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A comment on: Globalization, trade imbalances and inequality

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1. Introduction

Figure 1 presents the evolution of manufacturing sector employment as a share of total nonfarm employment in the U.S. as well as the evolution of the trade balance in goods and services in the U.S. relative to Gross Domestic Product. As we can see, the share of manufacturing employment has been declining at a steady rate since 1950, starting with a value of more than 30% to end with a share of less than 10%. The trade balance instead experienced periods of increases and decreases, it experienced a trade surplus until the mid 70' s and a deficit after that. Looking at this figure with more than 70 years of data, the question one might ask is how are trade imbalances and employment in the manufacturing related?

2. Globalization, trade imbalances and inequality

Recent literature in international macroeconomics finds that in order to rationalize the observed evolution of net-exports one needs to include country specific demand shocks (shocks to the discount factor). Shocks to the discount factor in international macro models goes back to Stockman and Tesar (1995), and it has become more popular recently, see for instance Bai and Rìos-Rull (2015), Alessandria and Choi (2021), Alessandria et al. (2017), and Kehoe et al. (2018). Kehoe et al. (2018) and Alessandria et al. (2017) show that discount factor shocks are needed to explain the high savings rate in China. Reyes-Heroles (2017) finds that changes in trade costs across countries could also explain a large component of the observed trade imbalances that is not explained by discount factor shocks. Among this research, the paper by Kehoe et al. (2018) quantifies how the increase in the U.S. trade deficit after the 90' s has contributed to the aggregate decline in the manufacturing employment share. The study finds that the increase in the U.S. deficit explains 15% of the secular decline in manufacturing labor. Studies in international trade have mostly focused on understanding how trade openness drives the evolution of the share of manufacturing sector employment. The focus has been studying the episode after the year 2000 and not only trying to explain how trade might explain how manufacturing employment has fallen in the U.S. at the aggregate level, but also studying the distributional effects across sectors, and spatially distinct labor markets. Research has shown that part of the decline in employment in the manufacturing sector in the U.S. can be explained by China's trade expansion (China shock). Trade imbalances have not played a central role in most studies that look at the differential effects

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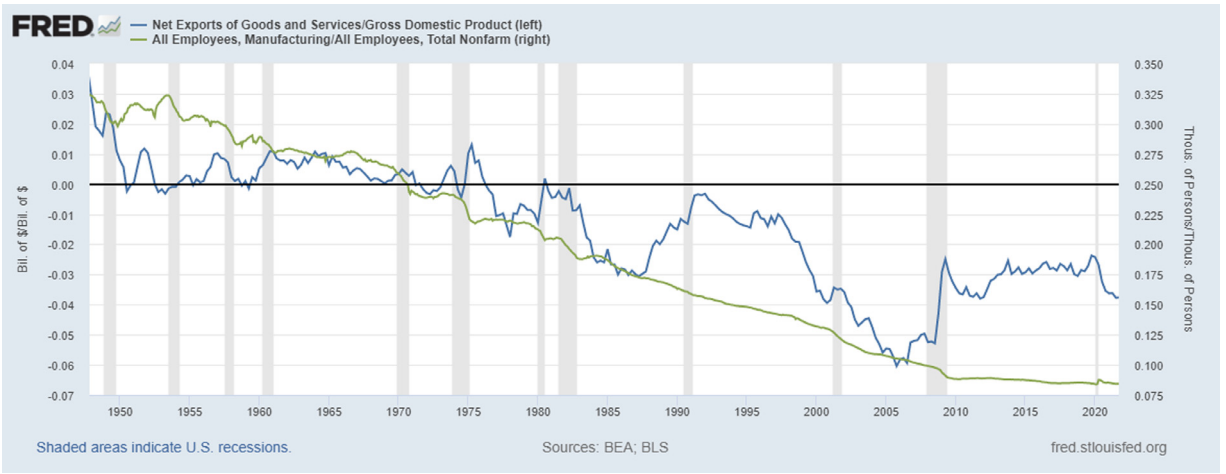

Fig. 1. *Note:* The figure presents the United States Net Exports of Goods and Services as a share of Gross Domestic Product (left axis) and the share of total nonfarm employees who are employed in the manufacturing sector in the United States (right axis) from 1947 to 2021.
Source: Data from the Bureau of Economic Analysis and the U.S. Bureau of Labor Statistics. See: https://fred.stlouisfed.org/graph/fredgraph.png?g=X0zs.

across regions. See Autor et al. (2013) and Caliendo and Parro (2022) for a recent review of the effects of the China shock in the U.S. economy.

Dix-Carneiro and Traiberman (2022) build on Reyes-Heroles (2017) and Dix-Carneiro et al. (2021) to study labor market adjustments to trade shocks in the presence of endogenous trade imbalances. The authors propose a quantitative model with several building blocks: labor market dynamics as in recent dynamic spatial and trade models (Artuc et al., 2010; Caliendo et al., 2019), a trade structure with endogenous trade imbalances driven by consumption smoothing, capital-skill complementarity and nonemployment. The main mechanism that the authors want to highlight is that trade imbalances can impact the labor market adjustment to trade shocks. The idea is that an increase in imports is not offset by a rise in exports in the presence of trade imbalances. In this sense, workers displaced from import competition may not be absorbed by comparative advantage industries. As a result, with unbalanced trade, labor market adjustment to trade shocks might be quantitatively different and with endogenous trade imbalance (due to consumption smoothing) this might exacerbate the effects even more. This is the main issue the paper wants to study. How do aggregate trade imbalances have distributional effects across workers, and sectors?

In the economy there are two types of representative families indexed by their skill type, $s = U, S$. Each family has a fixed mass of workers and a head of the family that has access to a one-period riskless bond and decides to borrow and lend over time to maximize the present discounted value of the utility of its representative family. Workers supply a unit of labor and obtain a wage that varies according to the sector the worker works. Workers are subject to idiosyncratic shocks and moving costs to switch sectors. With this setup, the economy has two "families". The head of each family decides how to consume intertemporally and given that families have different skill type and moving costs, the head of each family ends up deciding different paths of consumption since they have different streams of income. As a result, the paper presents an economic environment that can generate unequal outcomes across two groups. Yet, in order for the model to match the observed macro trade imbalances, heads of the family are subject to discount factor shocks. In this case, there are two discount factor shocks, one for $s = U, S$. With the presence of two demand shocks, the model is able to match the observed imbalances at the aggregate level and over time and in addition has the possibility of generating distributional effects across these two groups of agents. How do we discipline heterogeneous discount factors without data on borrowing and lending across skill groups? Why there is risk sharing withing groups but not across groups?

One of the findings on Kehoe et al. (2018) is that factors like initial conditions, differences in demographic and industrial structures across countries, and asymmetric productivity growth across sectors, are not important in explaining the behavior of the U.S. trade balance. According to the study, "the savings glut", modeled as a change in the discount factor is the only factor that can help explain the observed trade imbalances. The same happens in Dix-Carneiro and Traiberman (2022). To see this, consider the case of China expecting a 15 year productivity boom. As a result, China would like to borrow in order to start enjoying today part of the income they expect to obtain from the future. In turn China would like to run a deficit. Following the intuition in Dix-Carneiro and Traiberman (2022), China should produce less manufacturing goods, more Services and the U.S. and ROW should be willing to lend to China (potentially even having a surplus) and produce more manufacturing goods and less services. This behavior is clearly counterfactual, we have seen China experiencing a surplus, not a deficit, at the same time in which China has also been experiencing fast growth. The only way to make the model factual is to include wedges in the Euler equation (discount factor shocks) that make households have a pattern or intertemporal consumption such that China prefers to lend in the short-run and borrow in the long run. The issue is

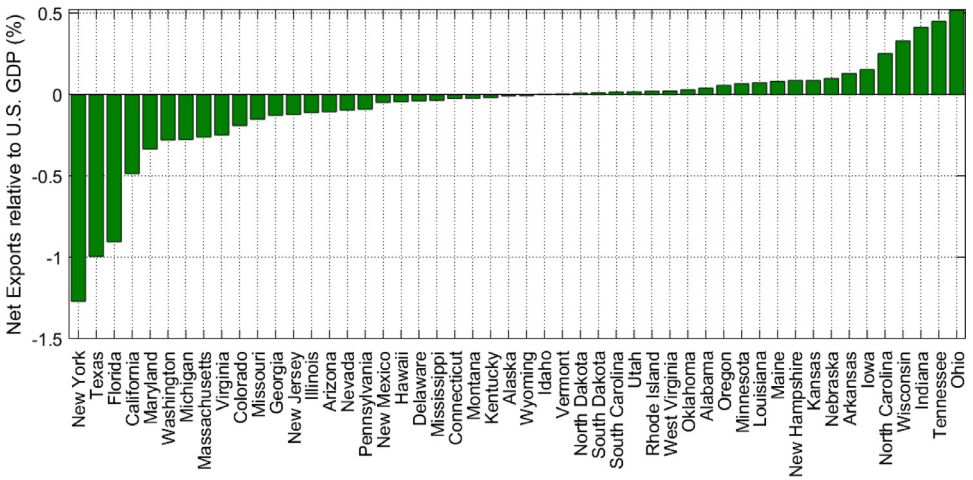

Fig. 2. Trade Balance across regions. Source: Own calculations using data from Commodity Flow Survey and WIOD, see Caliendo et al. (2019).

that if we rely on an exogenous wedges to explain the observed behavior in the pattern of consumption, in what sense the intertemporal borrowing and savings model is helping us understand how trade shocks and labor market outcomes interact?

3. The contribution

Dix-Carneiro and Traiberman (2022) are making a contribution to the literature by combining elements of the international macro literature and adding trade imbalances to a quantitative trade model. Doing this comes at the cost of not including some mechanisms that the empirical studies (reduced form and quantitative trade studies) show that matter to study the effects of trade shocks across workers. For example, one of the key findings in the literature is that trade openness generates differential effects on workers across sectors but also across regions. More generally, trade shocks generate distributional effects, as we learned from studies that look into the labor market effects of the China Shock. Maybe future work could build on and use some of the ideas from Dix-Carneiro and Traiberman (2022) and incorporate regions. Different states in the U.S. have differential exposure to import competition and in addition not all states in the U.S. are running a trade deficit. In fact, Fig. 2 shows the dispersion of imbalances across states in the U.S. in the year 2000.

The international trade literature has been trying to incorporate aggregate and regional trade imbalances in the analysis without compromising on the elements that quantitatively matter; like multi-countries, multi-sectors, sectoral-linkages and regions. One approach has been to assume that part of local income (in particular, the one generated by the rents of fixed local factors) is sent to a global portfolio. Then countries obtain a share of the global portfolio which is used by the local owners of the fixed factor to consume local goods. The income sent to the portfolio and the income received from the portfolio generates a system of transfers across countries (for example, see Caliendo et al., 2019; Caliendo et al., 2018; Fajgelbaum et al., 2018, and Fajgelbaum and Gaubert, 2020). Following the notation on Caliendo et al. (2019), consider that each region in a country has a mass of one of Renters (Landowners, owners of local structures), and obtain rents $\sum_{k=1}^{J} r_t^{ik} H^{ik}$ from renting fixed factor $H^{ik}$to industry k in region i, at rental price of r_t^{ik}at time t. After sending all her income to the global portfolio, the local rentiers then receive a constant share ι^i from the global portfolio, with $\sum_{n=1}^{N} \iota^n = 1$. As a result, imbalances in region i are given by $\sum_{k=1}^{J} r_t^{ik} H^{ik} - \iota^i \chi_t$, where $\chi_t = \sum_{i=1}^{N} \sum_{k=1}^{J} r_t^{ik} H^{ik}$ are the total revenues in the global portfolio and one can solve for ι^n in order to match cross-sectional imbalances in a given moment in time. In this way, ι^n is an exogenous share that determines how income is transferred across countries. Note what this formulation implies, if a country (like China) has a productivity boom, the increase in the demand of local factors increases the rents generated from the local factors and the economy sends more resources to the global portfolio and only receives a share of what it has sent. As a result, China will run a surplus, as it sends more rents than what it receives and the rest of the world a deficit. This formulation has no intertemporal considerations, and as a result it has several unanswered questions like, how are the shares of the portfolio allocated across countries? who is deciding on these shares? are the shares persistent over time? Surprisingly, it does present a factual representation on how imbalances have changed over time during the period of the China shock, at the aggregate and across states in the U.S.

4. Conclusion

Dix-Carneiro and Traiberman (2022) have done a magnificent job at trying to answer a very difficult question combining elements from the international macro and trade literatures. In this way, the paper seems to be a step forward on bridging the gap between the two literatures.

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