

## **Does Spatial Proximity Matter? Understanding the Costs and Benefits of Agglomeration**

Maryiam Haroon, Assistant Professor, Faculty of Economics, and Dr. Azam Chaudhry, Professor and Dean, Faculty of Economics, Lahore School of Economics.

### **Introduction:**

Agglomeration economies capture the benefits of the co-localization of firms. These benefits are commonly analyzed in terms of various forms of externalities, such as localization, urbanization and diversity affecting productivity in nearby firms. This implies that the characteristics of the local economic environment provide determinants for the productivity of individual firms. Localization externalities (often referred to as Marshallian externalities) raise productivity through externalities in input markets, labor markets and knowledge externalities. In addition to localization externalities, literature has been emphasized on the importance of urbanization economies and inter-industry agglomeration economies connected with variety in productivity improvement of firms. Diversity of industries can be a source of positive externalities as industries borrow ideas and technology developed from each other. Industrial diversity also generates pecuniary externalities in the form of output and input linkages. Spatial proximity also brings competition closer to firms and being closer to other firms make them compete for resources as well.

In Pakistan, industrial clusters and special economic zones are key areas of focus for industrial policy makers in order to promote the industrial base and increase its competitiveness. Industrial clusters and their effect on productivity merits attention in the context of manufacturing firms in Pakistan and is a relevant case as it provides an opportunity to study the role of agglomeration in the phase of development where agglomeration economies are high but before congestion has set in. Our note explains how agglomeration externalities directly increase productivity of firms and secondly, how these externalities indirectly increase profits by reducing costs and raising prices. The main source of data is the Census of Manufacturing Industries (CMI) for 2010- 2011 and 2005–2006 for the Punjab province of Pakistan.

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### Results:

- We identify sectors that can benefit in terms from industrial concentration:

| <u>Industrial Clusters and Special Economic Zones</u>                               | <u>Industrial Clusters only</u>  |
|---|--|
| Rubber and plastic Industry<br>Electrical Equipment Industry<br>Machinery Equipment | Textile Industry<br>Pharmaceuticals Industry<br>Wearing Apparel Industry<br>Chemical Industry        |
| <u>Special Economic Zones only</u>  | <u>None</u>  |
| Jewellery Industry  | Other Non Metallic Industry<br>Fabricated Metal Industry<br>Leather Industry<br>Basic Metal Industry |

- We also identify possible locations for developing clusters and special economic zones:

| <u>Sector</u>        | <u>Policy Choices</u>                         | <u>Location Choice</u>   |
|----------------------|---|--|
| Textile              | Industrial Clusters                           | Multan, Attock , Sargodha, Khushab, Dera Ghazi Khan, Muzaffargarh, Lahore, Bahawalnagar      |
| Pharmaceuticals      | Industrial Clusters                           | Rawalpindi, Faisalabad, Sheikhupura, Okara   |
| Wearing Apparel      | Industrial Clusters                           | Sialkot, Faisalabad, Lahore, Hafizabad   |
| Chemical             | Industrial Clusters                           | Lahore, Sheikhupura, Jhelum, Rawalpindi, Pakpattan, Sargodha                                 |
| Electrical Equipment | Industrial Clusters<br>Special Economic Zones | Lahore, Gujranwala, Gujrat<br>Gujranwala, Lahore.  |
| Machinery Equipment  | Industrial Clusters<br>Special Economic Zones | Faisalabad, Lahore, Gujranwala<br>Dera Ghazi Khan, Rawalpindi, Bhawalpur, Toba Tek Singh.    |
| Rubber and Plastic   | Industrial Clusters<br>Special Economic Zones | Muzaffarabad, Faisalabad, Lahore<br>Gujrat, Multan, Gujranwala, Lahore, Muzaffargarh, Kasur. |

### Policy Recommendations:

- Active industrial strategy is crucial for industrial growth as well as export growth.
- Some industries benefit from industrial clusters while others benefit from special economic zones.
- Industrial policy should be sector specific:
  - Those who benefit from industrial clusters -> industrial clusters should be promoted.
  - Those who benefit from special economic zones -> special economic zones should be promoted.
- The government needs to immediately focus on the recommended sectors in the recommended regions especially in the context of CPEC related policies.