Impact of industrial development on labor market outcomes: Evidence from regional and micro data[*]

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Extended Abstract

Impact of industrial development on local economies has been densely analyzed with a consensus that more industrial economic activity expands local growth and development (see e.g. Erumban and de Vries, (2011), Szirmai (2012), Lavopa and Szirmai (2012), Felipe et al. (2019) among others). While impact of industrialization is examined from economic growth perspective influence on labor market outcomes is relatively less analyzed. This gap is even more visible considering the spatial and individual aspects of the unemployment problem. In this study, we examine the Turkish economy and offer a two-stage analysis to understand the instrumental role of industrial development for fostering job prospects at local and individual level.

Turkish economy is characterized by a pervasive regional duality. Historical examination of this dichotomy translates into a developed-west and underdeveloped-east narrative for the Turkish economy (Doğruel and Doğruel, 2003; Karahasan, 2020a). This dual pattern is reflected on various local fundamentals running from human capital development to industrial production (Karahasan et al., 2016). Meanwhile, post 2000s is a transformation era for the Turkish economy both from production as well as labor market sides. While unemployment rate jumps to 14% during the early 2000s, we also observe a sudden fall in the manufacturing contribution to the total GDP (Karahasan, 2020b, 2021). Among various dimensions of regional disparities distribution of industrial production and local unemployment patterns are central interests of this research.

Building on these motivations, the first set of analysis questions the impact of industrial production on local unemployment patterns. Using NUTS-2 level data for the 2004-2022 period we estimate different non-spatial and spatial panel fixed effect models and conclude that industrialization (share of manufacturing production in regional GDP) matters for understanding the geographical evolution of unemployment patterns. After controlling for local factors that can affect unemployment and spatial externalities that can create inter-regional spillovers findings confirm that regions with more industrial production tend to have lower unemployment problem. This is to say that those regions with higher manufacturing contribution to the local GDP are better combating with the unemployment problem. Additional analyses for the unemployment inertia does not change the overall findings. While these first set of models are informative, they can be further augmented by incorporating spatial externalities. Among various alternatives spatial

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channels are introduced via labor markets and local industrialization. Our results validate that even after controlling for spatial externalities, those regions with higher manufacturing specialization have lower unemployment problem.

Second set of analysis is from individual level data. We use the Household Labor Force Survey (HLFS) for the same time interval. Since HLFS is representative at the NUTS-2 level we can merge the regional industrial production data (share of manufacturing production in regional GDP) with the individual level survey data. Our findings from probit type micro-econometric models reveal that after controlling for individual heterogeneity those individuals who live in NUTS-2 regions with higher industrial production have less propensity to be unemployed. For certain years there are exceptions, however our year-by-year analyses show that in majority of the sample local industrialization trends have significant (negative) impact on the propensity of being unemployed. We also consider the potential effects of spatial proximity. We compute the spatial lag of industrial development at the regional scale and apply the same narrative. Our additional findings show that influence of industrial development is not bounded at the local level as total industrial development in a region (region and its spatial proximity -spatial lag) has sizable influence on individuals' labor market deprivations. These results are vital as they remind once again that individual's position in the labor market is influenced from spatial spillovers. We also consider different heterogeneity layers (e.g. geography, developmental differences, labor market conditions) and find out that industrialization still matters. Yet, the effect can change in size depending on the sub-layer considered.

Overall, our findings remind the necessity of policy action to foster more industrial development, not only to promote local growth but also to combat with the pervasive impact of unemployment problem. It is notable that both aggregate (from panel fixed effect models) as well as micro-econometric results confirm the important role of industrialization while trying to mitigate the adverse effects of the unemployment problem. Note that, contemporary discussions on the de(re)industrialization trends in Turkey and other developing countries point out the adverse effects of structural change for developing countries (see e.g. Dasgupta and Singh (2007), Rodrik (2016)). In addition to different reflections of this so-called asymmetric structural change our findings confirm that labor markets will significantly suffer. Remarkably, falling industrial production will not only have macro-regional effects but also will have destructive effects on the labor market status of individuals.

Keywords: industrialization, unemployment, Turkey

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Preliminary References

Dasgupta, S., & Singh, A. (2007). Manufacturing, services and premature deindustrialization in developing countries: A Kaldorian analysis. In G. Mavrotas & A. Shorrocks (Eds.), Advancing development: Studies in development economics and policy (pp. 435–454). Palgrave Macmillan.

Dogruel, F., & Dogruel, A. S. (2003). Türkiye'de bölgesel gelir farklılıkları ve büyüme. in *Köse AH, Senses, F. ve Yeldan, E.(Eds.), İktisat Üzerine Yazılar I: Küresel Düzen, Birikim, Devlet ve Sınıflar-Korkut Boratav'a Armağan, İstanbul İletişim Publications, İstanbul*, 287-318.

Erumban, A. A., & de Vries, G. J. (2021). Industrialization in developing countries: Is it related to poverty reduction? (WIDER Working Paper No. 2021/172). UNU-WIDER.

Felipe, J., Mehta, A., & Rhee, C. (2019). Manufacturing matters…but it's the jobs that count. Cambridge Journal of Economics, 43(1), 139–168.

Karahasan, B. C., Dogruel, F., & Dogruel, A. S. (2016). Can market potential explain regional disparities in developing countries? Evidence from Turkey. *The Developing Economies*, *54*(2), 162-197.

Karahasan, B. C. (2020a). Winners and losers of rapid growth in Turkey: Analysis of the spatial variability of convergence. *Papers in Regional Science*, *99*(3), 603-644.

Karahasan, B. C. (2020b). Regional Deindustrialization in Turkey. *Topics in Middle Eastern & North African Economies: Proceedings of the Middle East Economic Association*, *22*(1).

Karahasan B.C. (2021). Türkiye'de Sanayi(siz)leşmenin Mekansal Boyutu, in Türkiye Ekonomisinde Büyüme, Kalkınma ve Eşitsizlik, A. Suut Doğruel'e Armağan (Eds. Kent O., Karahasan B.C., Tekçe M., Taştan H., Donduran M.), Efil Publications, Ankara, Turkey.

Lavopa, A., & Szirmai, A. (2012). Industrialization, employment and poverty (UNU-MERIT Working Paper No. 2012-081).

Rodrik, D. (2016). Premature deindustrialization. *Journal of economic growth*, *21*, 1-33.