

Was globalization just a little thing in the process of inflation?



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Why is inflation rising now? To answer to this question surely requires an answer to the question of why inflation was so low in almost all countries after the 1980s. We find it difficult to explain that without acknowledging the role of globalization even though most empirical analyses have found its role only marginal. This finding probably reflects problems in measuring globalization, e.g. ignoring contestable market effects. Also some nonlinearities in basic behavioral relationships may explain the reported results. Our analysis with a set of alternative measures suggests that the role of globalization is much more than a marginal phenomenon. This is consistent with some casual observations with the data: the development of the dispersion of cross-country inflation rates and the behavior of tradeable and non-tradeable prices over time.

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Why is globalization so important?

In 2021, most countries experienced a sharp increase in inflation which shows no signs of dying soon. To a large extent this surge was unexpected, at least if we rely on various surveys on inflation expectations, not to speak of inflation expectations derived from asset prices. These developments questioned the standard ways of analyzing inflation and specifying the respective behavioral equations. In particular, this is true with inflation expectations, which for more than fifty years have been the key ingredient of the Phillips curve-based interpretation of inflation. In a recent paper, Jeremy Rudd (2021) criticized the current state of affairs and pointed out that many observed regularities are not consistent with this standard specification. Moreover, he pointed out that many behavioral patterns are state-dependent, which means that the transmission of costs may well depend on the specific regime of excess demand. Similar points have been put forward in the recent BIS annual report (BIS 2022).

In the traditional analysis of inflation, globalization has a very limited role. The key variables, inflation, inflation expectations and the output gap/real marginal costs are all country specific. Oil prices represent (occasionally) the only “global variable”. Recently, however, there has been a growing interest in assessing the eventual globalization effects. Here, we can mention the studies of Pain et al. (2008), ECB (2021) and the European Parliament (2015). The results of all these studies have been rather diverse and one cannot really find one which would have provided strong evidence on the behalf of the idea that globalization is of prime importance in terms of inflation. Thus, also the abovementioned Pain et al. (2008) and ECB (2021) studies end up with rather marginal globalization-induced inflation effects. Perhaps the strongest effects come out in the study of Amiti et al. (2018), which focusses on the effect China’s WTO membership on US prices. A useful source is also Bernhofe et al. (2013) which studies the effects of container revolution on trade. According to their study, the effects of this technical change are much larger than the effects of free trade agreements or the GATT. There are many reasons for these conflicting results (e.g. missing role of contestable market effects, see e.g. Auer (2017)), which obviously represent a big challenge for empirical analysis.

In the immediate post WWII period individual countries’ supply was largely constrained by the productive capacity of the domestic economy. That is because of the following reasons:

- the level of foreign trade was smaller than nowadays
- there was important trade barriers
- transportation costs were significantly larger than nowadays
- there were limited possibilities to the FDI
- in isolated countries different monopolies, in both product and labor markets, had much more power
- information technology was just starting its huge development
- transaction and payment systems were less developed

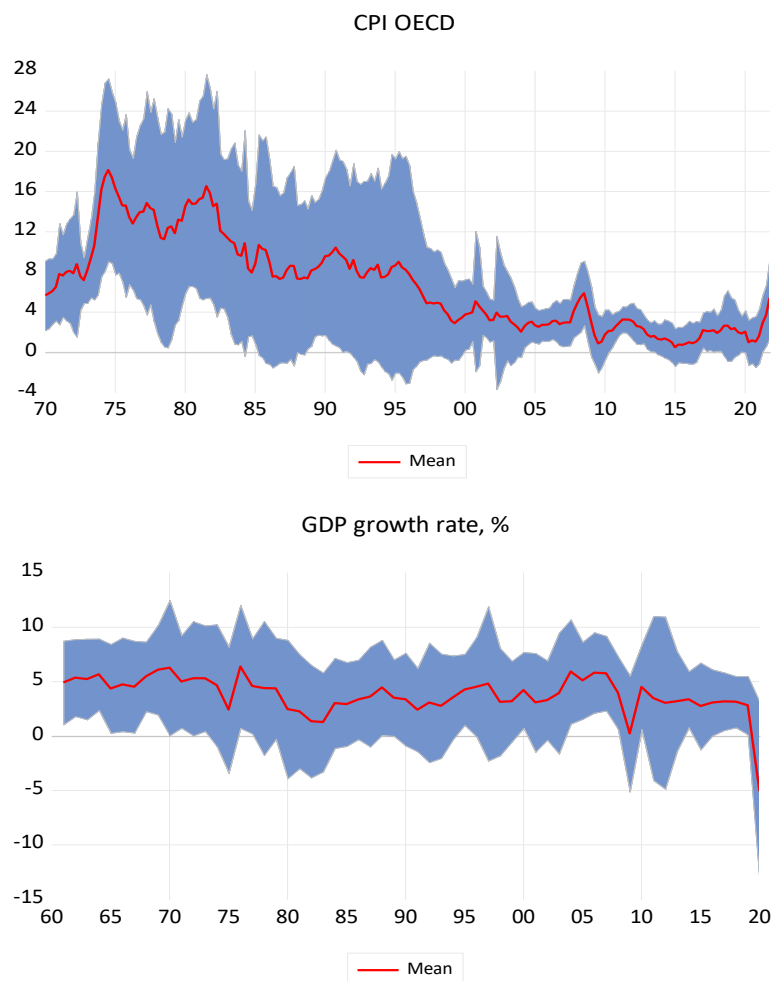
A big change took place - starting in the early 1980s - when China abandoned the old-style communist economic system and provided seemingly an unlimited amount of cheap labor for domestic and international entrepreneurs. In Charles Goodhart’s (2020) words, China’s wage rate had become some sort of labor supply curve for the global economy. In early 1990, the Eastern European countries also followed suit, further pushing the capacity frontier further away from previous single country levels.

New data suggest that the role of globalization is more important than what is commonly assumed

We have analyzed the globalization effects in several different ways. First we have looked at the dispersion of inflation and output growth rates of different set of countries including the whole World, USA, OECD, Euro area and Finland. Besides that, we have looked the relative prices for different countries. The idea in these analyses is quite simple: globalization should make time paths of inflation more similar because all countries would in the end face the same highly elastic global supply curve instead of facing country-specific supply and capacity constraints. As for relative prices, we would expect that inflation rates for the tradeable goods behave quite differently from the non-tradeable goods (mainly services) because the latter do not benefit from globalization effects.

The data are very much consistent with the globalization interpretation. The dispersion of inflation (Figure 1) has come down dramatically in the late 1990s and stayed very small after that (until the beginning of the Covid-19 crisis). By contrast the dispersion of output growth stayed the same for the whole 1960-2020 period. The time of events fits very well with different globalization indicators such as goods delivered by postal services, goods ordered and paid by electric payment methods, goods ordered by the Internet, the KOF index of globalization, the FDI data and the export market share of China. A remarkable feature in the indicators is that they all show that the big change in globalization took place just in the 1990s and this is also consistent with the development of tariffs, freight costs and so on.

Figure 1: Dispersion (± 1 *SD) of inflation and GDP growth rates in the OECD countries



With the relative prices, we find that until the end of 1980 inflation rates for different commodities were very similar but after that a growing difference emerged between tradeable and non-tradeable commodities (Figure 2). Similar pattern appears with durable and non-durable goods (Figure 3), which obviously reflects the same mechanism.

Figure 2: Relative prices ($\pm 1 \cdot SD$) between goods and services in the World panel data

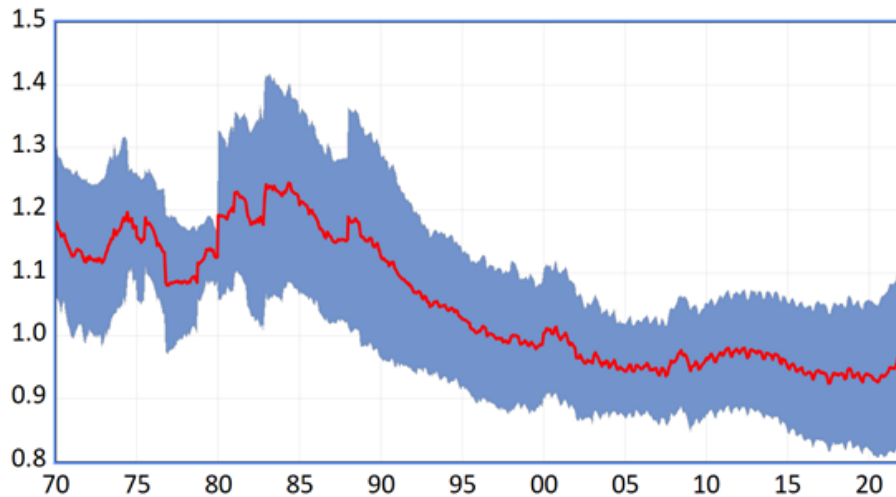
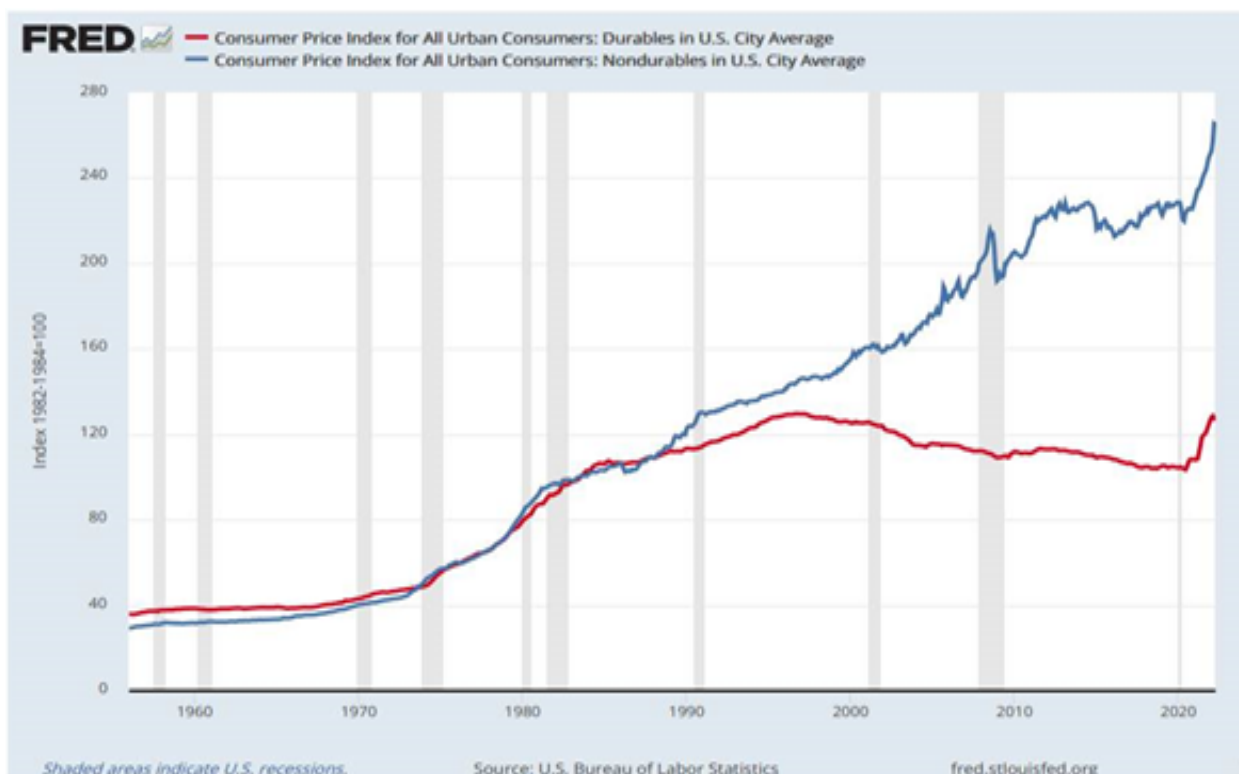


Figure 3: Relative prices of durables and nondurables in the US



We also estimated several inflation and wage growth equations to see how our globalization proxies perform using data from Finland, Euro area, USA and panel data for all World countries. The results were quite clear-cut: increased globalization always depressed the inflation rate in a nonmarginal way. In the same way as Kolaches and Moessner (2021), we found that the pass-through from wages to prices has become much smaller over time (upper part in Table 1). The globalization effects also showed up in wage growth, even though we controlled things like the labor union participation rate.

As for wages, the interesting thing was the observation that the reaction of wages to inflation has also been far from constant being very much different in low and high inflation regimes (cf. Table 1). Thus, in a low inflation regime, the effect is very small – even insignificant – while in a high inflation regime it comes close to one. The critical (threshold) values were something like 3-4 per cent suggesting that in the past low inflation regime there were no elements of wage-price spiral opposite to the pre-1990s experiences.

Table 1: Regime changes in some key parameters of inflation – wage growth relationship

Pass-through coefficients: effect of wage growth on inflation	1960-1998 sample	1999-2020 sample
Finland	0.789*	0.599*
Euro area	0.643*	0.571*
USA	1.004*	0.647*
World (panel data)	0.426*	0.263*
Reaction of wage growth to lagged inflation in a nonlinear (threshold) wage equation	Threshold (th) value of inflation in the wage equation	Coefficients of lagged inflation below and above the threshold
Finland	2.72 %	below th 0.001 above th 0.705*
Euro area	3.87 %	below th 0.391* above th 0.884*
USA	4.37 %	below th 0.101 above th 0.319*

First four lines illustrate the effect of wages on inflation while the last three lines illustrate the effect of past inflation on wage growth in a nonlinear (threshold) wage equation where the size of inflation response depends on the rate of inflation. The data cover 1964q1-2021q4. * indicates statistical significance at the 5 per cent level. The parameters are derived from inflation and wage growth equations which include the output gap, the unionization rate and (when necessary) fixed country and time effects. For details, see Hukkinen & Viren (2022).

Why is it so difficult to identify the globalization effects?

Most analyses on globalization effects have focused on realized trade flows and because these flows have not increased in an excessive way, particularly after 2007, one might end up with the conclusion that globalization effects on inflation are only of marginal importance. The problem is that trade flows are probably a poor indicator of all features and consequences of globalization, ignoring e.g. contestable market effects, capacity constraints, transportation costs, payment costs, tariffs, changes in labor market institutions and the “IT revolution”. Obviously, it is very difficult to consider all of these elements but our study suggests that incorporating some of these produces much bigger effects, which seem also to match the more recent data. ■

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