Markup Polarization, Trade and Monetary Policy

Eunmi Ko* [1] and Jae Won Lee † [2,3]

[1]*Department of Economics, Rochester Institute of Technology*
[2]*Bank of Korea*
[3]*Department of Economics, Seoul National University*

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1 Introduction

The widening dispersion of firm-level markups has been well documented in a growing body of literature. While firms in the median and the lower end of the markup distribution have seen little or no change, firms in the upper tail have experienced substantial increases.[1] The widening dispersion in markups likely reflects underlying consumption inequality.[2] High price-cost markup products tend to appeal to richer consumers who seek specialized or differentiated goods.[3] By contrast, low-markup products often face intense price competition, particularly

*E-mail: emkgse@rit.edu
†E-mail: jwlee7@snu.ac.kr; jwlee7@bok.or.kr

[1]See Grullon et al. (2019); Autor et al. (2020); Covarrubias et al. (2020); De Loecker et al. (2020); Díez et al. (2021); Becker et al. (2024), for example.

[2]See Mongey and Waugh (2025) and earlier work of Jaimovich et al. (2020) as well as Aguiar and Bils (2015) and Bils and Klenow (2001).

[3]In marketing and business strategy, such positioning is often considered a reliable approach for incumbent firms aiming to expand and for new entrants seeking product differentiation. See Piore and Sabel (1984), Nunes et al. (2004) Holmes and Stevens (2014) and Berry et al. (2019) as well as Holmes and Stevens (2014).

from relatively cheap imports offering standardized quality. [4] In this environment, how does widening markup dispersion affect inflation dynamics and alter the effectiveness of monetary policy? What are the welfare costs of tariffs on cheap imported goods and commodities? And what is optimal monetary policy when such tariffs disproportionately affect goods consumed by poorer households?

To address these questions, it is necessary to employ a two-sector production model that incorporates imported goods. Ko (2025) developed such a model within a standard New Keynesian framework (Galí 2015) to investigate how the widening dispersion of markups influenced inflation dynamics in the United States over the period 1980–2016 (Figure 1). However, the paper does not account for the intense price competition that low-markup producers face from cheap imports, nor does it consider the displacement of workers in sectors exposed to such import competition.[5] Mongey and Waugh (2025) examined the effects of fiscal expansion on demand elasticities, allowing them to adjust endogenously. However, the analysis abstracts from nominal rigidities, limiting its ability to capture or explain inflation dynamics.[6] Moreover, the paper is inconsistent with empirical observations that only a small subset of firms cater to specialized preferences (Holmes and Stevens 2014) and that markup growth is driven primarily by firms in the far upper tail of the markup distribution (De Loecker et al. 2020 among many others). Meanwhile, Kalemli-Özcan et al. (2025) analyzed the effects of tariffs and tariff threats in the context of global production networks, incorporating full input-output linkages, heterogeneous nominal rigidities, and cross-country differences in monetary policy within a New Keynesian open economy framework. However, the paper does not account for non-homothetic preferences or dual labor markets, often referred to as the "China syndrome", overlooking both the heterogeneity of consumption baskets within a country and the tendency for poorer households to be employed in sectors that compete with cheap imports.[7]

2 A Potential Framework and Expected Contributions

Carvalho et al. (2021) incorporated intermediate goods, heterogeneity in price stickiness, and

[4] See Carluccio et al. (2023), Auer and Fischer (2010), Edmond et al. (2015) as well as Chen et al. (2024).

[5] See Autor et al. (2013) and Autor et al. (2021) for evidence on the impact of cheap imports on U.S. local labor markets and the persistence of these effects. Meanwhile, Keller and Utar (2023) demonstrated that the labor market consequences of import competition can vary across countries due to differences in industrial structure. Waugh (2023) further examined the effects of cheap imports through shifts in labor demand and the presence of incomplete consumption insurance.

[6] The paper emphasizes the steeper super-elasticity of poor households and generates more volatile low markups, which is commonly referred to as "cheapflation." While the model predicts a decline in the labor share during a fiscal expansion, participants at the 2025 NBER SI EFG meeting noted that such a pattern was not observed during the 2022 inflation episode.

[7] For example, Auer et al. (2023) find that higher-income households exhibit lower price elasticity than lower-income households. As Kalemli-Özcan et al. (2025) do not incorporate heterogeneity in demand elasticities and formulate nominal rigidities using adjustment costs (Rotemberg 1982), their framework cannot account for the micro-level price stickiness and markup heterogeneity documented by Bils and Klenow (2004), nor the macroeconomic implications of rising firm-level markups emphasized by De Loecker et al. (2020).

Figure 1: Ko (2025) at a glance: lack of cheap imports

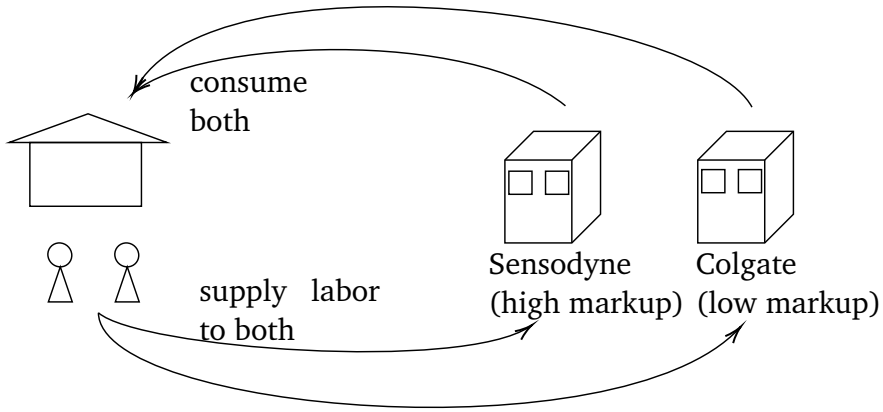
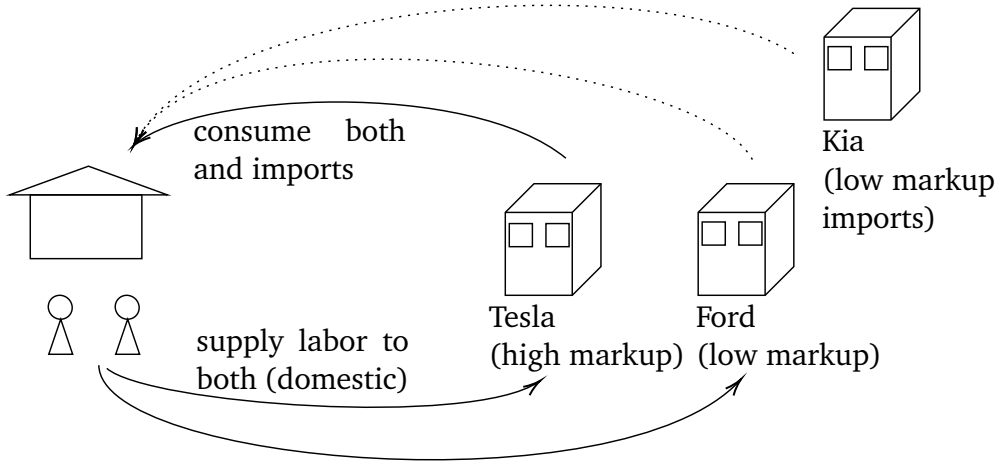
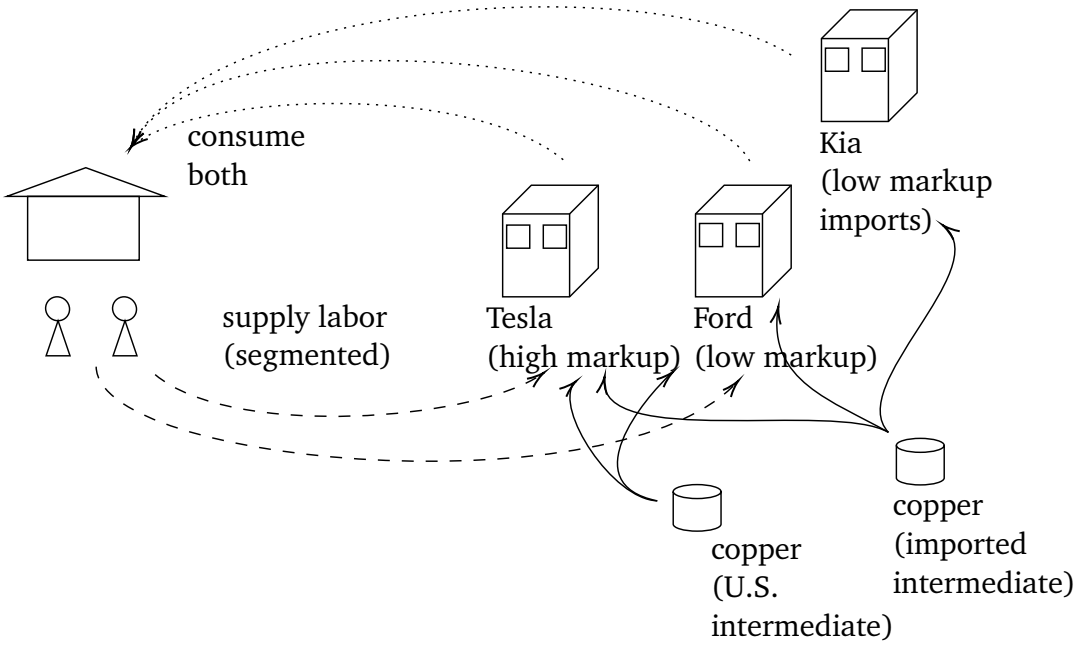


Figure 2: Simple extension of Ko (2025) without production network



segmented sectoral labor markets into a textbook New Keynesian multi-sector model with Calvo-type price adjustments, in order to generate volatile sectoral inflation responses to idiosyncratic shocks. Their framework, featuring sectoral labor markets with partially lagged price adjustments occurring at different speeds, provides a useful foundation for analyzing structural shifts in labor demand induced by cheap imports, as well as for assessing the distributional impacts of tariffs. Rubbo (2023) also employs a multi-sector model with input-output networks and generates the divine coincidence despite the presence of real rigidities. Her framework is likewise useful for evaluating the welfare costs of tariffs and analyzing optimal monetary policy, especially when extended to incorporate global production networks.

Figure 3: Markup dispersion in Carvalho et al. (2021)



By combining the idea of markup polarization from Ko (2025) with the role of cheap imports, the first extension introduces a simple setting with one additional sector that distributes low-markup imported goods (Figure 2). This extension aims to address the following three questions: (1) How does widening markup dispersion affect inflation dynamics and alter the effectiveness of monetary policy? (2) What are the welfare costs of tariffs on relatively cheap imported goods and commodities? (3) What is the optimal monetary policy in the presence of such tariffs, particularly when these goods are primarily consumed by poorer households?

The final goal of this project is to address the same set of questions within a more realistic framework building on the model of Carvalho et al. (2021), which includes imported intermediate goods and incorporates segmented sectoral labor markets. Particularly important is the question of how monetary policy should respond to tariffs on imported intermediates such as copper, taking into account changes in inflation, output gap, and distributional effects. A growing body of literature including Kalemli-Özcan et al. (2025) and Bianchi and Coulibaly (2025) suggests that monetary easing may enhance welfare, as tariffs distort production.[8] However, tariffs on intermediate goods are likely to have broader effects on aggregate inflation. As a result, such tariff policies, or even just tariff threats, may lead central banks to adopt different strategies in order to keep inflation expectations well anchored around the target.

[8]There have been contrasting analyses regarding the effects of tariffs, including Alessandria et al. (2025) and Rodríguez-Clare et al. (2025).

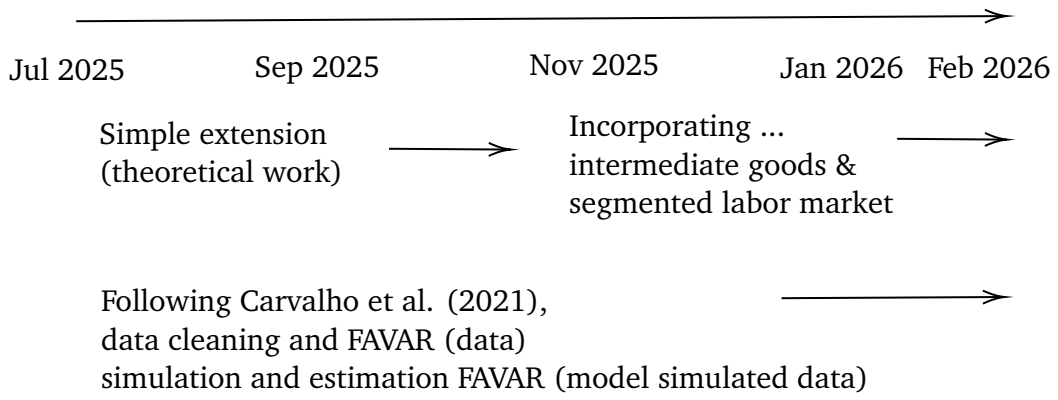
3 Data and Methodology

Our analysis requires time-series input-output data to compute industry-level markups over time. Several research methods are currently being developed to identify the effects of tariffs, including the approach proposed by Minton and Somale (2025). According to their methodology, monthly personal consumption expenditure (PCE) price data published by the Bureau of Economic Analysis (BEA) can be leveraged for this purpose. In addition, the BEA provides Input-Output (IO) tables that classify PCE by final goods and services industries, as well as by the region of origin of these goods and services.

The BEA's PCE price data are reported at consumer prices, whereas PCE expenditures in the IO tables are valued at producer prices. These datasets can be merged using the PCE bridge data provided by the BEA. This integration aligns well with our objective of estimating changes in markups over time by consumption category, based on the wedge between producer and consumer prices. Furthermore, by incorporating the real-time tariff effects reported by Minton and Somale (2025), the model's parameters can be disciplined to better match empirical evidence.

4 Timeline

Figure 4: Timeline until Feb 2026



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