

Maryiam Haroon and Azam Chaudhry (2014). Where Do New Firms Locate? The Effects of Agglomeration on the Formation and Scale of Operations of New Firms in Punjab. Economics Discussion Papers, No 2014-21, Kiel Institute for the World Economy. <http://www.economics-ejournal.org/economics/discussionpapers/2014-21>

Responses to Referee Report 1:

Comment 1: This leads to the question if the model by Soubeyran and Thisse (2008) is the right model to study new entrants in a country like Pakistan. The model is also rather loosely connected to the 2 main empirical specifications. Or in other words, it is not clear how equation (10) from the model could lead to equations (11) and, especially, (12)

The Soubeyran and Thisse (2008) model shows that a higher number of workers and higher knowledge spillovers are the two factors that attract new firms to locate in a specific area. So, the equations in our empirical model are connected to the number of workers. In our estimations, we subdivide the number of workers as in Soubeyran and Thisse (2008) into two components: the total number of workers in a district and the number of workers in a particular industry within a particular district. The existing model can be adapted by adding the superscript on the number of workers (L_d) in equation 10. The superscript will vary in two ways: it will vary across the number of workers in a region and number of workers in an industry within a district. We moved from equation 10 to 11 and 12, since equation 10 states that higher number of workers will lead more new firms to enter in an area, which indicates that more employment will lead more new firms to enter. So, the number of workers (L_d) in equation 10 has been decomposed into two components in equation 11 and 12 and the two components are the number of in a particular industry in a district (which is referred to as localization) and the total employment in a district (which is referred to as urbanization).

Comment 2: Given that the main selling point of the paper is the fact that the analysis deals with a developing country, it would have been useful to learn more about the Punjab and its districts (how many districts are for instance included?). Are firms free to choose a location in the Punjab or is this regulated somehow by government policy?

Punjab is the Pakistani province with the highest population and also contains a significant proportion of the industrial base of the country. We have included all 34 districts of Punjab in the analysis and have set the boundaries of a district according to the government's classification in 2004. This has been done in order to match the data sets. Using all 34 districts allows us to look at a new firm formation in a wide variety of sectors across a wide socioeconomic and geographical

spectrum. There are no formal regulations for firms in Punjab to locate in specific areas, though large scale manufacturing firms are not allowed to locate in certain residential areas.

Comment 3: The estimations include a number of controls and fixed effects and make sense from a purely econometric point of view but, see above, the 2 main empirical specifications are not well-grounded in theory. It is for instance left unexplained why exactly the same specification (in terms of independent variables) can be used to explain the number of new entrants as well as the scale of operations.

Overall, we are trying to look at how the agglomeration economies will foster entrepreneurship in a particular district. The two ways through which we have measured entrepreneurship in this paper is by the number of new firms that enter the industrial sector and their employment levels. The reason behind using the same specification is that we want to test how new activity in an area (measured in two different ways) is affected by existing employment in an area. The same system of equations (using the same set of independent variables) has been analyzed in the literature as well, which looks at new firm activity in an area (Rosenthal & Strange, 2010).

Comment 4: Also, one would like to see a benchmark, assuming that employment for the various industries is unevenly distributed across the Punjab districts to begin with is the spatial allocation of new entrants not skewed by definition?

The reviewer has correctly pointed out that the spatial allocation can be skewed. In order to check for robustness, we estimated the same specification by choosing a subset of industries and our result do not differ from our main results. Also, in order to have variation we also looked at the results for industries with very high employment levels and the ones with low employment levels as well and obtained similar results. These results can be included in the section on robustness checks.

Comment 5: I would urge the authors to make it clear, both analytically and empirically, how their case differs from the existing (vast) literature on localization and urbanization economies.

We can alter the introduction by adding the stated reasoning to distinguish our analysis from other existing literature:

“The extensive theoretical and empirical literature supports that agglomeration through localization and urbanization plays an important role in determining firm location choice for developed countries though there is lack of empirical literature that directly tests this relationship for developing countries. The literature on developing countries examines the impact of agglomeration on firm’s productivity or productivity gains for countries such as China, Indonesia, India and Korea

while ignoring the impact of localization and urbanization on new firm formation. This study is the first one examining the impact of agglomeration on new firm formation in a developing country for manufacturing industries.

We expect agglomeration economies are more prevalent in developing countries like Pakistan as compared to developed countries and there are multiple examples of industrial clusters in Punjab, such as the textile industry in Faisalabad, the sports good industry in Sialkot and the electronic equipment industry in Gujranwala. In developing countries, agglomeration economies are more likely to attract new firms in agglomerated areas due to several reasons: In developing countries like Pakistan, where research and development is costly and there are financial constraints, agglomeration economies are more likely to be prevalent. By locating close to each other firms can derive benefits of knowledge spillovers and once a technology is adopted by one firm (and workers in an industry learn about it) then the new technology is more likely to spread. Also, the intermediate inputs or complementary factors to support production also adapt more quickly in agglomerated areas. Similarly, benefits such as increased access to inputs and sharing of knowledge between workers are common in agglomerated areas. Also, agglomeration is important for firms in developing countries since many of these firms tend to be smaller in scale and these firms find adopting a new technology difficult and undertaking research and development costly so those firms are likely to benefit by locating in agglomerated areas. Agglomeration forces are also more likely to be important for developing countries since they may be more important to ensure reliable business transactions in markets with weaker contract enforcement. For these reasons, we have seen that many developing countries are characterized by manufacturing clusters (and Pakistan in particular has its key export sectors such as textiles and sports goods concentrated in a few districts) but there have been very few studies looking at how agglomeration affects new firm entry in the developing country context.

This paper focuses on Punjab's industrial sector and uses a rich data set which covers most firms in Punjab. We chose Punjab for the analysis since it is the Pakistani province with the highest population and because a significant proportion of the industrial base is located there which allows us to look at a new firm formation in a wide variety of sectors across a wide socioeconomic and geographical spectrum.”