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## **Dissecting the Impact of Import Competition on U.S. Earnings Inequality**

- **This paper studies the impact of globalization on U.S. earnings inequality in the context of rapidly growing import competition from China**
- **The increase in U.S. inequality during 2000-2007 has been driven entirely by changes within regions}**
- **While the existing literature has established differences in wage growth across regions as a consequence of import competition, understanding the impact of globalization on rising U.S. inequality requires then focusing on its impact on inequality within regions**
- **Exploiting variation in exposure to this unprecedented trade shock across local labor markets I find that import competition causes an increase in earnings inequality**
- **This impact occurs primarily on the lower tail of the earnings distribution**
- **I decompose the variation in regional inequality into changes occurring within and between industries, occupations, earnings deciles, and skill categories**
- **While the relative share of the impact on between- and within-group inequality varies across these various dimensions, in each case the impact of trade on within-group inequality represents a relevant share of the overall impact**

The increase in U.S. imports in the past two decades - driven mostly by imports from China - has had a significant impact on U.S. labor markets. As influential recent research documents (Autor et al. (2013)), local labor markets facing larger degrees of trade exposure have

observed larger declines in manufacturing employment and slower wage growth relative to less-exposed regions. Concerns expressed in the public debate appear largely focused on the distributional consequences of this trade shock. While prior research has established that the significant increase in import competition faced by U.S. labor markets in recent decades generates spatial differences in wages, the increase in earnings inequality during the 2000-2007 period occurs entirely within rather than between regions. Motivated by this debate, this paper studies the impact of the increase in import competition from China during the period 1990-2007 on earnings inequality within local labor markets.

Earnings inequality has increased sharply in the U.S. during this period (Autor et al. (2008), Juhn et al. (1993)). A natural and widely researched question is to what extent globalization is behind this pattern, in a context of competing plausible explanations such as technological change, a decline in unionization rates or tax policies ((Autor et al. (2015)). A finer and related point also examined in this paper is through which mechanisms is overall earnings inequality increasing and through which channels is it influenced by import competition. I study the impact of globalization on U.S. earnings inequality exploiting variation in exposure to this large trade shock across local labor markets. Differently than earlier approaches leveraging variation across industries or occupations, this method allows me to capture the impact of import competition on a wide set of outcomes, including various measures of inequality and its between group and within-group components. I find that import competition leads to an increase in earnings inequality. A \$1000 per worker increase in Chinese import competition leads to a 0.16 standard deviation increase in earnings inequality, defined as the variance of log hourly earnings. This impact is larger on the lower tail of the distribution.

A \$1000 per worker increase in Chinese import competition leads to a 0.11 standard deviation increase in the 50/20 earnings ratio and a not statistically significant 0.08 standard deviation increase in the 80/50 ratio. In the 2000-2007 period, this difference is even more pronounced. Further, I find an impact on residual earnings inequality as large as the impact on the variance of raw earnings, indicating that import competition widens inequality within rather than between demographic and skill groups.

Decomposing the variation in regional inequality to changes occurring within and between industries, occupations, earnings deciles, and skill categories provides insights regarding the mechanisms at work. I find that while the exact relative share of the impact on between and within group inequality varies across these various dimensions and periods, in the case of industries, occupations, and educational attainment the impact of import competition on within-

group inequality is the most relevant share of the overall impact. During the 2000-2007 period, the impact on the within component is three times larger than the impact on the between component in the case of industries, twice as large in the case of occupations, and almost six times larger in the case of educational attainment.

These results have implications for theoretical models of international trade and labor markets. They lend support to recently developed heterogeneous-firms trade models (Helpman et al. (2010), Egger and Kreickemeier (2009)) in which trade integration leads to an increase in inequality within industries. At the same time they suggest that models capturing the impact of import competition on inequality based on differences in the relative wage of skilled and unskilled workers capture only part of the total impact on earnings inequality. These results are also relevant from a policy perspective. They suggest policies seeking to compensate those relatively hurt by import competition will be incomplete if they are based on workers' observable educational attainment as import competition generates inequality mostly within (observable) skill groups. In the same way, policies aimed at reducing inequality generated by import competition should not benefit some industries over others as most of the impact occurs within two-digit industries.

The empirical strategy I use exploits the variation in the growth of import competition from China across industries and the variation across U.S. local labor markets in the composition of their economic activity, following an approach that has been pioneered by Topalova (2007), Autor et al. (2013), Kovak (2013), and McLaren and Hakobyan (2010) among others. This approach is based on the notion that import competition in tradable goods impacts not only workers in the tradable sectors but the entire economy of each region. This approach is more flexible than identification based on variation across industries, since it allows me to study the impact of trade on variables that are not industry-specific, such as inequality. This strategy also allows me to disentangle the impact of trade exposure on inequality within and between industries, occupations, earnings deciles, and skill groups.

My empirical strategy recognizes the possibly endogenous nature of this shock to local labor markets. While the rapid growth of Chinese import competition in the U.S. - and in many other countries - during this period is to a large extent exogenous to developments in U.S. industries and is led by the productivity growth and increased openness of China, the composition of this growth in imports across industries could be partly driven by shocks to U.S. industries that impact both imports and labor market outcomes. To account for this possible endogeneity I

instrument for the growth in U.S. imports from China using the growth in imports by a set of twelve other developed economies, following the strategy of Autor et al. (2013).