slow growing market niche. Industrial deepening from low- to high-value added activities are essential if manufacturing is to play the engine-of-growth role that it did for South Korea to stimulate rapid GDP growth. Any attempt to make manufacturing the engine of growth so as to engender conditions for rapid growth and structural change will require introducing a carefully crafted industrial policy that takes account of existing and future endowments.

The existing disincentives facing the sector must also go, while exchange and interest rates must be slightly regulated to support the manufacturing sector. This is what South Korea did during the early years of rapid growth in the 1970s. In addition, there must be initiatives to stimulate a structural shift from low-technology to medium- and high-technology industries. The government will have to gradually increase its emphasis on R&D activities, including designing, with grants and incentives carefully allocated and regulated to ensure strong industry-driven appropriation.

The formulation of industrial policy to stimulate industrialization will require the development of industrial zones, science and technology parks, and airports and seaports with good infrastructure. It is important that good basic and high-technology infrastructure is developed in

potentially well-endowed areas as they are critical in providing the synergy required to support manufacturing.

The government should simultaneously expand technical and vocational education in schools, and support R&D activities in universities that are targeted at commercialization. Science parks should be developed in strategic locations so that the R&D undertaken in universities and laboratories is either channeled to upgrade existing firms or launched as new start-ups to generate commercial products as well as products and services targeted at improving public welfare.

Since subsidized finance is critical to support these activities, funds must be carefully accounted to ensure that all rents are appropriated productively, and the steering of industrial policy targets is reoriented quickly to avoid costly losses. Such calibration exercises must be done at regular intervals, given the uncertainty gap between plan and reality.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 225–240

Globalization: The Challenge for Pakistan

Khalil Hamdani[*]

Abstract

This paper makes the case for Pakistan to engage actively in globalization. At present, the country is more a recipient of globalization than a participant. There is a need to shift the terms of engagement from passive to active involvement. Particular effort is needed to encourage foreign companies already present in Pakistan to integrate activities with their global operations. Export-oriented investment requires a more favorable trade regime. Above all, global engagement will require Pakistan to build up its technological capabilities substantially, both at the enterprise level and economy-wide. These shifts imply a revitalized industrial policy endorsed by industry and a vigorous policy thrust aimed at investment-led growth.

Keywords: Globalization, investment, trade, technology, industry, Pakistan.

JEL classification: F21, F63, O38, O53.

1. Introduction

The new globalism that unfurled in the mid-1980s continues to challenge countries, large and small, as well as international institutions created for an earlier era. Thirty years of globalization have witnessed deep financial crises as well as remarkable economic growth. On the positive side, a number of developing countries have made rapid progress. They have tapped into the worldwide flows of capital, technology, goods and services, and in the process they have vitalized their domestic industry and entrepreneurial activity, and accelerated the structural transformation of their economies. Surprisingly, Pakistan is not among this group of emerging economies.

It is surprising because the preconditions were right. Pakistan in the mid-1980s had, relative to other developing countries, a sound industrial base, a good technological infrastructure, and a fairly open policy regime.

[*] Visiting professor, Graduate Institute of Development Studies, Lahore School of Economics; former director, Investment Division, United Nations.

The economy was, arguably, well positioned to engage in the cross-border connectivity unleashed by globalization. In many other respects as well – its strategic location, large market, and language; its secular culture and pragmatic disposition – Pakistan was ready for globalization.

Without entering into the economic history of the past 30 years, it is apparent that Pakistan has remained on the margins of globalization while other developing countries – some in less fortunate circumstances – have advanced in the world economy. Of course, their advancement is independent of our slippage, but it is indicative of missed opportunities. Even as Pakistan's economy was seemingly flourishing, global trends downgraded its industrial base to low-tech, reclassified its exports as traditional, and raised the entry barriers for dynamic industries. Pakistan's paralysis is particularly disappointing as successive governments swallowed the bitter medicine of the Washington Consensus, but were unable to deliver the cure. Our discontents are understandable.

Nevertheless, there is need for Pakistan to engage more actively in globalization. This paper highlights a key feature of globalization – international production – and suggests how it can be tapped in ways that modernize industry and better integrate the domestic economy into the world economy. All this will require national effort; successful participation in globalization involves more than policy liberalization and market orientation. It is also a challenge: the geopolitical landscape today is very different from that of the 1980s, the competitive setting is stringent, and policies are subject to international discipline. A fresh approach to industrial strategy is, therefore, needed.

2. Globalization in Brief

Globalization refers, simply, to the deepening of the world economy. There is greater trade, investment, technology, finance, and movement of persons between countries and within regions. The flows are multi-directional, intra-industry and, in some cases, volatile. This complex economic connectivity has multiple growth poles. National regimes conform increasingly to international agreements and standards. The world is not converging on one economy or one government – the number of political states has increased – but national economies are becoming more integrated with a global economy under common governance.

Globalization is an ongoing phenomenon. Historians say that the first big wave of globalization occurred before the First World War in a

period marked by the expansion of international trade and integration of commodity markets, as well as outward investment and migration.[1] There was a revival after the Second World War with the establishment of international institutions and successive rounds of tariff reductions. The integration of currency and financial markets ushered in a more turbulent period: the collapse of the Bretton Woods system of fixed exchange rates in 1973 and the debt crises of the early 1980s. The complications of financial globalization – systemic volatility and contagion – were felt once again, and severely in 1997 and 2008. At the same time, globalizing trends in the real sector evolved visibly in the mid-1980s with the expansion of capital and technology, and the integration of production across borders. These opened up opportunities for developing countries to grow rapidly, industrialize, and increase their participation in the world economy. It is this latter aspect of globalization that is of interest.

A key driver of this new globalism of the mid-1980s was foreign direct investment (FDI) and the related activity of transnational corporations (TNCs).[2] Briefly, world FDI outflows grew by 24 percent per year in the second half of the 1980s and averaged a 10 percent annual increase over the next quarter century – an expansion that was significantly faster than that of world trade and world output (Figure 1). The surge in FDI was accompanied by an equally robust proliferation of nonequity TNC relationships (subcontracting, licensing, franchise and management ties), with an aggregate value exceeding that of FDI, thereby effectively doubling the real activity of TNCs.

The TNC expansion was initially to establish presence in industrial markets, driven also by mergers and acquisitions, and soon encompassed developing countries. This expansion began with TNCs'

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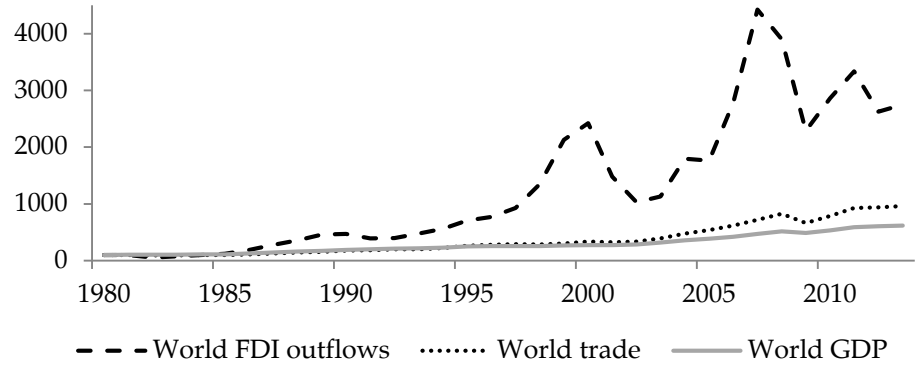
[1] There were earlier episodes of connectivity centered on the slave trade in the West and along the Silk Road in the East. However, economic historians distinguish between the simple expansion of trade and its deeper impact on the integration of markets (O'Rourke & Williamson, 2000). There was a significant change in the structure of the world economy in the 50 years before World War I (International Monetary Fund, 1997). Falling transport costs spread the technologies and division of labor of the Industrial Revolution worldwide. The distribution of world output shifted to Europe and North America from Asia and elsewhere; it is now rebalancing with the rise of the Global South (United Nations Development Programme, 2013). Generally, 1914 is considered a peak threshold, with world exports and imports together reaching 22 percent of world GDP (Estevadeordal, Frantz, & Taylor, 2003) and the stock of foreign direct investment (FDI) reaching an estimated 9 percent of world GDP (Bairoch & Kozul-Wright, 1996). These peaks were not surpassed until 1970 in the case of trade, and 1989 in the case of FDI.

[2] The new globalism is discussed in Dunning and Hamdani (1997). A basic reference for data and analysis on FDI and TNCs is the *World Investment Report* (an annual series published by UNCTAD). Unless otherwise noted, the data in this article is drawn from the UNCTAD database (http://unctadstat.unctad.org).

acquisition of or investment in standalone affiliates, followed by the integration of their operations along the value chain. The expansion, driven by digital technology, began in manufacturing and advanced to the offshoring and outsourcing of services. Through foreign production, TNCs penetrated overseas markets, lowered costs and raised the value added. The annual sales of their foreign affiliates now exceed world exports of goods and services. TNCs also dominate in other areas: 80 percent of world trade involves TNCs (as buyers and/or sellers) and they account for upward of 75 percent of global research and development.

Figure 1: Expansion of world FDI



Note: Index 1980 = 100.
Source: UNCTAD (http://unctadstat.unctad.org).

A measure of the resultant globalization is the rise in the stock of world FDI, from 7 percent of world GDP in 1985 to 36 percent in 2013. Trade in goods and services, driven by TNCs, increased from 35 percent of world GDP in 1985 to 62 percent in 2013. The deepening of the world economy is reflected in the changing character of cross-border exchange, which is no longer arm's-length between independent buyers and sellers, and is increasingly within corporate supply chains with international production fragmented in different locations and coordinated by regional and global headquarters. Services have become tradable and manufactures now trade as commodities – bought and sold in large numbers without regard to brand or origin.

The globalization of developing countries is reflected in their trade and investment. Their imports and exports rose from 44 percent of their GDP in 1985 to 70 percent in 2013. Their inward stock of FDI rose from 14 percent of their GDP in 1985 to 31 percent in 2013, while the

corresponding increase in their outward stock of FDI was from 3 percent to 19 percent. Importantly, opportunities opened up for developing countries to diversify away from resource- and labor-intensive production and participate more in dynamic industries, and to upgrade into higher-value segments of the world economy. Developing countries captured more than 70 percent of the trade in parts and components, which constituted more than 50 percent of the growth in world manufactured exports. Developing countries also increased their share of world services exports, from 20 percent in 1985 to 30 percent in 2013. Overall, developing countries have grown faster than the world economy; among them, the major exporters of manufactures grew most rapidly (Table 1).

Table 1: Economic growth (average annual growth rates in real GDP, %)

	1980–89	1990–2000	2000–10
World	3.3	2.9	2.8
Developing countries	3.5	4.9	6.1
Developing countries: major exporters of manufactures	6.0	6.7	7.0

Source: UNCTAD (http://unctadstat.unctad.org).

The East Asian economies were particularly successful in seizing the opportunities presented by globalization. Although Japan, the Republic of Korea, and Taiwan, China, did not rely on inward FDI when they industrialized in the 1950s and 1960s, they all relied on technology transfers through nonequity relationships with TNCs (licensing and subcontracting) to catch up with advanced countries. Importantly, their own firms later became global players through "flying geese" outward FDI. In the mid-1980s, Japanese automobile companies gained a competitive advantage in the markets of the US and Europe by fragmenting production processes and relocating simpler tasks (such as assembly) to lower-cost sites across Southeast Asia.

A similar pattern of complex international production emerged in electronics, with Korean and Taiwanese firms upgrading from original equipment manufacturing (OEM) to higher-value design and marketing, and relocating the manufacture of parts and components elsewhere in East Asia, including China. Asian FDI pulled in Western FDI. Thus, in the mid-1980s, the first-tier Asian "tigers" (in particular, Korea and Taiwan) upgraded from the export of low-technology products to medium- and high-technology products; the second-tier East Asian economies (in

particular, Malaysia and Thailand) graduated from the export of resource-based to low-skill manufactures. China advanced from the export of primary commodities to manufactures, emerging as the world's factory.

A key feature of the Asian experience was the emphasis on active national policies to build up domestic technological capabilities. Their aim in technology transfer went beyond acquisition of machinery and methods, and sought to learn and master production processes. They invested in education and human resource development, and provided training, managerial programs, and technical and financial support to help establish industry. Subsidies for and protection of the domestic market for infant industries remained relevant, but the real ladders for catch-up and rapid industrialization were the procurement of external technological inputs and the promotion of exports. Production catered to world demand, not domestic demand. This was natural for small economies, but even China, with a huge internal market, saw advantages in attracting FDI into special economic zones in order to tap external assets and develop capabilities to export to the world economy. This outward-oriented industrial policy was important to the success of East Asia.

Globalization makes catch-up easier, but also makes learning more important. The fragmentation of production into global value chains allows developing countries to participate in the manufacture of sophisticated products without progressing through the industrial path typically associated with hosting a standalone production facility. It hastens catch-up by easing entry into complex production through low-skill assembly operations. However, progression to more complex operations requires productive workers – educated, disciplined, with the capacity to learn new skills quickly. Thus, complex international production flattens the industrial learning curve at lower activity levels and steepens it at higher levels. The emphasis on technological learning allowed the East Asian countries to tap the entry opportunities that globalization opened up and, importantly, prepared them for the advance to higher levels.

While globalization has lowered the entry barriers to industrialization, progression within the product space can be difficult. Upgrading from low-skill to higher-skill production requires technological effort. At the same time, low-skill products increasingly occupy the less dynamic segments of world trade. The geographic shift in manufacturing from developed countries to a larger number of developing countries with a greater propensity to export has intensified

competition for market share and worsened the overall terms of trade for unskilled and low-technology products (fallacy of composition).

A case in point is the manufacture of garments: the number of developing countries exporting clothing to the US doubled between 1980 and 1995, but export prices for garments have declined since then (UNCTAD, 2005). Moreover, falling export prices increase global demand and encourage countries to expand output further rather than to innovate and diversify production. Thus, improved export performance need not lead to structural change. In the absence of technological learning and supportive industrial policy, progression toward more sophisticated production is impeded and industrialization is stunted.

Finally, globalization has revived the need for industrial policy, but with less focus on protecting infant industries and more on nurturing global players. International production involves continuous innovation: manufacturing is in constant makeover and processes become outmoded rapidly. Openness to trade and investment stimulates enterprises to learn new methods through cross-border connectivity (e.g., buyer–seller relationships, global value chains, and overseas presence). Protection creates a blind spot that can lead to a loss of competitiveness. At the same time, if the rate of technological obsolescence exceeds the rate of depreciation of physical capital, domestic enterprises may underinvest in upgrading their production processes. There is, therefore, a role for public institutions and policies to help enterprises close the blind spot and, as appropriate, bridge the divergence between obsolescence and depreciation.

Much depends on the economic context: in some cases, vintage technologies may be cost-effective; in other cases, leapfrogging to the technological frontier may be competitive. The decision rests with the enterprise, but the government can remove hurdles through financial support, infrastructure development, and policies that promote horizontal linkages (e.g., industrial clusters) and vertical linkages (e.g., supply chains) among enterprises, large and small, domestic and foreign. Also relevant are innovation partnerships that foster linkages and cooperation between the science, civic, and business communities (e.g., training, technical advice, and research institutes). The East Asian experience suggests the success of smart industrial policy based on the use of foreign capital and technology, the development of domestic capabilities, and nurture of key industries.

3. The Challenge for Pakistan

For Pakistan, the challenge of globalization is to position the economy within the evolving constellation of cross-border relationships so as to seize opportunities for rapid growth. At present, the country is more a recipient of globalization than a participant and needs to shift its terms of engagement from passive to active involvement.

On the plus side, Pakistan has benefitted well from the cross-border movement of workers. Pakistani workers going overseas are a form of outward investment that has returned large flows of remittances to the home economy. These remittances have had micro-benefits for low-income groups and poverty alleviation, and macro-benefits by stimulating domestic demand among a rising middle class and relaxing external resource constraints. Remittance receipts increased from 1 percent of GDP in 2000 to 7 percent in 2013, and the growth in remittances has outpaced the growth in trade.

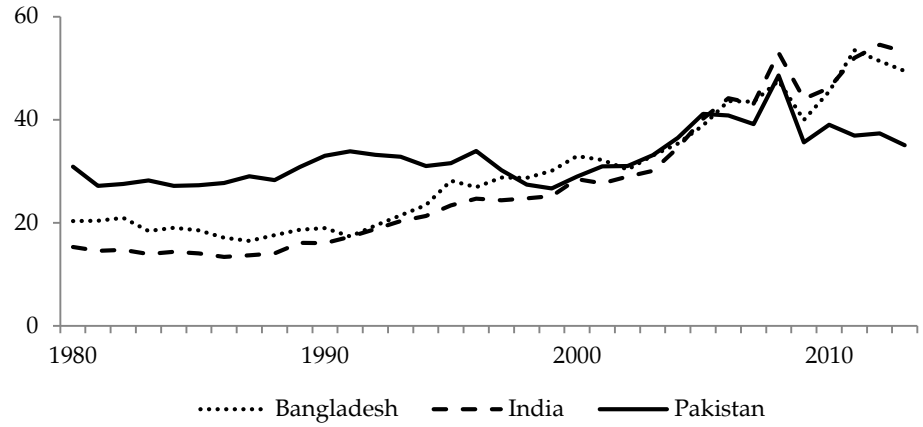
On the negative side, Pakistan has been complacent on investment and exports. It was not a major recipient of the worldwide surge in FDI. There was little FDI in manufacturing, and mainly in the extractive sector, which generates few economic spillovers. The FDI in services (e.g., banking and telecommunications) was beneficial, but entailed foreign outflows of profits and dividends (Hamdani, 2013). Pakistan has also not entered the dynamic segments of world trade and was a latecomer to international production and global value chains. It imports technology-intensive goods, but does not export technology-intensive products. The country's major manufactured exports are labor-intensive textiles and garments, which compete in a saturated world market with declining terms of trade.

While Pakistan's foreign trade (Figure 2) and investment (Figure 3) have been more open than those of its neighbors since the 1980s, the latter have performed better. All three South Asian economies export textiles, but India has also diversified its export structure and avoided declining terms of trade, while Bangladesh has attracted FDI in garments to become a top global exporter, moving up the value chain from "cut, make and trim" to OEM.

Complacency has placed the Pakistan economy on an unsustainable growth path. For some years, investment and large-scale manufacturing have been stagnant and growth has been driven by consumption (World Bank, 2014). The consumption boom has boosted

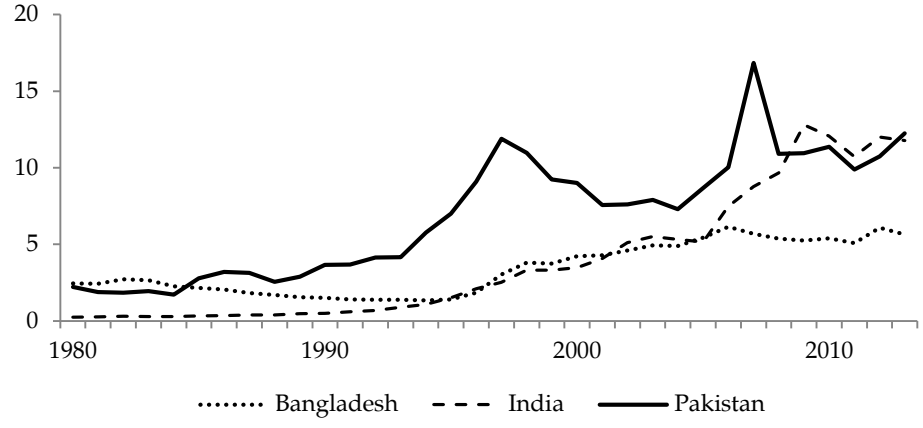
the services sector and small enterprises, but largely bypassed manufacturing (Nabi, 2010). A rising middle class demands consumer goods that remittances finance from abroad. The dream of the common man – in the vernacular of pulp fiction – is "to get filthy rich in rising Asia" (Hamid, 2013). Although the government has managed the external balance reasonably well, a preoccupation with short-term stability neglects the need for dynamic growth. The economy cannot sustain high consumption with low investment growth. Indeed, Pakistan's economic growth has been slowing down relative to that of its neighbors and the average for developing countries (Figure 4).

Figure 2: Trade openness (exports and imports as % of GDP)



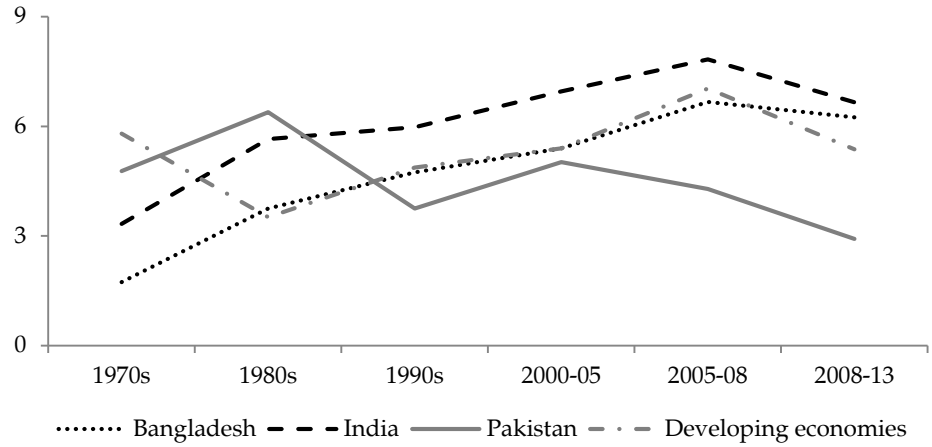
Source: UNCTAD (http://unctadstat.unctad.org).

Figure 3: Investment openness (FDI inward stock as % of GDP)



Source: UNCTAD (http://unctadstat.unctad.org).

Figure 4: Economic growth (average annual rates in real GDP, %)



Source: UNCTAD (http://unctadstat.unctad.org).

The Pakistan experience illustrates three half-truths about globalization. One is the notion that large economies do not need to globalize. The view – long popular in South Asia – that small economies need an external engine of growth, but that large economies can develop on the strength of domestic demand is a half-truth. China, as previously noted, is the counterfactual: a large economy achieving double-digit growth in manufacturing through exports.

A second half-truth is that openness defines success – this is necessary but not sufficient. Pakistan was more open than its neighbors, but was unable to translate its lead into successful integration. A third half-truth is that technology is a quick fix. Technology transfer and acquisition expedite catch-up, but keeping up requires learning and mastery. Like East Asia, Pakistan acquired technology from abroad, but the emphasis here was on importing capital goods, even entire turnkey plants and factory complexes. Unlike East Asia, little attention was paid to technological learning (Weiss & Lall, 2004). Thus, Pakistan's industry today depends on continuous technology transfer; its technological capabilities have not emerged as a driver of industrialization as in East Asia.

Putting all three half-truths together yields an intractable predicament for Pakistan: industry constrained by imports is unable to keep up with the booming domestic demand of a large economy.

Manufacturing is stagnant but, luckily, services are flourishing and creating jobs, although rising incomes are further fuelling the consumption of goods that domestic enterprises are unable to supply.

4. Toward Active Engagement

Pakistan is better placed than most developing countries to participate in and benefit from globalization. In spite of everyday difficulties – security, energy – multinationals rank Pakistan among the next emerging economies. However, foreign investors should see Pakistan not only as a market for selling, but also as a location for international production.

Pakistan attracts extractive and market-seeking FDI, and not exported-oriented FDI. This is understandable. The economy has natural resources and a large internal market of 180 million persons. These inherent advantages are attractive to foreign investors. FDI in the extractive industries has been resilient in spite of the uncertain investment environment. Market-seeking FDI has also been forthcoming over the years in consumer industries (food and beverages, household appliances, pharmaceuticals, vehicles) and, more recently, in services (banking, telecommunications, retail). Pakistan can certainly receive more such FDI and derive greater benefits from it, but it can also attract efficiency-seeking FDI.

Typically, developing countries with small markets and few natural resources have little to offer foreign investors other than abundant supplies of low-wage labor. The stereotype is the fly-by-night investor that sets up a sweatshop to stitch cheap T-shirts for export and then moves on to cheaper – more "efficient" – locations. Clearly, we do not need such foreign investment; we already have our share of domestic sweatshops. However, a notable feature of efficiency-seeking FDI is that it connects the local economy with the world economy, providing a point of entry toward upgrading into higher-value activities and for tapping into the global supply chains of TNCs. With the right kind of efficiency-seeking FDI, Pakistan's manufacturing could jumpstart a return to the world industrial frontier.

Particular effort is needed to encourage foreign companies already present in Pakistan to integrate these activities with their global operations. Japanese automobile companies, for example, invest differently in Pakistan and in East Asia. Their activities here involve the

assembly of imported components for local sale. Their investments in East Asia are integrated with complex regional production systems involving assembly for local sale as well as the local manufacture of selected parts for export within the corporate network. Thus, the policy objective of global integration is broader than increasing local content in standalone operations; it aims to encourage production processes that are linked to, and upgradable with, the company's worldwide technological advancement.

Traditionally, investors submit and the government approves standalone investment proposals that focus on the more lucrative extractive and market-seeking opportunities. A broader approach is desirable. Ideally, both parties should jointly develop investment plans that leverage Pakistan's resources and market advantages in support also of export-oriented operations. This calls for a more proactive role for the government, going beyond project approvals and working with industry to create an enabling environment for investment in export production.

Export-oriented investment requires a favorable trade regime. Although the Pakistan economy is relatively open, its trade policy reflects an anti-export bias. A large number of statutory regulatory orders (SROs) complicate the incentive regime and orient it toward licensing imports rather than promoting exports (Pursell, Khan, & Gulzar, 2011). In the case of the country's major export, import controls on technical inputs discourage textile exporters from moving up the garment value chain (Hamid, Nabi, & Zafar, 2014). In other areas, Pakistan has not taken advantage of regional agreements, competing more with low-income countries for preferences in traditional markets rather than negotiating trade agreements with dynamic economies (Kaukab, 2014). Nor has it fully implemented its regional trade and transit agreements in South Asia, West Asia, and Central Asia (Ahmad, 2014). The country's rankings on trade facilitation and the cost of doing business have also slipped in recent years (Saeed, 2014). These weaknesses need to be corrected and the institutions dealing with trade policy need a clear export mandate.

Global engagement requires technological capabilities. It bears repeating that policy liberalization permits global engagement, but does not guarantee success. FDI brings with it technology, but does not guarantee technological learning. Participation in global supply chains provides access to world markets, but does not assure advancement up the value chain. Successful globalization requires building capabilities at the enterprise and economy levels. There is clearly a role for industrial

policy, but the experience is varied and there is a pertinent lesson to draw from the Indian Planning Commission's (2011, p. 50) years of experience:

> Support to the enterprises should be in such a way that it motivates and enables enterprises to learn and develop complex capabilities and not become complacent and inefficient, which was the outcome of the industrial policy adopted by India until the 1980s.

In East Asia, industrial policy is a joint undertaking of the government and industry, where the role of the public sector is to support and not "crowd out" the private sector, and where such support is linked to enterprise performance. On their part, governments have promoted investment in industries with potential for learning, scale economies, and productivity growth; encouraged forward and backward linkages that stimulated investment in the wider economy; and eased constraints to capital accumulation, particularly on capital good imports. On its part, industry has earned high rents, but also reinvested profits to increase productivity and output growth. There were also large public expenditures in education (particularly in science and engineering) and technology diffusion (involving research centers and support services for SMEs).

This experience has relevance for Pakistan. In particular, there is need for a stronger relationship between government and industry, and shared views on: (i) tackling the urgent problems of energy, security, and investor confidence; (ii) practical matters of regulatory barriers that impede entrepreneurship and business; and (iii) strategic plans for industrial upgrading. While the latter plans may focus vertically on specific industries, much industrial policy is implemented horizontally through instruments such as competition policy, export policy, regulatory frameworks, and health and environmental standards, which apply to all industries and all enterprises, foreign and domestic, large and small.

Finally, Pakistan has a number of scientific organizations that should be deployed in support of the enterprise sector through research programs, industrial clusters, and technical advisory services for SMEs. There is a continuing long-term need for greater public expenditure on education and physical infrastructure. The large annual expenditures to maintain state-owned enterprises could be better allocated to the development budget. Inefficient state enterprises are not only a drain on public resources, but are also a burden on downstream industries. The inefficiencies of Pakistan Steel, for instance, have impeded the engineering

sector (see Kemal, 2005, p. 51). The benefits of divestiture are apparent in the total productivity gains for the overall economy that flowed from privatizations in the banking and telecommunications sectors.

5. Conclusion

Pakistan is strategically located to be a regional manufacturing hub. Although an ambitious goal for a latecomer, it illustrates the grand visionary design expected of a development state. Moreover, China's recent announcement to make a five-year investment in the US$ 46 billion Pakistan–China Economic Corridor suddenly makes that goal less audacious.

The government must sustain the momentum with a vigorous policy thrust to support investment-led growth. A high GDP growth target is meaningless unless driven mainly by investment (and not consumption). This requires a revitalized industrial policy endorsed by industry. The policy should address the technological weaknesses of the manufacturing sector. Complementing the focus on domestic industry are dual needs: (i) to incentivize trade, particularly exports; and (ii) to attract FDI for exports, working with foreign companies already present in Pakistan to integrate those activities into their global operations.

Pakistan is a latecomer to globalization, but the nature of the process is such that rapid advance is possible with smart policymaking and determined collective effort. The challenge is not beyond reach.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 241–260

The Impact of the Macroeconomic Environment on Pakistan's Manufacturing Sector

Inayat U. Mangla* **and Muslehud Din****

Abstract

This paper analyzes the impact of the macroeconomic environment on Pakistan's manufacturing sector, emphasizing in particular the role of fiscal and monetary policies in shaping incentives for industrial investment. Arguably, Pakistan's macroeconomic fundamentals in the last two decades have remained fragile, resulting in severe macroeconomic imbalances that have contributed to macroeconomic instability and hampered private investment in aggregate as well as in the manufacturing sector. Furthermore, macroeconomic stabilization policies have often failed to produce the desired results owing to the lack of coordination between monetary and fiscal policies. Pakistan's economy has thus lived on borrowed money and time and on rent-seeking behavior. Although some recent macroeconomic indicators have improved slightly, fundamental weaknesses remain. In particular, the recent improvement in the current account deficit was driven largely by the high inflow of remittances, coupled with financial engineering such as loan payments from the International Monetary Fund, "friendly" money, European Union bonds, and Islamic sukuk. It is imperative to think about the consequences of a leveraged reliance on remittances in the aftermath of falling oil prices and global deflation. Prudent macroeconomic management aimed at consolidating public finances and controlling inflationary pressures is essential to boost industrial investment and yield sustainable growth.

Keywords: Pakistan, economic activity, fiscal and monetary policies, manufacturing activity.

JEL classification: L69, O23.

1. Introduction

The share of the manufacturing sector in Pakistan's overall GDP in recent years has ranged from 14 to 16 percent, ranking third after

* Professor of Finance and Commercial Law, Haworth College of Business, Western Michigan University, Kalamazoo, MI.
** Consultant, Pakistan Institute of Development Economics, Islamabad.
We are grateful to the Haworth College of Business for partial financial support for travel purposes and to Dr Nasir Iqbal for helping us collect the data used in this study.

services (51 percent) and agriculture (21–22 percent). Although the macroeconomic environment appears to have had little impact on the performance of the manufacturing sector, this would be an incomplete observation. Our basic premise in this paper is that macroeconomic policies and industrial policy in Pakistan have seriously affected the performance of its components, including the manufacturing sector, and vice versa. Testing this hypothesis requires using Granger causality: to put it simply, does the aggregate economy's performance influence its components or do its components affect the macro-aggregate?

The performance of Pakistan's manufacturing sector has followed a boom–bust growth cycle. At a time when the BRICS emerging economies have succeeded in establishing well diversified and internationally competitive manufacturing sectors, Pakistan's manufacturing sector has struggled to grow in a sustained manner and is still plagued by a host of structural problems, including low productivity and lack of innovation in product and process technologies.

The irony is that, despite the last seven years of democratic rule in Pakistan and the so-called pro-business regime in recent years, most economic indicators still reflect "below-par performance" (see Institute for Policy Reforms, 2015). In FY2015, the economy did not meet any targeted macro-indicators such as GDP growth, electricity production, federal revenues, circular debt, or net investment inflows. Worse still, the manufacturing sector lacks diversification with textiles and food still accounting for the bulk of the sector's total value added.

It is worth mentioning that some earlier studies attribute the lackluster performance of the manufacturing sector to several problems, including too much concentration in industrial products, lack of quality products, inadequate exposure to foreign markets and thus to competition, slow human development growth, inadequate investment, and lack of research and development. While much has been written on the performance and problems afflicting the manufacturing sector,[1] little attention has been paid to the question of how the macroeconomic environment affects manufacturing sector performance.

This paper is a step in that direction. Specifically, it attempts to explore the role of the macroeconomic environment in driving private investment in the manufacturing sector. A stable and predictable

[1] See, for example, Ara (2004), Haque (2014), Kalim (2001), Kemal (1998), and Pasha, Pasha, and Hyder (2002).

macroeconomic environment is essential for the sector to grow and remain competitive. A stable macroeconomic environment facilitates private investment in manufacturing by ensuring a business climate characterized by access to affordable financing through well-developed financial markets, predictable tax and public expenditure policies, and smooth long-term regulatory business planning in a low-inflation environment. On the other hand, an unstable macroeconomic environment with high inflation and high levels of fiscal deficit retards private investment, thus depressing industrial growth.

Section 2 gives a historical perspective on Pakistan's manufacturing sector, focusing in particular on its growth performance. Section 3 provides an overview of the macroeconomic environment. Section 4 focuses on the role of monetary and fiscal policies in influencing the performance of the manufacturing sector. Section 5 concludes the study and provides some tentative suggestions.

A common thread running through studies such as Haque (2014) and Amjad and Burki (2013) is their emphasis on the micro rather than the macro-economy: "small" in economies under stress (which Pakistan is) needs more attention than the big picture. However, one cannot ignore the basic pillars of growth and development: macro-stability, structural reforms (changes), and well-functioning institutions are key to Pakistan's growth. Thus, our main focus in this paper is still "macro-stability."

While Amjad and Burki (2013) provide a ray of hope for moving Pakistan's economy forward, Haque's (2014) analysis, which is based on past performance, is more cautious and proposes a tall order for the major stakeholders of the economy. Pakistan's competitiveness disadvantage in the 21st century emanates largely from its low and slow-growing economy. Thus, the country must overcome its lack of technology-intensive industries – a factor that has also held back progress in sectors that contribute the most to the economy, such as agriculture and services.

Haque's (2014) prescription is that "Pakistan must, before else, agree on the general direction of its industrialization. This is as much a political as an economic exercise requiring consensus building among (several) stakeholders." His recommendation calls for a fundamental rethinking of industrial policy. If history is any guide to Pakistan's future, we concur largely with this view and without putting words in the author's mouth, argue that Pakistan needs to focus more on its agriculture sector and small-scale manufacturing related to agro-business. Our skepticism is based on the frequent policy changes that characterize

Pakistan's economy, lack of policy coherence, absence of any long-term commitment to particular policies or frameworks, incompetence, corruption, and a sector-specific expertise in the past.

The recent MOU signed with China, which has agreed to invest in an economic corridor, will bring some stable form of governance. However, this is a big "if." As the *Business Recorder* notes: "Our politicians lack willingness or vision to achieve a sensible balance between income, capital and consumption taxes. They serve bureaucrats who conventionally go for ill-designed social programs convincing politicians that these would attract more votes" (31 May 2015).

2. A Historical Perspective on Pakistan's Manufacturing Sector

Given that the sector started virtually from scratch at the time of independence, industrialization in Pakistan has made significant strides. The share of the manufacturing sector in GDP rose gradually from 10.37 percent in the 1950s (large scale, 5.04 percent; small scale, 5.34 percent) to 17.47 percent in the 2000s (large scale, 11.85 percent; small scale, 5.62 percent). Table 1 shows that there has been significant development in the manufacturing sector, especially in large-scale industry, whereas the share of small-scale industry has almost stagnated. This is attributable to industrial policies that have favored the establishment of large-scale industries while historically neglecting the small-scale sector. A clear policy debate in Pakistan is needed to foster small and medium enterprises, given the structure of Pakistan's economy (see Chaudhry & Andaman, 2014).

Table 1: Percentage share of manufacturing in GDP and growth rate

Period	Percentage share in GDP			Real growth rate		
	Total manuf.	Large scale	Small scale	Total manuf.	Large scale	Small scale
1950s	10.37	5.04	5.34	7.76	15.75	2.30
1960s	14.91	10.65	4.26	9.93	13.39	2.91
1970s	16.52	12.33	4.19	5.50	4.84	7.63
1980s	16.65	12.26	4.38	8.21	8.16	8.40
1990s	17.18	12.15	5.02	3.89	3.54	4.87
2000s	17.47	11.85	5.62	7.34	7.70	7.69
1950–2010	15.43	10.62	4.81	7.11	8.90	5.63

Source: State Bank of Pakistan, *Annual Report 2013–14*.

On average, the sector's growth performance appears to be quite impressive. The manufacturing sector grew at an average annual rate of

7.11 percent during 1950–2010, whereas the large-scale and small-scale sectors exhibited growth rates of 8.9 and 5.6 percent, respectively, during this period. Except for the 1970s and 1990s – dubbed the "lost decades" for manufacturing – the sector has grown at a healthy rate of 8 percent on average. Manufacturing industries grew at a rate of 7.7 percent during the 1950s while large-scale industry grew at a phenomenal rate of 15.8 percent. This acceleration in industrial growth is attributed to the industrial policy of the time, which aimed to establish consumer goods industries that relied heavily on domestic raw materials, including, for example, cotton, jute, and hides and skins. This policy was marked by direct controls on imports, private investment, and prices.

The growth of the manufacturing sector accelerated further to 9.9 percent during the 1960s. A number of initiatives helped realize this high growth rate, including a liberal import policy for raw materials and subsidies on exports through a number of schemes such as export bonus schemes, tax rebates, tax exemption, and export performance licensing. Protection rates during this period were fairly high, resulting in excessive business profits. Tax holidays and accelerated depreciation allowances to increase post-tax profits were also granted. Such policies were geared to attract private investment in the manufacturing sector at a time when the private sector was reluctant to undertake investment on a large scale.

Following this promising start, manufacturing growth fell sharply during the 1970s, with growth rates receding to 5.5 percent. This deceleration in industrial activity came on the back of the nationalization policies pursued at the time, which had a long-run impact on industrialization in Pakistan. With the nationalization of heavy industry, a number of sectors (including cement, fertilizers, oil refining, engineering, and chemicals) were transferred to the public sector with adverse consequences for private entrepreneurship, growth, and productivity. Industrialists faced a number of restrictions, including government-fixed prices under the Profiteering and Hoarding Act 1977. These measures heightened the uncertainty of the business environment, resulting in a fall in private investment and in capital flight.

The 1980s witnessed a reversal of the control policies of the previous decade. A process of deregulation and denationalization was initiated and various measures were taken to restore investor confidence. Administrative controls gave way to market-oriented forces, import policies were liberalized, tariff structures were rationalized, the par value of the rupee was brought closer to its equilibrium value and made

convertible on the capital account. Simultaneously, investment licensing was no longer required and prices were de-controlled. Such market-friendly policies helped industrial growth accelerate to 8.21 percent during this period.

Although deregulation continued into the 1990s, industrial growth slowed down to 3.9 percent while growth in large-scale manufacturing plummeted to an annual average rate of 3.54 percent. A number of factors were responsible for this depressed growth rate in the industrial sector, including political instability, deteriorating law and order, reduced protection rates, the emergence of significant infrastructure bottlenecks, an inadequate power supply coupled with frequent power outages in the early 1990s, and a sharp increase in energy prices in later years.

The manufacturing sector regained momentum in the 2000s with an average annual growth rate of 7.3 percent, to which both large-scale and small-scale manufacturing contributed. However, in recent years, the performance of the manufacturing sector has been marred by the crippling energy crisis, which has inflicted heavy losses in terms of productivity and competitiveness. In addition, poor domestic security has depressed private investment, generally subduing the manufacturing sector's performance.

One should not forget the effect of globalization and worsening terms of trade for Pakistan. Moreover, in the last two years in particular, a major concern is the continued slow growth in large-scale manufacturing. The rate of industrial growth in FY2015 is even smaller than the dismal 4 percent growth rate of the previous year. Public and private investment remains weak, tax collection is expected to be below target, and exports have declined in the face of an overvalued exchange rate. To maintain foreign reserves, the government has taken on substantial high-cost debt, which will put pressure on the external account by 2018.

While the industrial sector has contributed to a respectable economic growth rate over the last several decades, it still lags significantly behind major competitors in Southeast Asia, let alone the BRICS group. Pakistan's manufacturing sector continues to face myriad constraints, including low levels of human capital, poor physical infrastructure, an uncertain policy environment, a prolonged power crisis, and poor security. Worse still, the industrial structure lacks diversification and is highly concentrated in a few industries: in 2000/01, more than 37.8 percent of the industrial value added was from food and

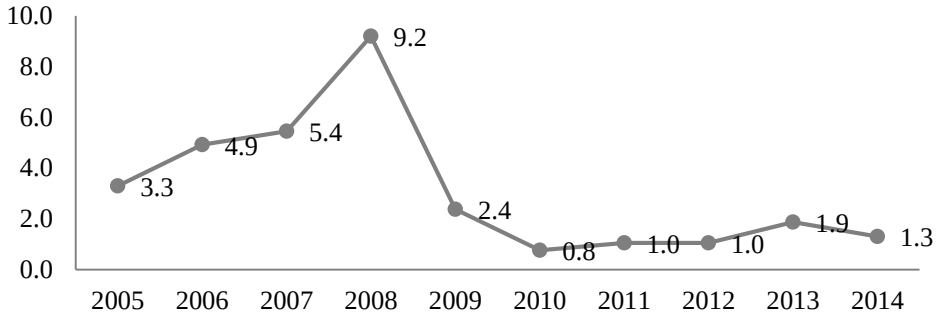
textiles alone. Similarly, industries that are based exclusively on indigenous raw materials accounted for almost 60 percent of the value added, although their share of output has fallen over time. On the other hand, the share of chemicals was around 15 percent and that of electrical and nonelectrical machinery and transport equipment was just 9 percent.

3. An Overview of the Macroeconomic Environment

Macroeconomic stability is key to achieving robust economic growth on a sustained basis. Unfortunately, Pakistan's macroeconomic fundamentals have generally remained weak, making it difficult to maintain macroeconomic stability. Historically, the main source of the problem can be traced to persistent twin deficits in public finance and the external account, which leaves little flexibility for prudent macroeconomic management to support the growth momentum.

A look at the evolution of the external account is revealing. During 2005–09, Pakistan faced a burgeoning deficit in the current account, which jumped from 3.3 percent of GDP in 2005 to 9.2 percent in 2008 (Figure 1). The mounting current account deficit led to persistent pressure on the exchange rate, necessitating a tight monetary policy stance by the State Bank of Pakistan. In recent years, however, the current account deficit has contracted sharply and stood at 1.3 percent of GDP in 2014.

Figure 1: Current account deficit (percent of GDP)



Source: State Bank of Pakistan, *Annual Report 2013–14*.

It is worth emphasizing here that the recent improvement in the current account deficit was driven largely by the high inflow of remittances coupled with political and financial engineering, such as payments from the International Monetary Fund (IMF), "friendly" money (what classical economists call Patinkin money), and bonds issued by the

European Union and through Islamic *sukuk*. However, it is imperative to think of the possible consequences of a leveraged reliance on remittances in the aftermath of falling oil prices and global deflation. While remittances and global deflation in commodity prices have eased the pressure on Pakistan's twin deficits, one should not ignore the possible impact of a reversal of these trends on the capital account. The main implication of our analysis is that there will be continuing pressure on the country's foreign exchange resources.

Apart from the fragility of the external account, Pakistan also faces a high fiscal deficit and concomitant high inflation. During the 1980s, the fiscal deficit averaged 7.1 percent of GDP, falling only slightly to 6.9 percent during the 1990s (see Table 2). After showing some improvement in the mid-2000s, the fiscal deficit surged again, peaking at 8.2 percent of GDP. Invariably, high fiscal deficits have been accompanied by high rates of inflation. The rate of inflation averaged 7.2 percent in the 1980s, rising on average to 9.7 percent during the 1990s. After remaining subdued during the early 2000s, inflation climbed to 7.4 percent in 2003/04. Since then, Pakistan has faced persistent inflationary pressure with inflation remaining in double digits until 2010/11. In recent years, however, the inflationary pressure has eased mainly due to the fall in oil prices.

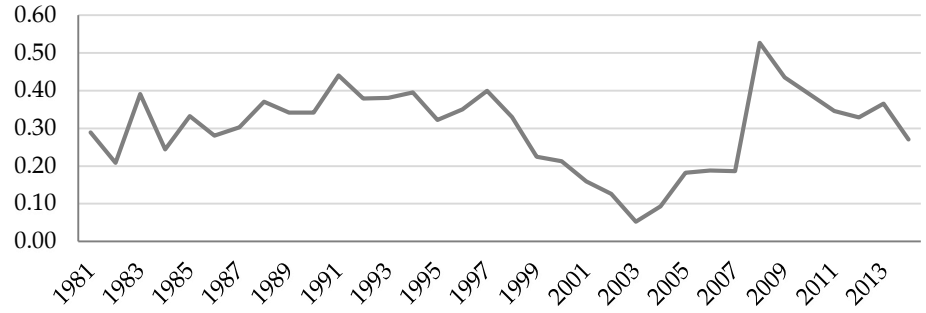
Table 2: Key macroeconomic indicators

Period	GDP growth rate	Inflation rate	Unemployment rate	As % of GDP			
				Investment	Fiscal deficit	Trade deficit	M2
1980s	6.5	7.2	1.4	18.7	7.1	8.9	39.2
1990s	4.6	9.7	5.7	18.3	6.9	4.4	43.0
2000/01	2.0	3.1	6.1	17.2	4.3	1.8	36.2
2001/02	3.2	3.3	7.8	16.8	4.3	0.4	39.6
2002/03	4.8	2.9	7.8	16.9	3.7	0.5	42.6
2003/04	7.4	7.4	8.3	16.6	2.3	1.2	44.1
2004/05	7.7	9.1	7.7	19.1	3.3	4.0	45.5
2005/06	6.2	7.9	7.6	22.1	4.3	6.5	44.7
2006/07	4.8	7.6	6.2	22.5	4.4	6.6	46.9
2007/08	1.7	20.3	5.2	22.1	7.6	9.0	45.8
2008/09	2.8	13.6	5.2	19.0	5.2	7.8	40.3
2009/10	1.6	13.9	5.5	15.8	6.2	6.5	39.4
2010/11	2.7	11.9	6.0	14.1	6.5	4.9	37.0
2011/12	3.5	9.7	6.0	15.1	6.8	7.0	38.0
2012/13	4.4	7.7	6.2	14.6	8.2	6.6	39.0
2013/14	5.4	8.6	6.2	14.0	5.5	5.0	39.0

Source: Pakistan Economic Survey 2013–14.

To capture the overall macroeconomic situation of the country, we construct a macro-instability index comprising three core stability indictors: inflation, the fiscal deficit, and exchange rate variability (Figure 2). The index shows that, except for a brief period during the mid-2000s, the macroeconomic environment has remained largely unstable on the back of high current account and fiscal deficits and a high rate of inflation.

Figure 2: Macroeconomic instability index for Pakistan



Source: Authors' calculations.

The 1980s were marked by major shifts in economic policy toward privatization, deregulation, and liberalization. Pakistan's transition to the managed float system of exchange rate management led to a 20 percent depreciation in the rupee. During this decade, the fiscal deficit remained about 6.8 percent of GDP on average, whereas the primary deficit[2] on average was recorded at 3.5 percent of GDP. The current account deficit on average remained 2.8 percent of GDP – lower than during the 1970s, mainly due to high inflows of remittances and low import demand.

The macroeconomic environment worsened during the 1990s. Various policy measures, including trade liberalization, financial reforms, and tariff reforms, were implemented in the first half of the decade, but the economy failed to achieve macroeconomic stability due to the country's own political instability, the deteriorating law and order situation, and inconsistent macroeconomic policies. This instability was accentuated when Pakistan's foreign currency accounts were frozen, followed by the military takeover in 1999, which created uncertainty in the macroeconomic environment. The failure of the government to manage the fiscal as well as current account deficit led to unsustainable

[2] The primary deficit excludes interest payments on debt. This is misleading ("cooking the books") because it implies one need not worry about debt and interest payments.

and unprecedented levels of public debt during this period. Exchange rate variability and the vulnerability of foreign reserves increased significantly while high inflation and the high budget deficit persisted, with an adverse impact on macroeconomic stability.

In the early 2000s, the economy witnessed a turnaround: both inflation and the budget deficit fell, following significant foreign capital inflows, including remittances and foreign assistance. This macroeconomic stability was, however, short-lived as the economy began to experience fiscal and external sector imbalances amid an adverse security situation owing to the war on terrorism.

The relatively better performance of the Musharraf regime was not accompanied by any significant direct or foreign investment in the manufacturing sector; the focus of investment remained on real estate. The situation was made worse by the global financial crisis and by high food and oil prices, which contributed to inflationary pressures in the economy. The period also witnessed an expansionary fiscal policy on the back of increased spending on the Public Sector Development Program (PSDP). The rate of inflation spiraled from 7.8 percent in 2006/07 to 20.8 percent in 2008/09; the budget deficit increased from 4.3 percent of GDP in 2006/07 to 7.6 percent of GDP in 2007/08.

More recently, Pakistan's macroeconomic indicators have begun to show some improvement: the inflation rate has stabilized due mainly to the fall in oil prices, while the fiscal deficit has come down to 5.5 percent of GDP in 2014 from 8.2 percent in 2013. The exchange rate has also stabilized, financial engineering having eased the pressure on the external account. While it may be tempting to see the stability of the rupee as a sign of economic strength, it is worth noting that the State Bank of Pakistan is using precious foreign exchange reserves – mostly borrowed money – to shore up the value of the rupee.

4. Macroeconomic Policies: Implications for the Manufacturing Sector

This section analyzes the implications of macroeconomic policy, in particular monetary and fiscal policies, for the performance of the manufacturing sector. It is imperative to prevent a decline in manufacturing output not only to sustain growth, but also to increase the share of exports to maintain the sector's external competitiveness. For 1976–2003, the data show that real growth in manufactured exports followed a declining trend and remained highly volatile. Here, we restrict

our attention to the period after the 1990s to highlight the most recent and current issues in macroeconomic management with reference to its implications for the performance of the manufacturing sector.

In the early 2000s, the manufacturing sector exhibited robust growth on the back of strong domestic demand amid relative macroeconomic stability and low inflation (Amjad, Din, & Qayyum, 2011). As discussed in Section 3, this period was characterized by stable macroeconomic fundamentals, which contributed to the strong growth momentum in the manufacturing sector. In particular, a relatively easy monetary policy stance enabled buoyant consumption while, at the same time, lowering the cost of capital and boosting private investment in the manufacturing sector. Private investment increased from 16.8 percent of GDP in 2001/02 to a peak of 22.5 percent in 2006/07. However, this period of high growth and low inflation was disrupted by the global hike in food and oil prices, which added quickly to inflationary pressures in the economy. As macroeconomic imbalances began to emerge, the government adopted a tighter monetary policy to curb inflationary pressure and help stabilize the economy.

Macroeconomic stability proved elusive: a confluence of factors, including food and commodity price shocks, an unprecedented energy crisis, and poor law and order contributed to a sharp slowdown in economic growth (Mangla & Uppal, 2014). The situation was worsened by the global financial crisis, which led to a sharp fall in foreign exchange earnings and the consequent drawdown of foreign exchange reserves.

On the domestic front, low economic growth contributed to fiscal pressures on the back of falling revenues. Consequently, the fiscal deficit climbed from 4.3 percent of GDP in 2001/02 to a peak of 7.6 percent in 2007/08. As the twin deficits mounted, Pakistan was compelled to resort to IMF support for its balance of payments, which entailed conditionalities such as a tighter monetary policy and contractions in the fiscal deficit. The government slashed the PSDP by PRs 150 billion, while the monetary policy discount rate was raised to 15 percent. These contractionary policies depressed private investment and economic growth plummeted to 1.7 percent in 2007/08.

These macroeconomic developments had an adverse impact on the manufacturing sector. To begin with, the tight monetary policy raised the cost of capital, thus severely constraining private investment. At the same time, domestic demand began to subside while exports plunged as

a result of the global financial meltdown. Consequently, growth in manufacturing fell sharply. The rising fiscal deficit also crowded out private investment in a high-interest rate environment. Worse still, in an effort to reign in the fiscal deficit, the government cut public spending on critical development needs, including physical infrastructure, which compounded the constraints to the manufacturing sector.

A key area of concern in macroeconomic management is the lack of coordination between monetary and fiscal policies. This allowed inflation to persist, despite contractionary demand management policies. Specifically, despite the fact that a tight monetary policy stance kept the policy discount rate high, the failure to contain nonproductive public spending ignited inflationary pressures, thus nullifying the policy's impact on the rate of inflation. The continuing high rate of inflation raised the cost of inputs and eroded private profit margins, thereby impeding growth in the manufacturing sector.

After remaining in double digits for a consecutive 21 months, inflationary pressures eased somewhat and the rate of inflation came down to single digits in 2009. This prompted the monetary authorities to ease the monetary policy, which had been blamed for stifling the growth momentum in the manufacturing sector. Further impetus for loosening the monetary policy stance came from some improvement in macroeconomic fundamentals as the pressure on the current account eased owing to strong remittances and a slight uptick in the growth of manufacturing output.

Although the State Bank lowered the discount rate to 12.5 percent in November 2009, industrial output failed to pick up substantially due to a combination of factors, including the hike in domestic power and gas tariffs, the fragile domestic security situation, and crippling energy shortages. In its efforts to revive economic growth, the government resorted to fiscal expansion, almost doubling the PSDP from PRs 219 billion in 2008/09 to PRs 421 billion in 2009/10 in budgetary terms. This fiscal expansion, at a time of weak economic fundamentals, proved detrimental to macroeconomic stability with adverse consequences for manufacturing output.

The rising fiscal deficit stoked inflationary pressures in the economy, with inflation reaching double digits once again in 2010. This persistence of inflation, despite a prolonged tight monetary policy, was due mainly to the monetization of the fiscal deficit, which contributed to

higher-than-targeted growth in the money supply, in turn dampening the impact of higher interest rates on the rate of inflation. Inflationary expectations also remained stubborn, which eroded the effectiveness of monetary policy in curbing the rate of inflation. Other factors that contributed to the persistence of inflation included supply disruptions in the wake of widespread floods and spiraling energy prices. Not coincidentally, industrial production, after a slight improvement in 2009, fell by 2.3 percent in 2010.

In this high-interest rate environment, the demand for credit to the private sector remained sluggish and was also constrained by banks' increasing appetite for risk-free government securities (Pakistan Investment Bonds). The latter carried a high rate of interest, making lending to the private sector an unattractive option. The increase in demand for government securities also reflected banks' increasing risk aversion in the face of mounting nonperforming loans in their portfolios.

In essence, the combination of a tight monetary policy and higher fiscal deficits financed through central bank borrowing crowded out private investment, thus hampering industrial expansion. These policy developments up to 2012 led Pakistan to another round of external imbalances and depletion of foreign reserves, culminating in a foreign reserves shock in 2013. The country's vulnerability to default led to a fifth IMF bailout, in this case, a longer-term loan facility of US$ 7.5 billion.

Pakistan's macroeconomic imbalances are driven by deep-seated structural problems, including a narrow tax base, cash-bleeding state-owned enterprises, and low rates of saving and investment, all of which contribute to a persistent domestic resources gap. On the external front, the balance-of-payments position remains precarious, due mainly to the lack of export competitiveness, which forces the country to rely on external financing.

Addressing these structural issues is critical if Pakistan is to achieve macroeconomic stability, which is a prerequisite for attracting domestic and foreign investment in the manufacturing sector. In particular, there is a need to strengthen public finances by widening the tax base, improving tax collection through administrative reforms in the tax collection machinery, and prudent public expenditure management. Moreover, it is essential to restructure or privatize state-owned enterprises to plug the massive leaks of public funds.

The main implication of our analysis is that there will be continuing pressure on the country's foreign exchange resources. Given this, there has to be a debt reduction strategy in place and the national budget should not be used only to feed current expenditures. Pakistan's exports are highly concentrated in a few products, making its exports very vulnerable to external demand shocks with adverse consequences for the balance of payments. A comprehensive strategy designed to improve the country's export competitiveness and product diversification would go a long way toward strengthening the balance of payments position, which is essential to maintain macroeconomic stability.

A sustained improvement in macroeconomic fundamentals would be instrumental in boosting economic activity in the manufacturing sector, which is essential for job creation and poverty reduction. In particular, better fiscal management through the rationalization of current expenditures and diversion of public resources to development spending (including on physical infrastructure) would attract industrial investment. Similarly, better fiscal discipline would allow the State Bank of Pakistan to achieve its monetary targets and contain inflationary pressures in the economy. These measures would create a stable and predictable macroeconomic environment, which the manufacturing sector needs if it is to shift onto a robust growth trajectory.

The country's deteriorating security situation has also led to a significant decline in foreign investment in the energy sector as well as in the overall economy. It is appalling to note that, in a globally integrated economy and global liquidity environment, net foreign direct investment (FDI) in Pakistan for 2008–14 ranged from US$ 5.4 billion to a low of US$ 0.8 billion. The oil and gas sector contributed 39 percent to FDI in FY2013 as compared to 77 percent in 2012, mainly due to worsening law and order in Balochistan and Khyber Pakhtunkhwa where exploration activities have contracted. However, it is encouraging to see a fresh inflow of FDI in the energy sector in 2014 of US$ 1.2 billion (*Business Recorder*, 2 February 2014).

Where does Pakistan stand today, in terms of FDI inflows? The *Business Recorder* newsletter has this to offer (18 March 2015):

> According to latest FDI numbers released by the State Bank of Pakistan, net FDI inflow stood at about $75 million in February – a manifold growth over the inflow of $16 million in the month before. However, on year-on-year

> basis, net FDI inflows dropped by 14 percent in February 2015. Total FDI inflows for the first eight months of current fiscal year now stands at $620 million about 3 percent lower than the comparable period last year. Interestingly a bulk of FDI inflows have come from China and UAE – a little more than half actually – whereas that from other countries such as United States, the UK, Switzerland and Hong Kong have dropped substantially. Net FDI outflows from Saudi Arabia have worsened over last year, whereas all that Pak-Turkey investment brotherliness also hasn't bore any fruits as yet [*sic*].[3]

It is also worth mentioning that FDI outflows have grown more than FDI inflows. The data released by the State Bank show that, so far, inflows have risen by 26 percent whereas gross outflows increased by 52 percent. If we exclude an estimated profit repatriation amount of US$ 550 million, net capital account inflows amount to little more than chip change. Unsurprisingly, the KSE index recently displayed its worst performance in Pakistan's history.

5. Conclusion and Some Suggestions

Pakistan's manufacturing sector has followed boom–bust cycles of growth, primarily as a result of persistent twin deficits in public finance and the external account. This has left little room for prudent macroeconomic management to support the growth momentum. Pakistan also faces a high fiscal deficit and concomitant high inflation. The macro-instability index we have constructed (comprising inflation, the fiscal deficit, and exchange rate variability) shows that, except for a brief period during the mid-2000s, the macroeconomic environment has remained largely unstable on the back of high current account and fiscal deficits and a high rate of inflation.

Pakistan's competitiveness disadvantage emanates largely from its slow growing economy. Over the past 20 years, its generally fragile macroeconomic fundamentals have resulted in severe macroeconomic imbalances; these, in turn, have contributed to macroeconomic instability and hampered private investment in aggregate as well as in manufacturing. Macroeconomic stabilization policies have often failed to produce the desired results owing to the lack of coordination between

[3] http://www.brecorder.com/br-research/44:miscellaneous/5274:fdi-inflows-or-chip-change/

monetary and fiscal policies. Prudent macroeconomic management aimed at consolidating public finances and controlling inflationary pressures is essential to boost industrial investment and economic growth.

The country must reassess its macroeconomic priorities within the framework of conventional wisdom concerning fiscal and monetary policies. Despite its persistent failure in what we call "4 + 4 + 3" regimes since 1970, Pakistan's poor performance stems from its inability to integrate with (and take advantage of) the fast pace of globalization. In a globally competitive world, Pakistan has to find a niche sector – perhaps the SME sector, which is the mainstay of the economy in terms of value addition, employment, living standards, and exports. Realistically, any worthy economist of our generation would be hard pressed to declare the country's macroeconomic situation in general and industrial policy in particular as being "satisfactory and sustainable." We have argued that Pakistan's macroeconomic policies are inherently inconsistent and ad hoc, and this has contributed significantly to the current crisis in manufacturing and in other sectors of the economy.

While Pakistan's exports have been dominated by the textiles and garments sector, their combined share has fallen from about 75 percent of total exports in 2001 to 55 percent in 2010. On the other hand, the SME sector's exports have increased steadily, with the bulk of SME units operating in industrial clusters around Karachi, Lahore, and the Sialkot–Gujrat–Gujranwala triangle in central Punjab. In the agriculture sector, Rashid and Burki (2013) identify cotton as a potential driver along with high-valued nontraditional agriculture exports.

The conclusions presented above are "sufficient conditions." Equally important are the "necessary conditions" outlined below:

- Pakistan's macro and manufacturing problems are perhaps equally noneconomic, and then structural and/or cyclical.
- To borrow a famous political phrase from the US Clinton campaign in 1991, "it's the economy, stupid." It is the political economy and not the economy of Pakistan that is "stupid." Pakistan's macro-economy has lived on borrowed money and time, and rent-seeking behavior.
- Most policies work ad hoc. There are not enough political and economic think-tanks where policy formulation is discussed and debated before policies are finalized and implemented with firm commitment.

- We live in a global economy, one from which Pakistan has isolated itself in real terms (for well-known reasons) and failed to capitalize on the benefits of globalization in its macro-financing activities.
- Political and financial engineering strategies only make a marginal difference, but do not resolve the fundamental economic problems of poor governance and corruption.
- Pakistan has "ego" problems and often sets inappropriate benchmarks, e.g., the rupee exchange rate, trade with India, and the construction of dams. In mid-February 2015, for example, the country virtually shut down for a week for the sake of a cricket match with India (which the former lost). It would be more prudent for Pakistan to set benchmarks vis-à-vis India's ITT's and other corporate entities.
- Stability in law and order is fundamental for any macroeconomic improvement.
- Pakistan's institutions have weakened, rather than strengthened, over time. Notable among these are the financial sector, given issues of autonomy among the State Bank, commercial banks, and other financial institutions. In the education sector, an example worth noting is the Higher Education Commission, which dictates how many credit-hours and courses are to be taught per semester, even as Pakistan's public sector institutions continue to churn out graduates without providing them the technical skills needed in a 21st century competitive environment.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 261–270

Credit Flows to Pakistan's Manufacturing SME Sector

Imran Ahmad* **and Karim Alam****

Abstract

This paper profiles the flow of credit to manufacturing SMEs and their subsectors in Pakistan. We discuss the challenges confronting the SME sector as well as the role of the central bank in this context. Based on the literature and data available, we find that the flow of financing to the manufacturing sector witnessed a gradual and steady increase in absolute terms, although its share of total industry credit declined sharply over a nine-year period. Financing to manufacturing SMEs initially declined and then increased over a period of six years.

Keywords: Credit, manufacturing, small & medium enterprise (SME), Pakistan.

JEL classification: E51, L60.

1. Introduction

The manufacturing sector is a vital sector of the economy as well as a catalyst for growth. Countries such as China and Singapore have witnessed tremendous growth driven by the manufacturing sector (Anwar, 2008). The sector is not homogeneous; rather, it comprises a number of subsectors, each with diverse needs and characteristics. Nevertheless, access to finance remains a common constraint among enterprises.

In Pakistan, manufacturing is the economy's third largest sector, contributing 13.5 percent to GDP and 14.1 percent to total employment. Large-scale manufacturing contributes around 10.9 percent as against small-scale manufacturing at 1.7 percent of total GDP (Pakistan, Ministry of Finance, 2014). The average flow of outstanding credit from the banking industry was PRs 1,385.5 billion over a period of nine years (2006–14), with a standard deviation of PRs 229.5 billion. The share of financing available to the manufacturing sector was approximately 50

* Additional Director, Infrastructure, Housing and SME Finance Department, State Bank of Pakistan.
** Deputy Director, Infrastructure, Housing and SME Finance Department, State Bank of Pakistan.
The views expressed in this paper are those of the authors and do not reflect the views of the State Bank of Pakistan.

percent of total private sector credit[1] or 16 percent of the financial sector's total outstanding credit. However, financing is not well diversified and remains concentrated in specific subsectors (Table 1). Beck, Demirgüç-Kunt, and Pería (2011) find similar results.

Access to finance and an efficient financial system are key to economic growth and development (see Nasr, 2008). Limited access to finance is often a constraint to industrial growth, especially for the small and medium enterprise (SME) sector. Therefore, it is useful to identify its importance as well as to understand whether the formal sector is able to meet its financing needs.

Much of the literature, as discussed below, gives special importance to the role of financial organizations in economic growth, especially in the banking sector. However, there are conflicting theories with regard to its role in affecting the size and growth of industries. Based on panel data estimations, Hoxha (2013) finds that industries' performance depends on external finance and that competition within the banking sector can harm industries that need external financing. Anwar (2008) argues that factors such as foreign investment and human capital development are also key to manufacturing sector growth, while diversification, increased spending on research and development, and improved education are critical for sustainable future growth.

Finance also promotes capital accumulation and enables optimal allocation. The traditional literature ascribes two distinct roles to the finance–growth nexus: (i) promoting growth and development, and (ii) increasing the demand for financial services as a result of economic growth (see Stolbov, 2012).

2. Credit Flows to Pakistan's Manufacturing Sector

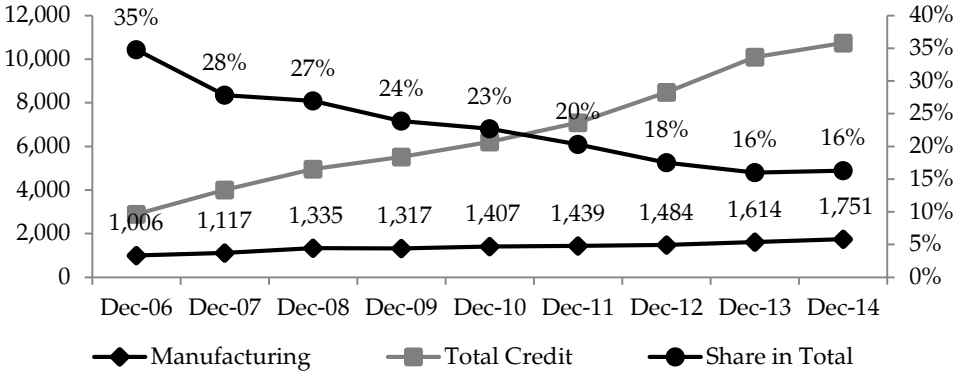
This section discusses financing trends in the sector based on the total flow of industry credit, the share of manufacturing in total credit, and credit flows to the manufacturing sector.

Figure 1 shows credit flows to the manufacturing sector vis-à-vis overall industry credit. The period 2006–14 registered a significant and steady growth rate of 75 percent in overall credit flows to private sector businesses. The manufacturing sector accounts equally impressively for a 74 percent growth rate in this period. Its average annual growth recorded

[1] Investment in private sector securities and shares, and loans to the private sector.

is 7 percent as opposed to 18 percent for total industry credit. The share of the manufacturing sector in total industry credit declined sharply from 35 percent in 2006 to 16 percent in 2014.

Figure 1: Flows to manufacturing sector and its share (PRs bn)



Source: State Bank of Pakistan.

Table 1 lists key subsectors that account for the highest flows of credit. The lion's share of 35 percent goes to textiles, followed by food products and beverages at 25 percent. Their respective average flows recorded over the period 2006 to 2014 are PRs 551.7 billion and PRs 253.7 billion, respectively. The table also shows that financing is concentrated in only a few manufacturing subsectors, thus resulting in less diversity as far as financing to these sectors is concerned. It is important to mention here that the textiles sector includes subsectors such as spinning, weaving, and finishing; made-up textile articles; knitwear; carpets and rugs; and other textiles not elsewhere classified. However, of the total financing to the textiles sector, the largest share of 79 percent is channeled into the spinning, weaving, and finishing subsector.

Table 1: Share of top ten manufacturing sectors vs. average financing

Subsector	% Share of total O/S to manufacturing sector	Average financing 2006–14 (PRs bn)
Textiles	35	551.7
Food products and beverages	25	253.7
Chemicals and chemical products	11	146.9
Basic metals	5	50.2
Other nonmetallic mineral products	3	86.8
Apparel, readymade garments	3	48.2
Coke, refined petroleum products	3	31.7
Electrical machinery and apparatus	3	43.0
Paper, paperboard and products	2	24.4
Machinery and equipment	2	20.6

Source: State Bank of Pakistan.

Similar trends are apparent in other emerging economies such as India and Singapore, where certain subsectors attract the largest volume of financing. A likely explanation for this is that industrial sectors tend not to be homogenous. Moreover, the enterprise-level reality may differ from its sectoral classification (Kirner, Kinkel, & Jaeger, 2009).

3. SME Financing in Pakistan

SMEs constitute over 93 percent of an estimated 3.2 million business enterprises in the country (Beck & Demirgüç-Kunt, 2006). In overall macroeconomic terms, SMEs (defined by the number of employees) contribute 30 percent to the national GDP and 25 percent to total export earnings, indicating why the sector is economically significant. SMEs can be categorized broadly as services, manufacturing, or trade, of which we look specifically at manufacturing units.

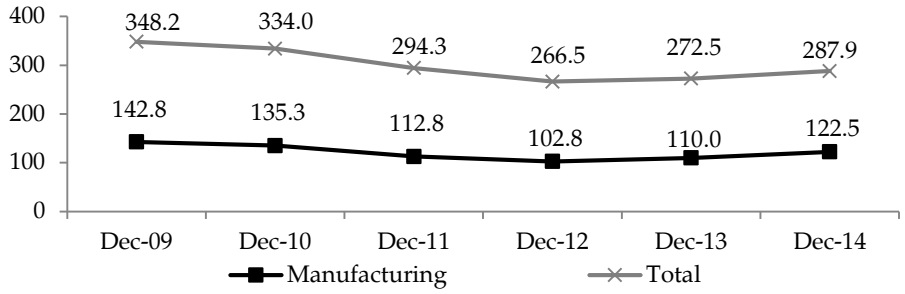
3.1. Credit Flows to Manufacturing SMEs

One of the key roles of the business finance market is to fund SMEs (see Makena, Kubaison, & Njati, 2014), given that the development of this sector is considered a core element of fostering economic growth and generating employment. Hallberg (2000) argues that governments should promote SMEs because they account for a large share of the total firms in an economy, can generate significant employment, and as "the emerging private sector in poor countries," they form a "base for private sector-led growth." Nonetheless, SMEs often find it difficult to access finance through the formal sector.

Manufacturing SMEs in particular contribute significantly to economic growth (see Terziovski, 2010). Beck, Demirgüç-Kunt, Laeven, and Levine (2008) use cross-country and cross-industry data to establish that financial development has a larger positive effect on the growth of industries that comprise small firms versus those that comprise large firms.

Figure 2 compares financing trends in the SME sector vis-à-vis manufacturing SMEs. Growth in credit flows to both manufacturing SMEs and the SME sector as a whole recorded a rising trend after December 2012. The corresponding amounts of average financing received are PRs 121 billion and PRs 301 billion during 2009–14, with standard deviations of 45 and 110, respectively.

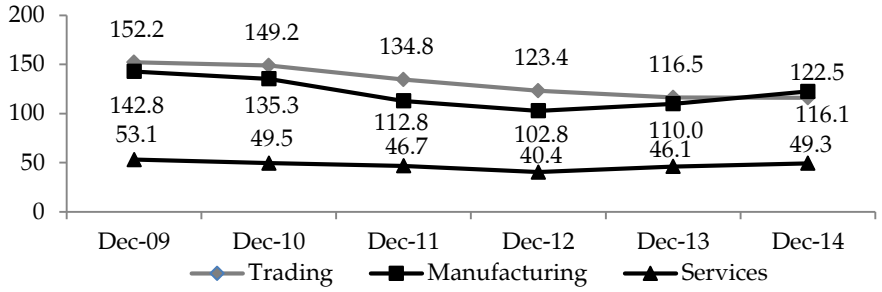
Figure 2: Credit flows to manufacturing SMEs vs. all SMEs (PRs bn)



Source: State Bank of Pakistan.

Figure 3 compares sectoral trends in financing at a macro-level among the three SME subsectors (trading, manufacturing, and services). Manufacturing SMEs initially show a declining trend up until December 2012, after which they indicate a positive growth trend. Financing to the services subsector follows a similar trajectory, but the growth is more prominent for manufacturing SMEs.

Figure 3: Financing to SMEs, by subsector (PRs bn)



Source: State Bank of Pakistan.

At the end of December 2014, trading, manufacturing, and services accounted for 40.3, 42.5, and 17.1 percent, respectively, of the total financing to the SME sector. The share of manufacturing SMEs rose more sharply than that of trading SMEs; the share of the services sector declined from 2009 onward.

3.2. Credit Flows to Manufacturing SME Subsectors

Table 2 shows that, like the overall manufacturing sector, financing to manufacturing SMEs is highly concentrated in a few subsectors, with textiles and food products and beverages accounting for 22 and 37 percent, respectively.

Table 2: Share of key SME manufacturing subsectors

	% Share of financing	
Sector	**To manuf. SMEs**	**To all SMEs**
Food products and beverages	37	17
Textiles	22	22
Chemicals and chemical products	6	6
Apparel, readymade garments	4	2
Basic metals	4	2
Tanning and dressing of leather; manufacture of luggage and footwear	2	1
Rubber and plastic products	2	1
Paper, paperboard and products	2	1
Fabricated metal products	2	1
Medical, precision and optical instruments; watches and clocks	2	1
Other nonmetallic mineral products	2	1
Sports goods	2	1

Source: State Bank of Pakistan.

3.3. Key Challenges in SME Financing

SMEs face a number of financial and institutional obstacles to procuring credit compared to larger enterprises. These constraints are all the more challenging in developing countries whose financial systems are more likely to be weak (Beck & Demirgüç-Kunt, 2006). Based on our interaction and discussions with various market actors, we have identified the following key challenges on the supply side:

- Lack of innovative financial products
- High investment in government securities
- High transactional cost of serving SMEs
- Banks' risk-averse approach

Demand-side challenges include the following:

- Lack of satisfactory business plans, accounting, and other information
- Insufficient assets for use as security
- Lack of financial awareness of different banking services
- Limited new or innovative approaches to addressing SME clients

In addition to these factors, business activity in Pakistan is constrained by energy shortages and by law and order or security issues (State Bank of Pakistan, 2014, 2015).

4. The Central Bank's Role in SME Financing

Central banks perform both conventional and nontraditional functions. In the context of promoting SME credit, Boldbaatar (2005) suggests three key areas for central bank intervention: (i) financial market infrastructure development, (ii) enhancing the availability of credit information, and (iii) swift and secure banking for small borrowers. Some of the measures taken by the State Bank of Pakistan (SBP) to improve the SME lending market are as follows (State Bank of Pakistan, 2013):

- A comprehensive regulatory framework to enable SME financing exists. In 2013, the regulations were revised, giving more focus to small enterprises as well as lending incentives for banks.
- The SBP has established a dedicated e-Credit Information Bureau.
- The SBP is facilitating the establishment of a secure transaction registry, which will be instrumental in lending to small borrowers.

As a regulator of the country's banking industry, the SBP should take the following measures to bring more SMEs into the credit lending market and improve their access to finance:

- Improve the regulatory environment based on market dynamics

- Design and implement capacity-building events, workshops, and seminars to improve SME clients' financial literacy
- Assign market-based indicative targets for SME financing to banks and development finance institutions
- Explore the role of nonbank financial companies as business facilitators
- Introduce venture capital for start-up businesses
- Strengthen and expand the scope and role of the e-Credit Information Bureau.

The SBP has also undertaken a number of market segmentation studies (which are available on its website); this exercise should be continued to cover more sectors.

5. Conclusion

We have examined the flow of credit to Pakistan's manufacturing sector, focusing particularly on manufacturing SMEs. The data suggest that, in absolute terms, credit flows to the manufacturing sector grew steadily between December 2006 and December 2014. However, its share of total industry credit[2] declined drastically from 35 to 16 percent during this period. Moreover, the flow of credit is concentrated in a few subsectors both in the manufacturing sector overall as well as among manufacturing SMEs. This reflects the low level of diversification where financing is concerned.

Having identified several reasons for this low level of financing, we examine the role of the central bank and suggest measures it could take to enhance the lending market for SMEs. This analysis, however, presents a macro-picture of the manufacturing sector and key subsectors, and does not consider regional or sectoral dynamics and corresponding credit needs. The natural progression of this work would be to identify the financing gap for the overall manufacturing sector as well as for manufacturing SMEs in particular. This would help assess the needs of both sectors and measures to ensure the appropriate supply of credit is made available.

[2] Total credit to the government and nongovernment sectors.

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The Lahore Journal of Economics
20 : SE (September 2015): pp. 271–282

In Quest of SME-Conducive Policy Formulation

H. C. J. Hanns Pichler*

Abstract

The very topic raises a challenging question: that is, of the role and significance, if not the "survival," of small and medium enterprises (SMEs) and related structures amid forces, which – particularly in the sphere of industry – tend to favor the "big" over the "small" at first sight. At the same time, this points to underlying aspects and challenges of broader socioeconomic and structural dimensions with a concomitant need to formulate appropriate, more differentiated, and specifically designed business policies. Today, such challenges and related problems are seen as intertwined and multipronged, given (i) the growing international (not least as a strategic ingredient of development) perception of the role and exposure of SMEs in terms of their sector-related structural significance nationally, regionally, and globally; (ii) a closer-to-the-skin view of developments related to ongoing restructuring in the European business environment, which, in the context of SMEs, is in many ways regionally unique; and (iii) the overriding socioeconomic and systems-related aspects of a more comprehensive SME-specific policy formulation.

Keywords: SMEs, business policies, growth.

JEL classification: L29.

1. Introduction

> *Why are SMEs so important? … Because high employment growth in SMEs in the last decade has prevented unemployment rising … in the European Economy Area.*
>
> *The European Observatory for SMEs*

Globally, there is evidence of a new and growing recognition of the role of small and medium enterprises (SMEs) and a corresponding reorientation of development policy over the last few decades. Generally, we have seen a distinct shift in strategies toward fostering sector-related diversification for more balanced long-term growth and economic welfare under sustainable conditions.

* President, Austrian Institute for SME Research; Professor Emeritus, Vienna University of Economics and Business.

In terms of strategies, there is now increasing awareness worldwide of the role that SMEs play both in sustaining economic stability and serving as an indispensable catalyst in fostering economic dynamics and welfare. This experience and recognition has triggered a broader change in outlook, quite in contrast to the postwar decades when sustained economic buoyancy, business dynamics, and growth in considerable measure tended to blur the need for any subtle structural considerations. Yet, underlying economic realities and the characteristics of any SME structured business environment were, in the end, not to be neglected indefinitely.

Altogether – and not least from a European angle – this has largely disproved more orthodox and seemingly ill-conceived notions of the inherent superiority of "big" vis-à-vis "small." This recognizes the specific role of SMEs in the context of a more subtle and diversified approach toward "structural development."

2. The SME Landscape in Europe

In narrowing our geographical focus and looking more closely at the specificity of the European business environment, a unique, richly structured, and highly diversified SME "landscape" emerges. The European Observatory for SMEs illustrates this in its sixth report: SMEs (defined as firms with up to 250 employees) within the "European space" number close to 20 million units, as against only about 40,000 (or just 0.2 percent) larger firms (those with more than 250 employees) (see European Commission, 2000). This yields an average of about 50 nonprimary business establishments per 1,000 inhabitants. Furthermore, these millions of smaller, largely craft-dominated microenterprises have continuously tended to outperform larger enterprises in terms of job creation. This demonstrates that, without such relatively high employment growth and intensity on the part of SMEs, European unemployment would have been even more pronounced.

The Observatory estimates that, over the years, about 1.5 million Europeans decide annually to start a business of their own. Over the last half-decade or so, the number of (mostly small to very small) enterprises has increased by about 9 percent, while the European Union population has grown by only 2 percent. This clearly illustrates the economic and social importance of SMEs in a European context.

In country-specific terms, it is fairly typical – for example, in Austria, Germany, Switzerland, and elsewhere – for nearly 99 percent of all nonagricultural business establishments to have fewer than 100 employees. Close to 90 percent have fewer than 10 employees and just about 2 percent employ 100 or more workers. In terms of sustaining employment, the SME sector proved flexible and adaptable enough during the 1980s and well into the 1990s (a period of heavy industrial restructuring) to absorb, and thereby compensate for, ongoing layoffs in the larger public sector-dominated industries to the tune of some 80,000 employees (or nearly 3 percent of Austria's total workforce).

Apart from their structural strength, SMEs also tend to be resilient to business cycle volatility. Their relatively immediate socioeconomic exposure implies they are prone to conflicts of interest and partisanship; such conflicts have both positive and negative repercussions in terms of sector-related policy formulation and concomitant institutional implications. Frequently, the SME arena resembles an essentially market-based system wherein policy challenges and demands are deeply nuanced.

The existence and survival of SME structures – their complexities mirroring the reality of economic life itself – visibly contradict erstwhile "prophecies" of the ultimate demise of small businesses under both classical as well as Marxist doctrines. The historical evidence and recent systemic transformations in formerly Soviet-dominated Central and Eastern Europe clearly point to the opposite: restructuring calls for the rapid creation or revival of sound, diversified SME structures, which are indispensable to sustained economic recovery.

It is all too easy to take the inherent wealth and diversity of SME-structured business scenarios for granted – perhaps because we assume that SMEs have always been there or simply ought to be there. For more conscious policy considerations, however, this is not self-evident; rather, SMEs' underlying resilience and ability to adjust must be safeguarded constantly.

This ability to adjust to changing business conditions and, at times, volatile cyclical movements is typically characterized by a structural permeability that extends both upward and downward. This means adjusting – and in today's scenario, this is all the more relevant – to forces of regional or even global integration by implicitly restructuring business size. Such restructuring, by nature, should not be interpreted as simply a tendency toward "concentration." It is, equally, a process of

opening up opportunities "downstream" in terms of structural deepening as both markets and, in particular, market size change.

Insights from modern industrial economics give credence to such complexities in the course of structural adjustment with new evidence as to the criteria for "optimal" business sizes being induced, for instance, through technological developments. This emphasizes not so much economies of scale as it does elements such as SME-specific diversification or differentiation, in turn rendering classical returns to scale less valid than economies of scope. More pointedly, it implies a conscious recognition of such complexities as regional specifics, market differentiation, and locational spread (including the relative density of businesses relating to given demand and supply patterns). This has implications for product and market orientation and for the diversification of size structures – relevant to both forward and backward linkages in respective business activities.

Any SME policy addressing such complexities has to do with what one might subsume under contributing to quality of life and conditions of welfare in a broader sense. Endowment with diversified business structures – and thereby with enhanced economic opportunities, productive capacities, and increased potential for catering to differentiated, individualized patterns of demand – needs to be judged with a view to such qualitative aspects. A study to this effect conducted in Austria, for instance, depicts regional differences in relative SME density of between 40 and 80 per 1,000 inhabitants as clearly correlating, respectively, with higher and lower levels of economic welfare, income, and purchasing power.

3. SMEs in a Policymaking Context

Over and above mere economic considerations, the relevance of SMEs must be viewed from a broader socioeconomic point of view. They are seen as a driving force of structural change on the one hand and as a stabilizing factor safeguarding a given economic setting and its institutional framework in the dynamics of change on the other.

For any freedom – and for a market-oriented socioeconomic order as a way of life – this unequivocally implies committing to entrepreneurial initiative and guaranteeing both free and autonomous pursuit of business opportunities. It also implies a commitment to market criteria of performance with a legitimate claim to adequate returns,

having duly considered social and environmental responsibility in the conduct of business. It also means that any such policy inescapably becomes part and parcel of shaping socioeconomic conditions that allow SMEs to thrive, given their diversified structures and patterns of performance. This is indispensable for guaranteeing and sustaining welfare conditions for society as a whole – and constitutes no doubt a policy challenge at any time anywhere.

Such policymaking ought not to shy away from the nitty-gritty, such as avoiding steps that burden SMEs unfairly with unremunerated administrative tasks by public authorities. A recent study to this effect in Germany demonstrates that the relative impact in terms of cost and human resources allocated is up to 22 times as high for SMEs as for larger enterprises. In a somewhat more caustic vein (but pointing essentially in the same direction), the US Small Business Administration indicates that the roughly 10 million businesses under its constituency are inundated annually by well over 300 million forms and up to one billion pages containing more than 7 billion questions; the unremunerated costs of this exercise average about US$ 3,000 or more per firm. Thankfully perhaps, a similar assessment has not yet been carried out for the EU.

If, on the other hand – as is often "liberally" claimed – we recognize that SMEs represent the mainstay or trademark of any market-oriented economy, and if it is true that, due simply to the existence of more diversified SME structures, economies are continually able to adapt even to severe policy mistakes and new challenges, then any related policy is likely to attain a certain "natural" legitimacy.

4. Conclusion

On closer scrutiny of such arguments, however, one is left wondering whether such demands and recommendations do not remain superficial, and fail to recognize the more profound issues at stake. From a systems-related point of view, should we not be asking more probing questions as to the crucial building blocks of any SME-specific policy? Some of these might include the following:

First, given prevailing structures, do classically defined strategies of blatant marketeering make for adequate, sensitive policy that takes cognizance of the underlying diversities and complexities?

Second, does the sheer prevalence of SME diversification and related institutional structures call for an equally differentiated policy – one that, within a market-based framework, accommodates the appropriate range of cooperative (corporatist) or subsidiary forms of business organization and relationships as a kind of "natural" ingredient? Might this not enrich any economic system beyond simple supply and demand mechanisms at the micro-level?

Third, at the risk of sounding heretical, should we not (and perhaps legitimately so) foster and thereby acknowledge intermediate forms of business associations at the meso-level as an inevitable feature of institutionalization for any sound SME policy? This would mean recognizing in principle the following:

- Competition, as a coordinating mechanism via markets, constitutes only one (but not the only) criterion or instrument governing business conduct. Depending on the given sectoral or structural conditions, this does not necessarily take center-stage. To put it more bluntly, accepting an essentially competitive, market-oriented economic order for SMEs requires, equally, an appropriate framework of institutions.
- Taking cognizance of such specifics with implicit forms of institutionalization may prove more conducive to SME-related business conduct than undifferentiated pleas of cut-throat competition at the micro-level by emphasizing and bringing to bear economies of scope rather than of scale. This means considering SMEs not merely "beautiful" but also efficient in a more comprehensive sector-specific sense.
- The necessary autonomy of SMEs vis-à-vis the specter of larger entities must be constantly safeguarded, not least by way of sector-related forms of institutionalization that duly recognize the role and relevance of the SME sector from an overarching socioeconomic perspective.

Any self-conscious (as opposed to self-righteous) SME policy conceived on such grounds clearly needs – in view of the legitimate claims and issues involved – to be articulated more aggressively still, if it is to be effective.

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