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# Competition and Inflation – Note by Natalie Chen

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# *Competition and Inflation*

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Although the recent surge in global inflation is predominantly driven by external shocks including pandemic-related global value chain disruptions and the conflict between Ukraine and Russia, it is well established that competition matters for inflation. This note addresses how competition affects inflation and emphasizes two main aspects.

First, instead of discussing how domestic competition affects inflation, we focus on how international competition impacts domestic competition and in turn prices and/or inflation through international trade. Specifically, we emphasize how import competition (in particular from low-wage countries), import tariffs, and changes in exchange rates affect domestic competition and therefore prices and/or inflation. We also provide supporting evidence based on empirical studies that investigate how international competition affects domestic prices or domestic inflation.

Second, while inflation is a macroeconomic concept and is measured by the growth rate of the CPI, we emphasize that there are advantages in studying disaggregated prices (at the product or firm level). First of all, micro prices can inform us about aggregate prices and aggregate inflation. In addition, in understanding how competition affects aggregate prices or inflation, disaggregated prices enable us to identify mechanisms (e.g., quality upgrading) that cannot be investigated using aggregate data.

In an imperfectly competitive environment, prices are a markup over marginal costs. Understanding if a change in prices is driven by a change in markups or by a change in marginal costs is important as a change in markups reflects a change in market power and hence in competition, while a change in costs instead captures a change in efficiency. Unfortunately, markups and marginal costs are not observed in the data. To address this issue, researchers have relied on disaggregated data (across firms and products) to estimate markups (De Loecker and Warzynski, 2012).

## 1. Import Competition

Import competition from low-wage countries can affect the domestic CPI in three different ways. First, as imported final goods are cheaper, the lower import prices reduce the domestic CPI (i.e., an imported inflation effect). Second, as imported intermediate inputs are cheaper, domestic firms can produce at a lower cost and reduce their prices (i.e., an efficiency effect).[1] Finally, imports can have a pro-competitive effect such that domestic firms reduce markups in response to the increase in competition (i.e., a competition effect).

There is ample evidence that trade has pro-competitive effects. Using industry-level data on inflation rates across EU countries, Chen, Imbs, and Scott (2009) show that trade openness exerts a competitive effect with prices and markups falling and productivity rising (or costs falling). More recently, using firm-level data for French manufacturing firms, Carluccio, Gautier, and Guilloux-Nefussi (2022) show that imports of consumption goods from low-wage countries lower domestic producer price inflation. This finding can be

[1] In both cases, the pass-through goes from import prices to domestic prices. According to Gopinath (2016), the import component of the CPI varies between 10% and 41% across countries (for instance it is equal to 30% for the UK).

interpreted as a competition effect as imported intermediate inputs are excluded from the analysis.

Other recent papers include Amiti, Dai, Feenstra, and Romalis (2020) who show that China's export expansion following its entry to the WTO reduced US manufacturing prices. Auer and Fischer (2010) and Auer, Degen, and Fischer (2013) find that import competition from low-wage countries has reduced inflation in the US and the EU. Feenstra and Weinstein (2018) show that between 1992 and 2005, US import shares have increased and the markups of US firms have fallen. Also see, among others, Cardoso and Soares Esteves (2008) for Portugal, Mac Coille (2008) for the UK, and Kamin, Marazzi, and Schindler (2006) on the effect of China's exports on global import prices and inflation.

## 2. Import Tariffs

Similarly to an increase in import competition, a fall in import tariffs makes imports cheaper. The pass-through therefore goes from tariffs to import prices, and then to domestic prices.

Evidence on the pass-through of tariff changes into import prices (for both final and intermediate goods) can be found in recent papers studying the US-China trade war. Amiti, Redding, and Weinstein (2019) and Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020) estimate a complete pass-through of tariff increases into US import prices. Similarly, Cavallo, Gopinath, Neiman, and Tang (2021) find that US tariffs were almost fully passed through to the prices paid by US importers. But they also find that the impact of tariffs on consumer prices was more mixed. Only some products have seen sharp increases in prices, suggesting that retail margins have fallen. See, also, Flaaen and Pierce (2019), and Flaaen, Hortaçsu, and Tintelnot (2020).

## 3. Changes in Exchange Rates

Another way international competition can affect domestic prices and inflation is through changes in exchange rates. The literature on exchange rate pass-through investigates how import prices, that feed into domestic prices, respond to changes in exchange rates. The pass-through therefore goes from exchange rates to import prices, and then to domestic prices.

Depending on the magnitude of pass-through, an appreciation of domestic currency affects domestic prices and domestic inflation. As the appreciation makes imports cheaper, the domestic economy imports less inflation (as final goods are cheaper), and firms can produce at a lower cost (as intermediate inputs are cheaper). There is no evidence, however, on how exchange rate changes affect the markups of domestic producers on the domestic market, but there is evidence showing that exchange rate changes induce exporters to adjust markups when they export to foreign markets (a "pricing-to-market" behavior).

Empirical research typically finds that the pass-through of exchange rate changes into import prices is low. Recent contributions have demonstrated that pass-through is in fact much larger once we account for the fact that global trade is predominantly invoiced in US dollars. In other words, pass-through is much larger once we allow firms to react to changes in the US dollar exchange rate as opposed to changes in the bilateral exchange rate.

Recent papers studying how exchange rate changes impact import price inflation include Amiti, Itskhoki, and Konings (2014), Berman, Martin, and Mayer (2012), Gopinath (2016), and Gopinath and Rigobon (2008). Auer, Burstein, and Lein (2021) further extend the

analysis to domestic CPI inflation and find that both import and consumer prices fell in response to the Swiss franc appreciation of 2015. Chen, Chung, and Novy (2022), Gopinath, Boz, Casas, Diez, Gourinchas, and Plagborg Møller (2020), and Gopinath, Itskhoki, and Rigobon (2010) study exchange rate pass-through into import prices while accounting for the currency of invoicing. For evidence on pricing-to-market, see Krugman (1987) and Knetter (1989), or more recently Corsetti, Crowley, and Han (2022).

**Disaggregated Price Data**

Another point we want to emphasize is that the use of disaggregated price data can help us to identify other mechanisms explaining how international competition affects domestic inflation. While the use of macroeconomic data shows that on average competition reduces aggregate prices and inflation, the use of disaggregated micro price data shows that in some cases, competition can also increase prices.

Following an episode of trade liberalization, recent research demonstrates that domestic firms may escape the increase in competition by upgrading the quality of the goods they produce. As higher quality goods have higher marginal costs (as producing a higher quality requires higher quality and therefore more expensive inputs) and higher markups, they have higher prices (Chen and Juvenal, 2022). By inducing quality upgrading, trade liberalization may therefore result in higher prices (although the final effect on prices depends on the relative movements in markups versus costs if firms can source cheaper inputs from abroad following the trade liberalization).

Several papers provide evidence that trade liberalization induces firms to upgrade the quality of the goods they produce. Amiti and Khandelwal (2013) show that lower import tariffs are associated with quality upgrading. Medina (2022) shows that import competition arising from China's accession to the WTO substantially increased Peruvian firms' high-quality export shares. Piveteau and Smagghue (2019) find evidence that French firms upgrade the quality of their exports when low-cost competition intensifies in the destination market. Finally, De Loecker, Goldberg, Khandelwal, and Pavcnik (2016) find that India's trade liberalization has lowered factory-gate prices, but the price declines were small relative to the declines in marginal costs. The reason for this incomplete cost pass-through to prices is that firms offset their reductions in marginal costs by raising markups.

## 4. Conclusion

The aim of this note is to discuss how international competition affects domestic prices and inflation. Evidence from the literature suggests that in order to foster international competition, which in turn reduces domestic prices and inflation, it is important to be open to international trade, to reduce import tariffs (or any other type of trade friction), and to acknowledge that exchange rate changes also affect domestic prices and inflation.

The use of disaggregated price data can provide further insights into how competition affects prices and inflation. At the microeconomic level, understanding the drivers of price changes (i.e., markups versus costs) is crucial to assess the effects of competition on inflation.

## References

Amiti, M., Dai, M., Feenstra, R.C., Romalis, J., 2020. How did China's WTO entry affect US prices? Journal of International Economics 126, 103339.

Amiti, M., Itskhoki, O., Konings, J., 2014. Importers, exporters, and exchange rate disconnect. American Economic Review 104 (7), 1942--1978.

Amiti, M., Khandelwal, A.K., 2013. Import competition and quality upgrading. Review of Economics and Statistics 95 (2), 476--490.

Amiti, M., Redding, S.J., Weinstein, D.E., 2019. The impact of the 2018 tariffs on prices and welfare. Journal of Economic Perspectives 33 (4), 187--210.

Auer, R., Burstein, A., Lein, S.M., 2021. Exchange rates and prices: evidence from the 2015 Swiss Franc appreciation. American Economic Review 111 (2), 652--686.

Auer, R.A., Degen, K., Fischer, A.M., 2013. Low-wage import competition, inflationary pressure, and industry dynamics in Europe. European Economic Review 59, 141--166.

Auer, R., Fischer, A.M., 2010. The effect of low-wage import competition on US inflationary pressure. Journal of Monetary Economics 57 (4), 491--503.

Berman, N., Martin, P., Mayer, T., 2012. How do different exporters react to exchange rate changes? Quarterly Journal of Economics 127 (1), 437--492.

Cardoso, F., Soares Esteves, P., 2008. The effects of low-cost countries on Portuguese manufacturing import prices. Banco de Portugal Working Paper 4.

Carluccio, J., Gautier, E., Guilloux-Nefussi, S., 2022. Dissecting the impact of imports from low-wage countries on inflation, mimeo.

Cavallo, A., Gopinath, G., Neiman, B., Tang, J., 2021. Tariff passthrough at the border and at the store: evidence from US trade policy. American Economic Review: Insights 3 (1), 19--34.

Chen, N., Chung, W., Novy, D., 2022. Vehicle currency pricing and exchange rate pass-through. Journal of the European Economic Association 20 (1), 312--351.

Chen, N., Imbs, J., Scott, A., 2009. The dynamics of trade and competition. Journal of International Economics 77 (1), 50--62.

Chen, N., Juvenal, L., 2022. Markups, quality, and trade costs. Journal of International Economics 137, 103627.

Corsetti, G., Crowley, M.A., Han, L., 2022. Invoicing and the dynamics of pricing-to-market: evidence from UK export prices around the Brexit referendum. Journal of International Economics 135, 103570.

De Loecker, J., Goldberg, P.K., Khandelwal, A.K., Pavcnik, N., 2016. Prices, markups, and trade reform. Econometrica 84 (2), 445--510.

De Loecker, J., Warzynski, F., 2012. Markups and firm-level export status. American Economic Review 102 (6), 2437--2471.

Fajgelbaum, P.D., Goldberg, P.K., Kennedy, P.J., Khandelwal, A., 2020. The return to protectionism. Quarterly Journal of Economics 135 (1), 1--55.

Feenstra, R.C., Weinstein, D.E., 2018. Globalization, markups, and US welfare. Journal of Political Economy 125 (4), 1040--1074.

Flaaen, A., Hortaçsu, A., Tintelnot, F., 2020. The production relocation and price effects of US trade policy: the case of washing machines. American Economic Review 110 (7), 2103--2127.

Flaaen, A., Pierce, J., 2019. Disentangling the effects of the 2018--2019 tariffs on a globally connected US manufacturing sector. Finance and Economics Discussion Series 2019--086. Board of Governors of the Federal Reserve System.

Gopinath, G., 2016. The international price system. Jackson Hole Symposium Proceedings.

Gopinath, G., Boz, E., Casas, C., Díez, F.J., Gourinchas, P.-O., Plagborg-Møller, M., 2020. Dominant currency paradigm. American Economic Review 110 (3), 677--719.

Gopinath, G., Itskhoki, O., Rigobon, R., 2010. Currency choice and exchange rate pass-through. American Economic Review 100 (1), 304--336.

Gopinath, G., Rigobon, R., 2008. Sticky borders. Quarterly Journal of Economics 123 (2), 531--575.

Kamin, S.B., Marazzi, M., Schindler, J.W., 2006. The impact of Chinese exports on global import prices. Review of International Economics 14 (2), 179--201.

Knetter, M.M., 1989. Price discrimination by US and German exporters. American Economic Review 79 (1), 198--210.

Krugman, P.R., 1987. Pricing to market when the exchange rate changes, in: Arndt, S.W., Richardson, J.D. (Eds), Real-Financial Linkages Among Open Economies. MIT Press, Cambridge, pp. 49--70.

Mac Coille, C., 2008. The impact of low-cost economies on UK import prices. Quarterly Bulletin, Bank of England.

Medina, P., 2022. Import competition, quality upgrading and exporting: evidence from the Peruvian apparel industry. Review of Economics and Statistics, forthcoming.

Piveteau, P., Smagghue, G., 2019. Estimating firm product quality using trade data. Journal of International Economics 118, 217--232.