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Low-wage import competition, inflationary pressure, and industry dynamics in Europe

Raphael A. Auer [a,*], Kathrin Degen [b], Andreas M. Fischer [c]

[a] Swiss National Bank, Postfach, 8022 Zurich, Switzerland
[b] University of Lausanne, Quartier UNIL-Dorigny, 1015 Lausanne, Switzerland
[c] Swiss National Bank and CEPR, Postfach, 8022 Zurich, Switzerland

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ABSTRACT

Have exogenous changes in import competition from low-wage countries (LWCs) brought about changes in inflationary pressure in Europe? This paper examines whether labor-intensive exports from Asia and other global regions have a uniform impact on producer prices in Germany, France, Italy, Sweden, and the United Kingdom. In a panel covering 110 (4-digit) NACE industries from 1995 to 2008, instrumental variable estimations document that LWC import competition is associated with strong price effects. More specifically, when Chinese and other Asian LWC exporters capture 1% of a European market, producer prices decrease by about 3%. Next, decomposing the mechanisms that underlie the LWC price effect on European industry, we show that import competition has a pronounced effect on average productivity and only a muted effect on wages. Owing to the exit of firms and the increase in productivity, LWC import competition is shown to have substantially reduced employment in the European manufacturing sector.

1. Introduction

The impact of trade with low-wage countries (LWCs) – and in particular with China – on industry structure and prices in developed economies is a contentious issue.[1] Numerous researchers have attempted to determine whether imports from China hold down European prices.[2] A common finding is that trade with LWCs has only a mild effect at best on European prices. The objective of this paper is to demonstrate that the (exogenous) supply impact of LWC exports on European producer prices is much more pronounced and complex than is commonly assumed.

We argue that the existing literature fails to establish the causal supply effects of LWC trade since trade flows are endogenous to local demand conditions. For example, when an industrial sector in Europe experiences a positive demand

* Corresponding author.
E-mail addresses: raphael.auer@snb.ch (R.A. Auer), kathrin.degen@unil.ch (K. Degen), andreas.fischer@snb.ch (A.M. Fischer).

[1] See Mishkin (2007), Carney (2008), De Gregorio (2008), Trichet (2008), and Bullard (2012) for diverging views as to how central bank governors define the links between globalization and inflation.

[2] Micro studies using 2- and 4-digit PPI and CPI data include Bloom et al. (2011) for Europe (large price effect in those sectors affected most by China's WTO accession), Bugamelli et al. (2010) for Italy (small price effect), Glatzer et al. (2006) for Austria (no price effect), International Monetary Fund (2006) for Europe (no price effect), Wheeler (2008) for the UK (no price effect), and Lewis and Saleheen (2012) also for the UK (large effect on import prices). Borio and Filardo (2007) and Pain et al. (2008) use conventional specifications of Phillips curves to determine the role of foreign output gaps on (aggregate) domestic inflation. A separate set of empirical studies including Auer and Fischer (2010), Ball (2006), Gamber and Hung (2001), Ihrig et al. (2007), Kamin et al. (2008), and Tootell (1998) focus exclusively on the U.S. case.

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shock, prices increase, thereby inducing an increase in LWC imports. The presence of this endogeneity biases the estimated relative price effect from trade towards a less negative or even positive correlation between LWC import growth and European price changes.

The paper's first contribution is to disentangle the price effect from LWC import competition between heterogeneous European import markets. We base our empirical approach on the methodology of Auer and Fischer (2010), who show how comparative advantage-induced import supply shocks can identify the causal effect of LWC import competition on US prices. We apply this methodology in a European context and between heterogeneous import markets (i.e., Germany, France, Italy, Sweden, and the United Kingdom). Beyond the empirical finding that LWC trade has a profound relative price impact on European producer prices and that the price effect is very heterogeneous in the five markets under consideration, we show that this result is largely driven by Chinese exports. More specifically, when Chinese exporters capture 1% of European market share, producer prices decrease between 3.8% and 6.8%.

The paper's second contribution is to decompose the channels of the LWC price effect, thereby highlighting how LWC import competition has shaped the evolution of European industry during the last decade. Such import competition is shown to have had only a small effect on the relative wages of production workers, no effect on firm's margins, but a large effect on average firm productivity. Additional evidence hints at the productivity effect being driven by the exit of unproductive firms, which is consistent with Melitz (2003). We find some evidence for quality upgrading in response to LWC import competition and point out the importance of outsourcing, i.e., the fact that LWC economies export low cost input goods that are used by European firms and thus decrease their production costs. We also examine the importance of offshoring to LWC economies, which seems to be unrelated to price developments in our study.[3]

LWC import competition is also shown to have significantly reduced employment in the manufacturing sector. Our estimates suggest that between 1995 and 2007, the increase in LWC import competition may have reduced employment in the manufacturing sector of Germany, Italy, France, Sweden, and the UK by 10%. This corresponds to about 1.3 million workers in the sectors covered in our study.

The paper relates to several literatures. First, there are only a limited number of empirical studies that quantify the domestic producer price effect of LWC import competition and decompose this effect into the contributions of margins, wages, and productivity. Regarding the markup response, Bugamelli et al. (2010) match firm and industry data to capture industry price effects and firm responses to Chinese import competition. They estimate the importance of changes in the Chinese import share on the prices of Italian firms and – due to the fact that their data set includes relatively good controls for firm-specific costs – they can document the importance of markup adjustments that are behind the price changes.

By contrast, Bloom et al. (2010) and Martin and Méjean (2011) highlight the importance of technology and quality upgrading in the face of increasing low cost import competition. Bloom et al. (2010), utilizing the impact of China's WTO accession, establish the causal effect of Chinese import competition on technological change within firms and reallocation of employment towards more productive firms.[4] Martin and Méjean (2011) document the impact of LWC import competition on the quality of France's exports, finding pronounced quality upgrading. It is likely that also domestically consumed goods are similarly upgraded when LWC import competition increases, with potentially important consequences regarding employment dynamics, productivity growth, and welfare.

Last, regarding the employment response, Autor et al. (2012) find that U.S. regions with industry structures that are exposed to Chinese import competition lost substantial manufacturing employment during the last decades. This finding is in line with Bloom et al. (2010), who also document that increased Chinese import competition lowered prices, profitability, and overall employment, yet increased the share of skilled workers in employment in European economies.

Our price evidence and its decomposition into productivity gains at the industry level acts as a bridge to motivate empirical studies of import competition and productivity gains (i.e., skill upgrading, employment, product quality, or offshoring) at the firm level for which there is no price data.[5]

Our empirical results shed further light on the growing debate on the role of globalization in inflation dynamics and monetary policy. One branch of this literature considers how foreign competition decreases the pricing power of domestic firms in New Keynesian models, see Guerrieri et al. (2010), Gaiotti (2010), and Woodford (2009). Our results support the view that models of marginal labor cost, which incorporate foreign competition should focus on labor productivity and less on wage pressures. Third, numerous studies in international economics note that trade with China is special. Our results show that among the LWCs Chinese exports have the largest impact on European prices.[6]

The paper proceeds as follows. Section 2 discusses the empirical framework and the data in the context of LWC exports. Section 3 presents OLS and IV estimates of LWCs' impact on (aggregate) European producer prices. Section 4 disentangles

[3] Our finding of high productivity growth in sectors that experienced the largest increases in low-wage import competition is consistent with theories of trade innovation in response to import competition, see Bloom et al. (2011, 2010), and Levchenko and Zhang (2011).

[4] Bloom et al. (2010) can thus potentially explain why Auer and Fischer (2008) find that U.S. price declines following increased LWC import competition are closely matched with sectoral productivity gains.

[5] The literature using firm level data to explain productivity gains in response to import competition is expanding rapidly as different dimensions. Bernard et al. (2006), focusing on Chinese import competition, emphasize the exit of unproductive firms, while Bloom et al. (2011), Bustos (2011), and Teshima (2010) emphasize the role of innovation, Khandelwal (2010) considers the role of quality improvements, Mion et al. (2010) note the role of skill upgrading, and Costinot et al. (2011) and Oldenski (2011) highlight the role of offshoring.

[6] Bloom et al. (2011), Mion and Zhu (2011), Mion et al. (2010), and Bugamelli et al. (2010) have singled out China as being the most important low-wage country.