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The heterogeneous Impact of US Monetary Policy: Evidence from Native and Foreign-Born Workers

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Abstract

This paper explores the heterogeneous effects of expansionary monetary policy on native-born and foreign-born workers in the United States from January 2007 to January 2024. Using high frequency data and local projections, we find that foreign-born workers benefit more significantly from expansionary shocks, with greater improvements in employment-population ratios, unemployment rates and labor force compared to native-born workers. Our results emphasize the importance of considering foreign-born workers in the decision making process of the Federal Reserve.

Keywords: Monetary Policy, Foreign-born workers, Immigration, Local Projections

JEL Codes: E52, E58

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1. Introduction

The literature on the distributional effects of monetary policy on various income and racial groups has been brought to the forefront following the implementation of unconventional monetary policy measures by the United States (US) Federal Reserve (FED) (Coibion et al. (2017); Colciago et al. (2019)). However, the differential effect of monetary policy on workers with different birth places, i.e. foreign-born and native-born, has received no attention, even though immigration in the US has surged dramatically since the 1970s (OCDE (2023)).¹ This issue is even more relevant given that, by 2050, projections indicate that the foreign-born population will account for 19% of the total US population (Wessel and Peter (2018)).

In this context, the FED is increasingly concerned about the implications of monetary policy on foreign-born workers. As an illustration, the FOMC minutes from December 2016 noted that participants discussed the potential effects of changes in immigration policy on labor supply and economic growth. Hence, the FED has highlighted several times the critical role of foreign labor in the job market and on the economic landscape and ultimately, its relevance for monetary policy decision-making process (Orrenius et al. (2020), Duzhak (2023)). Against this background, this study aims to assess the effects of monetary policy shocks on native-born and foreign-born workers for the period 2007M01-2024M01. Specifically, the purpose is to estimate whether an accommodative monetary policy has differential effects on the labor market between these two groups. To reach this objective, we use monetary policy shocks measured by Jarociński (2024) and local projections à la Jordà (2005) to estimate the response of various employment indicators of foreign-born and native-born workers, that is, the employment-population ratio, the labor force participation rate and the unemployment rate. Our results show that an expansionary monetary policy

¹Specifically, according to U.S. Census data, less than 5% of the population was foreign-born in 1970, whereas by 2022, immigrants constituted 13.9% of the U.S. population.

shock, proxied by a Delphic forward guidance shock,² enhances job opportunities and labor force participation for foreign-born workers more than for native-born workers, highlighting the critical role of monetary policy in influencing immigration patterns and labor market dynamics. Hence, besides reinforcing the evidence of heterogeneous effects of monetary policy on different populations, our findings highlight the importance of considering the differential impact of monetary policy on foreign-born workers in the decision-making process of the FED.

This research stands at the crossroad of two strands of the literature. First, the literature looking at the distributional effects of monetary policy on various population groups. Coibion et al. (2017) show that an accommodative monetary policy tends to lower unemployment and boost earnings, particularly benefiting lower-income and minority groups. However, while these policies can stimulate economic activity, they also tend to inflate the value of financial assets, disproportionately benefiting higher-income individuals, typically non-minorities, who hold significant amounts of these assets (Colciago et al. (2019); Bartscher et al. (2022); Albert and Gómez-Fernández (2024)). The second strand of the literature analyzes the impact of monetary policy shocks on racial inequality. Studies by Carpenter and Rodgers III (2004) and Bennani (2021) suggest that racial minorities, particularly Black workers, experience greater reductions in unemployment rates from accommodative monetary policies compared to other racial groups. Hence, despite the extensive research on the distributional effects of monetary policy on different income and racial groups, the potential differential effect on native-born foreign-born workers is still not explored.

The study is organized as follows. Section 2 presents the data and the methodology while Section 3 shows the results. The final section concludes the analysis.

²A Delphic forward guidance is a statement about the future course of the appropriate stance of the policy rate (Campbell et al. (2012)).

2. Data and Methodology

2.1. Methodology

To estimate the response of foreign-born and native-born labor indicators to a monetary policy shock, we use local projections à la [Jordà \(2005\)](#) for the period 2007M01-2024Q1:

$$l_{(m+h)} - l_{(m-1)} = \alpha + \beta^h MP_m + \sum_{n=1}^6 \gamma^n l_{m-n} + \epsilon_m \quad (1)$$

where $l_{(m+h)} - l_{(m-1)}$ reflects the cumulative change in the difference of foreign-born and native-born labor indicator l between horizons $m + h$ and $m - 1$. m is the time index with monthly frequency and the horizon h takes values between 0 and 24. MP_m is the monetary policy shock, which we define more precisely below. We include 6 lags of the dependent variable to remove potential autocorrelation in the error term, ϵ_m . Impulse response functions (IRFs) are defined by the sequence of the coefficients of interest, the β^h , that measure by how much the difference of foreign-born and native-born labor indicators reacts to a monetary policy shock. Equation [1](#) is estimated using [Newey and West \(1994\)](#) standard errors to control for heteroskedasticity and serial correlation in the idiosyncratic error term.

2.2. Data

We use three main labor market outcomes: the employment-to-population ratio, the unemployment rate, and the labor force level. To capture the differential impact on the foreign-born and native-born populations, we compute three variables that measure the disparity in each of these labor market outcomes between these two groups. The analysis covers the period from January 2007 to January 2024, given data availability. All data are at a monthly frequency and are from the Federal Reserve Economic Data (FRED) provided by

the Federal Reserve Bank of St. Louis.³ Figures 2 in the Appendix show that the employment-population ratio for foreign-born workers has historically been higher than that for native-born workers, indicating a consistently positive differential favoring foreign-born individuals. This trend is interrupted only during the severe economic downturn caused by the COVID-19 pandemic, during which both ratios converged. In contrast, an analysis of the unemployment rate over time reveals no significant disparities between the two groups. This apparent contradiction can be explained by the labor force participation rate, which has consistently been higher for foreign-born workers. The lower panel of figure 2 which presents the evolution of the labor force in log-transformed levels, shows that even if native-born workers comprise a larger segment of the labor force, the gap between the number of foreign-born and native-born workers has been narrowing over time.

Second, we use Jarociński (2024)'s monetary policy shocks identified from high-frequency reactions of financial variables, namely, interest rates and stock prices, in a narrow time window around Federal Open Market Committee announcements.⁴ Specifically, the author exploits the fat tails of these data to identify the nature of the shocks: (i) a shock related to the current fed funds policy rate, (ii) an “Odyssean” shock reflecting a commitment to a future course of policy rate, (iii) a shock related to large scale asset purchase (LASP) announcements and (iv) a “Delphic” shock corresponding to a statement about the future course of policy rates.⁵ While the first shock, a standard monetary policy shock, is not relevant given the presence of the Zero Lower Bound during most of our sample period, the third shock has been found to have little effect on variables such as the corporate bond spreads and breakeven inflation rates. Hence, we keep the fourth shock, the Delphic forward guidance shock, in our baseline model since it has significant effects on financial variables and it corre-

³It is worth nothing that we log-transform the levels of labor forces to analyze the differences in the growth rates of people entering the labor force for each of the groups.

⁴The financial variables are the near-term fed funds rate, the 2- and 10-year Treasury yields while stock prices consist on the S&P500 stock index.

⁵For more details on the construction of these shocks, see Jarociński (2024).

sponds to the historical narrative of the Fed (Jarociński (2024)). Finally, since the Delphic forward guidance shock increases stock market gains, the breakeven inflation rates and financial markets' appetite for risk, we consider that it reflects an accommodative monetary policy shock.

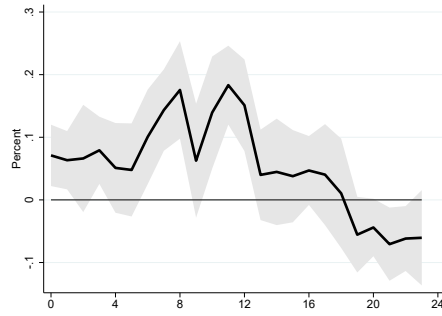
3. Empirical results

Figure 1 plots the IRFs graphing the effect of a Delphic forward guidance shock on foreign-native differences in employment-to-population ratios, unemployment rates, and labor forces. We find that a Delphic shock causes the foreign-born employment-to-population ratio to decrease more than the native-born employment-to-population ratio. More precisely, the difference between the two responses reaches 0.18 percentage points (pp) one year after the initial shock. We find a similar result with the differences in unemployment rates, since a Delphic shock generates a drop that reaches a maximum difference of 0.11 pp between the unemployment rates of the foreign-born and native-born workers one year after the shock. Finally, the lower panel of figure 2 shows that the difference between the foreign-born and native-born labor forces reacts positively to a Delphic shock, which suggests that the expansionary shock increases the labor force of the foreign-born more than that of the native-born population. This finding may be due to two facts: i) the expansionary shock encourages more inactive foreign-born people who are already residing in the US to join the labor force than the native-born; ii) the expansionary shock may be favoring immigration through new foreign workers who travel to the US given the better state of the economy and the greater job opportunities (Castelli (2018); Borjas (2019)). Interestingly, while these responses are statistically significant, they are all persistent over a 6-12 month horizon after the shock. Finally, to test the robustness of our findings, we re-estimate Eq. 1 using an alternative monetary policy shock corresponding to the Odyssean shock. Our results remain

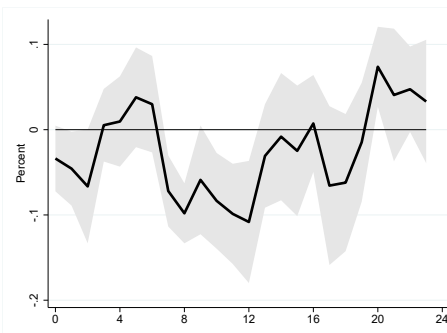
quantitatively and qualitatively similar to this shock.⁶

⁶To save some space, test results available upon request.

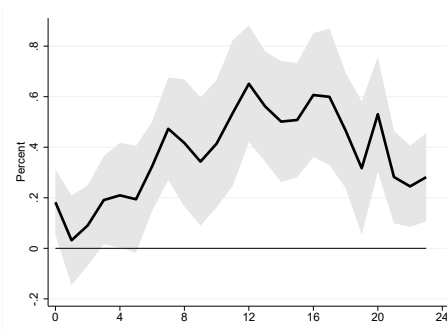
Figure 1: Effect of Delphic forward guidance shock on the differences in foreign-born and native-born labor indicators



(a) Effect on the differences in the employment-population ratios.



(b) Effect on the differences in the unemployment rates



(c) Effect on the differences in the labor forces

Note: Time (horizontal axis) is in months. Gray-shaded areas indicate 68% confidence bands.

4. Conclusions

In this paper, We assess the heterogeneous impact of an accommodative monetary policy shock on native-born and foreign-born workers. Our findings provide evidence that an expansionary monetary shock, proxied by a Delphic forward guidance shock, significantly enhances job opportunities for the foreign-born population more than for the native-born population. Specifically, the results indicate that, following the expansionary shock, foreign-born workers experience greater improvements in employment-population ratios and unemployment rates. Additionally, the labor force participation rate of the foreign-born population increases by a larger margin compared to that of the native-born population. These findings suggest that monetary policy has a differential effect on workers depending on their birth place and that it plays a crucial role in improving labor conditions for foreign-born population.

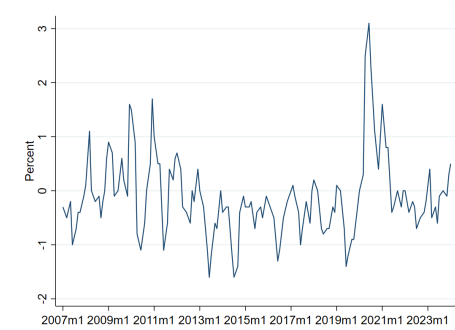
References

- Albert, J.F., Gómez-Fernández, N., 2024. The impact of monetary policy shocks on net worth and consumption across races in the united states. *Economic Systems* 48, 101178.
- Bartscher, A.K., Schularick, M., Kuhn, M., Wachtel, P., 2022. Monetary policy and racial inequality. *Brookings Papers on Economic Activity* 2022, 1–63.
- Bennani, H., 2021. Monetary policy and the racial unemployment rates in the us. *Economic Systems* .
- Borjas, G.J., 2019. Immigration and economic growth .
- Campbell, J.R., Evans, C.L., Fisher, J.D., Justiniano, A., Calomiris, C.W., Woodford, M., 2012. Macroeconomic effects of federal reserve forward guidance [with comments and discussion]. *Brookings papers on economic activity* , 1–80.

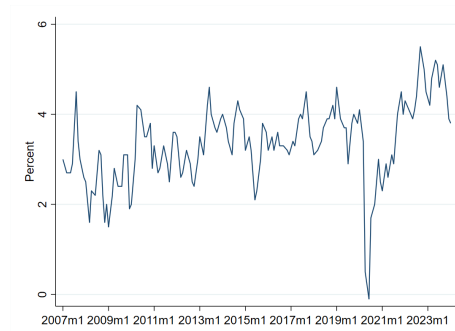
- Carpenter, S.B., Rodgers III, W.M., 2004. The disparate labor market impacts of monetary policy. *Journal of Policy Analysis and Management* 23, 813–830.
- Castelli, F., 2018. Drivers of migration: why do people move? *Journal of travel medicine* 25, tay040.
- Coibion, O., Gorodnichenko, Y., Kueng, L., Silvia, J., 2017. Innocent bystanders? monetary policy and inequality. *Journal of Monetary Economics* 88, 70–89.
- Colciago, A., Samarina, A., de Haan, J., 2019. Central bank policies and income and wealth inequality: A survey. *Journal of Economic Surveys* 33, 1199–1231.
- Duzhak, E.A., 2023. The role of immigration in us labor market tightness. *FRBSF Economic Letter* 2023, 1–6.
- Jarociński, M., 2024. Estimating the fed’s unconventional policy shocks. *Journal of Monetary Economics* .
- Jordà, Ò., 2005. Estimation and inference of impulse responses by local projections. *American economic review* 95, 161–182.
- Newey, W.K., West, K.D., 1994. Automatic lag selection in covariance matrix estimation. *The Review of Economic Studies* 61, 631–653.
- OCDE, P., 2023. International migration outlook 2023.” .
- Orrenius, P.M., Zavodny, M., Gullo, S., 2020. How does immigration fit into the future of the us labor market? .
- Wessel, D., Peter, G., 2018. The us in 2050 will be very different than it is today.

Appendix

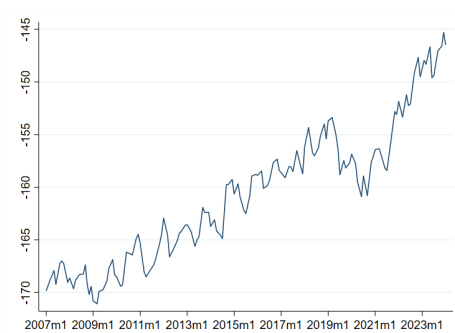
Figure 2: Difference in the labor indicators between foreign-born and native-born workers



(a) Difference in the unemployment rates between foreign-born and native-born workers (2007-2024)



(b) Difference in the employment-population ratios between foreign-born and native-born workers (2007-2024)



(c) Difference of the growth rate of labor forces between foreign-born and native-born workers (2007-2024)