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In the Euro Area, highly mobile foreign born individuals help smoothing the impact of a given labor demand shocks. Had natives the same mobility of foreigners (born within or outside the EU), such impact would be halved.

ECB's unconventional monetary policy and credit conditions: the role of banking competition.

The ECB targeted liquidity injections, implemented from 2014, lowered the costs of bank loans for Italian businesses, especially in areas where banking competition was fiercer and for smaller and ex-ante safer firms.

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Brexit might raise trade barriers between the EU and the UK. Potential costs are higher than commonly estimated – especially for UK producers – once the indirect effects of tariffs, working through global value chains are taken into account.

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Labor mobility and adjustment to Shocks in the Euro Area: the role of immigrants.

Labor mobility in response to labor demand shocks

The importance of labor mobility in currency areas has long been acknowledged (Mundell, 1961). With a common monetary policy, negative region-specific shocks increasing unemployment in region A relative to region B would be more easily absorbed if part of the labor force moved from A to B.

The degree of labour mobility varies significantly around the world, however, and turns out to be much more limited and slower in Europe than in the US (see e.g. Beyer and Smets, 2015). Mobility also differs significantly across individuals (e.g. by age group or migration status), which adds important details to the analysis of how labor demand shocks are absorbed across areas (Cadena and Kovak, 2016).

> **US population is much more mobile than the Euro Area one in response to a similar labor demand shock**

A recent paper, **Immigrants, labor market dynamics and adjustment to shocks in the Euro Area** (Banca d'Italia, Working Papers No. 1195), by Gaetano Basso, Francesco D'Amuri and Giovanni Peri, provides fresh evidence on these issues.

The paper confirms that the average elasticity of population to employment shocks is much lower in the euro area than in the US, with point estimates of 0.2 and 0.8 respectively. This means that following a shock lowering employment by 10% only 2% of the population would move from the affected EA country, vs 8% in the US. The estimated elasticity increases (to about 0.3) looking across regions within euro area countries; interestingly, it does not vary when estimated within US states. Not surprisingly, in both currency areas mobility is higher for younger and more educated individuals; moreover, it does not differ between booms and busts or small and large

employment shocks. Inspired by the works of Borjas (2001) and Cadena and Kovak (2016), the authors then focused on differences between natives and foreign born.

In the euro area, foreign born individuals (i.e. those born outside the country of analysis) have mobility rates comparable to those of the US and much higher than natives. The estimated elasticity to a shock to employment ranges between 0.7 and 0.8 and is robust

> **Foreign born individuals in the euro area are four times more mobile than natives; they thus help smoothing the impact of labor demand shocks.**

to specification changes. Interestingly, the migration response is similar when distinguishing foreign-born in the EU and outside the EU. Replicating the analysis on US data does not yield the same patterns of heterogeneity: individuals born in a US state ("natives"), in another US state or abroad all have very similar propensities to move in response to a state-specific shock.

What does it imply in terms of smoothing the labor market?

The higher mobility of migrants implies that they can act as a buffer and reduce the fluctuations of the employment rate in response to regional shocks to employment. A simple counterfactual exercise can help appreciate the magnitude of such contribution. In the status quo scenario, i.e. using the elasticities estimated for natives and foreign born, the impact of a 1.9% decrease in the level of employment[1] on the employment rate in each EA country is estimated to be equal to a 1.3 percentage points fall on average (see the green dots in the Figure 1). The counterfactual experiment simulated the same impact, but under two alternative scenarios: in the first one, all individuals

[1] The value is equal to one standard deviation of the series of overall employment variations.

had the natives' (low) elasticity, while in the second they all the foreigners' (high) elasticity. Comparing the first (Lower Bound) scenario to the status quo informs us on the current contribution of mobile foreign born in absorbing the shock; these estimates suggest that they help reduce its impact on employment rates at the country level by around 7 per cent (to 1.4 percentage points on average, see the blue dots). And if all
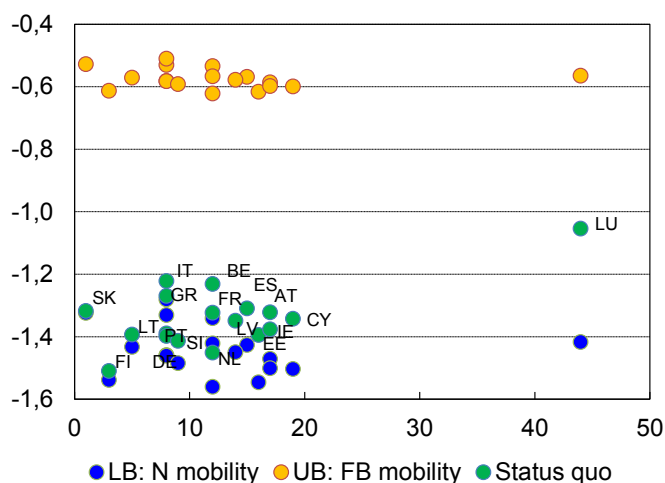
individuals had the same propensity to move as foreigners (as in the second, Upper Bound scenario), the impact of the negative employment shock would be halved (orange dots). These patterns are common to all euro area countries.

The analysis also shows that in areas with lower historical presence of immigrants, natives tend to respond (migrate) slightly more following negative labor demand shocks than in other areas. This confirms that immigrants and their mobility are substitute for natives' mobility and contribute to attenuate the incidence of shocks on native employment rates.

Scarce labor mobility hinders labour market adjustments in the euro area as compared to the US (Blanchard and Katz, 1992; Obstfeld and Peri, 1998; Arpaia et al., 2016). At the same time, the long-term tendency towards more immigration in Europe may help narrow this "mobility gap", as foreigners seem significantly more mobile than natives.

Figure 1

Labor market shocks, mobility and the employment rate, three different scenarios

Note: The figure shows the impact of a one standard deviation fall in employment on employment rates in EA countries under three different scenarios. The first scenario (Status quo, in green) uses the group-specific population to employment elasticities estimated in the paper. In the Upper Bound scenario (orange), the elasticity for natives is assumed to be as high as the one estimated for the foreigners. In a last scenario, called Lower Bound (LB, blue) the opposite holds.

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— **Gaetano Basso (Bank of Italy)**
Francesco D'Amuri (Bank of Italy)
Giovanni Peri (UC Davis and NBER)

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ECB's unconventional monetary policy and credit conditions: the role of banking competition.

ECB's targeted monetary policy helped keeping credit interest rates low

Since the global financial crisis, the ECB (as many other central banks) has implemented a series of unconventional monetary measures intended to support the financial system and, eventually, the transmission of monetary policy impulses to the real economy (ECB, 2015). New tools as quantitative easing, liquidity injections, negative deposit rates and forward guidance on future policy stance have spurred a fervent academic and policy debate concerning not only their effectiveness but also their potential interaction with the characteristics of the banking sector (Di Maggio et al., 2016).
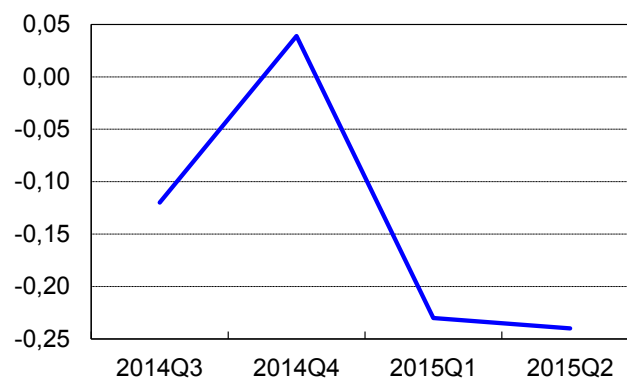
A recent paper, **Competition and the pass-through of unconventional monetary policy: evidence from TLTROs** (Banca d'Italia, Working Papers No. 1187) by Matteo Benetton and Davide Fantino, contributes to this debate analyzing the case of the so-called Targeted Longer-Term Refinancing Operations (TLTROs). Announced in June 2014 the TLTROs consisted in a series of liquidity injections designed to enhance the functioning of the monetary policy transmission mechanism by supporting lending to the real economy. Both the goals and the rules were implicitly designed ("targeted") to reduce the incentives for banks to use liquidity for buying sovereign debt, as happened in previous operations (as the LTROs), and/or roll over existing debt. For their characteristics, TLTROs thus represent an ideal experiment to understand the full transmission mechanism from the central bank to firms and households, via the financial sector.

The authors focus on the first two of a series of TLTROs, announced on the 5th of June 2014, in which euro area banks borrowed collectively 212 billion euros, with a significant contribution (57 billion in total) of Italian institutions. They ask whether such sizable injections had positive effects on Italian banks' credit supply to firms and, importantly, whether the degree of competition in the banking sector matter for the transmission mechanism.

The analysis leverages on transaction level data including almost all lending relationships in Italy and many characteristics of banks and firms. It controls for demand factors using the methodology develop by Khwaja and Mian (2008) and exploits an exogenous allocation rule for the first two TLTROs and exogenous variation in banks' local market power to identify the impact of the policy on credit interest rates and whether the effect depends on competition among banks at province level. The main result is shown in Figure 1: banks participating to TLTROs decrease their rates to the same firm by about 20 basis points relative to banks that do not participate since the first quarter of 2015, that is one quarter after the second TLTRO operation. This effect is significant and represents approximately 5 percent of the baseline cost of credit.

Figure 1

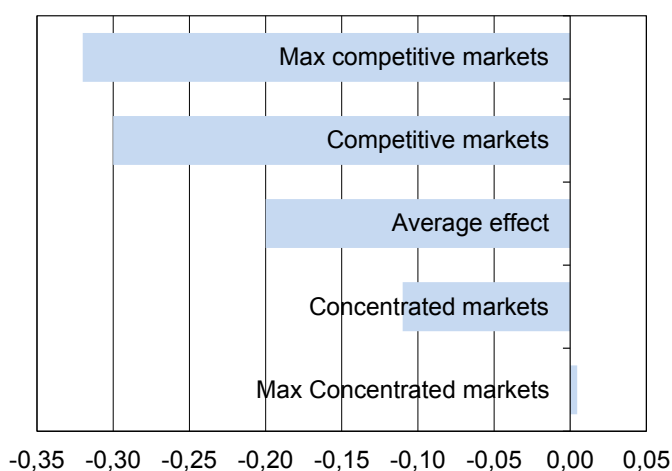**Average effect of first two TLTROs**
(percentage point)

Bank loans for Italian businesses were cheaper as a result of ECB unconventional monetary policy

A second set of results, shown in Figure 2, support the view that competition plays a significant role for the pass-through of unconventional monetary policy, limiting the sensitivity of the cost of corporate loans to the cost of bank funding: a one-standard-deviation increase in concentration reduces the impact of TLTROs on lending rates by approximately 14 basis points. This corresponds to a 32% decline in the transmission of unconventional monetary policy relative to the benchmark of perfect competition.

Furthermore, banks pass-on the lower rates to borrowers immediately in provinces with low concentration, while they start after two quarters in provinces with high concentration. Competition among banks could be an important driver of heterogenous effects of (unconventional) monetary policy, like recently shown in the US context by Scharfstein and Sunderam (2014) for mortgages and Drechsler et al. (2017) for deposits.

Figure 2

Impact in 2015Q2 by local level of competition
(percentage point)

Finally, the authors want to understand whether the transmission mechanism of TLTROs has been particularly effective for specific groups of firms having similar characteristics. They find that banks using TLTROs decrease rates to smaller and ex-ante safer

firms, while the reduction is not significant for other firms. Similarly, banks' local market power affects the pass-through for smaller and safer firms, but plays no role for larger and riskier firms. The differential effects of bank competition on small firms are consistent with previous studies like Berger and Undell (1995), showing that small firms are more dependent on bank credit because they have less alternatives than large firms in raising funding. This heterogeneity analysis therefore suggests a `flight-to-quality' within the corporate sector, with large banks competing to allocate the ECB liquidity toward smaller and ex-ante safer firms, especially in more competitive provinces.

> *Targeted unconventional monetary policy has been particularly effective in highly competitive credit markets to keep credit interest rates low*

Taken together, this evidence shows that ECB effectively supported credit to the real sector of the economy through TLTROs, reducing the interest rate charged by banks to firms; the impact of these operations has been particularly strong in locally competitive credit markets; safer and smaller firms mainly received benefit from these policy measures.

— **Matteo Benetton (UC Berkeley)**
Davide Fantino (Bank of Italy)

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Supply chains across the Channel: assessing Brexit trade costs with production linkages

On March 29th 2019 the United Kingdom (UK) will withdraw from the European Union (EU). This unprecedented event in the history of European integration raises many questions on the future relationship between the two economies.

The potential rise of trade barriers, and their direct effects on consumers have attracted the most attention. By contrast, the Brexit debate has often neglected the indirect effects of trade tariffs, working through the complex network of production linkages between countries (known as Global Value Chains, GVCs). And yet, their relevance is likely to be sizable given the strong cross-border integration of production between the two economies. Tariffs on imported intermediate goods (embedded in exported goods) will cumulate as many times as the intermediates cross the EU-UK border. Furthermore, a significant share of goods and services reach destination countries only indirectly, through other countries' exports, and thus face trade costs that are not immediately evident (Italian exports to France destined for the UK market could be subject to tariffs while crossing the Channel, but this might not be obvious to the Italian firms).

Measuring the interconnections between countries and sectors is not an easy task. In fact, traditional trade statistics cannot provide an adequate representation of supply and demand linkages. In **EU-UK Global Value Chain trade and the indirect costs of Brexit** (Banca d'Italia, Occasional Papers No. 468), Rita Cappariello, Milan Damjanovic, Michele Mancini and Filippo Vergara Caffarelli exploit the World Input-Output Database (Timmer et al., 2015) to map production and consumption linkages between the two economies. By combining these data with new tools of analysis (Borin and Mancini, 2017), they provide a measure of cost of trade flows that takes into account the whole EU-UK GVCs structure.

The work assumes that the UK adopts the current Most-Favoured-Nation tariff schedule adopted by the EU, which is the worst case scenario for the EU-UK post Brexit relationship. Hence, it assumes that UK trade will be subject to the tariffs that the EU currently applies to countries with which there is no specific trade agreement. Accordingly, a tariff schedule for the EU and the UK is constructed at the sector and at the end-use levels.

With this schedule in hand, the paper assesses trade costs and their magnification due to GVCs. The analysis (based on the methodology proposed by Miroudot et al., 2013) estimates that the impact on producers is much higher for the UK, where total (domestic and foreign) manufacturing input costs would increase on average by around 0.9 p.p. In the EU the increase would be marginal (0.1 p.p.). This result is due to the specific links between the two regions: around one fifth of the total manufacturing inputs used by the UK come from the EU, while only 1.5 per cent of the total EU inputs are imported from the UK.

The indirect tariffs, i.e. tariffs induced by GVCs, are significant for the European but not for the UK importers. European producers perform processing stages in the UK to a larger extent than the reverse, i.e. UK producers shipping intermediate goods to EU countries and importing them back as final goods. Therefore the amplification of the tariff burden due to products crossing the Channel at different production stages weights more on EU producers: in UK exports to the EU the share of value added produced in the EU is around 9 per cent, while for EU exports to the UK the UK value added share is just 2 per cent.

As shown in Figure 1, the amount of indirect trade costs is positively correlated with the share of the back-and-forth trade between the two economies. In the longer run this could induce EU exporters to divert their exports of intermediate goods destined to the UK to other EU countries.

Conversely, the amount of direct tariffs would be larger for UK importers due to the composition of UK imports, skewed towards high-tariffs sectors, in particular food products and motor vehicle.
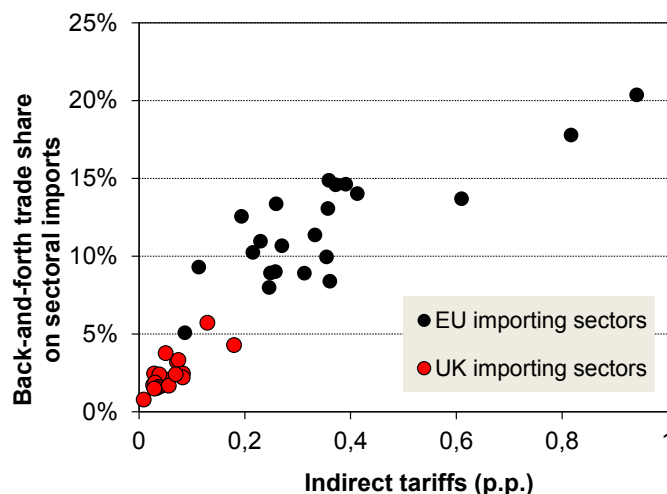
This latter effect prevails and as a result total tariffs, direct and indirect, would be higher on average for UK importers than for EU importers by around 2 p.p.

> *The likely introduction of tariff barriers on EU-UK trade in goods would hurt UK producers much more than European producers*

As to the export side, the work exploits the methodology developed in Muradov (2017) to show that given the density of intra-EU linkages and the sizeable share of indirect trade between the two regions, exporters in both the UK and the EU Member States face much higher costs when indirect trade is taken into account. In other words, the export path towards the destination matters, and indirect routes entail tariffs that are not perceived by the exporters (as intra-EU trade is free of tariffs), but account for around 20 per cent of the total costs.

Figure 1

Back and forth trade and indirect trade costs

Note: Authors' calculations on WIOD data. The figure plots, for each sector in both the EU and the UK, the indirect tariff and the share in bilateral imports of the value added originated in the other economy (a measure of back-and-forth trade).

— **Rita Cappariello (Bank of Italy)**

Michele Mancini (Bank of Italy)

Filippo Vergara Caffarelli (Bank of Italy)

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This issue was prepared by: