European Parliament

DIRECTORATE GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

Is Globalization Reducing the Ability of Central Banks to Control Inflation? Impacts on Prices and Wages

IN-DEPTH ANALYSIS

Abstract

Inflation rates, as measured by either consumer or producer price indices, have been on the decline in all advanced economies over the past 20 years. Economic globalization, which has also been on a sustained upward path, offers clues for inflationary performance globally. Our central finding from this paper is that globalization has made it more difficult for central banks to influence domestic prices, as production process continue to counteract banks' demand for inflation; however, the scale of the effect of globalization remains small and banks still have several powerful tools at their disposal. Central banks also may underestimate their power in influencing commodity prices, especially if they are in advanced economies. Finally, the fragmentation of global labour markets means that wage-setting still remains a nationally-determined outcome.

IP/A/ECON/2015-07 November 2015

PE 563.476 EN

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

AUTHOR

Christopher HARTWELL/ Center for Social and Economic Research (CASE)

RESPONSIBLE ADMINISTRATOR

Dario PATERNOSTER
Policy Department A: Economic and Scientific Policy
European Parliament
B-1047 Brussels
E-mail: Poldep-Economy-Science@ep.europa.eu

LINGUISTIC VERSIONS

Original: EN

ABOUT THE EDITOR

To contact the Policy Department or to subscribe to its monthly newsletter please write to: Poldep-Economy-Science@ep.europa.eu

Manuscript completed in November 2015

This document is available on the Internet at:
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EXECUTIVE SUMMARY

- Inflation rates, as measured by either consumer or producer price indices, have been on the decline in all advanced economies over the past 20 years. But finding the actual drivers of inflationary outcomes in developed countries post-crisis requires looking beyond national boundaries. In particular, economic globalization, which has also been on a sustained upward path, offers clues for inflationary performance globally.
- Globalization is anticipated to dampen inflationary outcomes via several channels, including increasing competitive pressures to hold down price mark-ups and by creating a disciplining mechanism for central banks.
- Evidence from the economics literature shows that globalization has indeed had a moderating influence on inflation, although it is quite small and the impact differs across countries.
- Most research on the relationship between globalization and inflation has been in advanced countries, with relatively little on emerging markets.
- Economic evidence shows that there has been a decline in the sensitivity of inflation to domestic output gaps, while foreign output gaps are playing a more prominent role in domestic inflation. Despite this reality, domestic monetary policy does still control domestic interest rates and has a more prominent effect on controlling inflation.
- Globalization may also have an impact on commodity prices, which can then in turn affect domestic price levels. The influence is exactly the opposite of the globalization/inflation nexus, however, as monetary policy in advanced economies appears to determine commodity prices rather than the other way around.
- For emerging markets, commodity price developments can dominate national price ones, and have a large impact on inflation. These effects are differentiated by the dependence of the particular economy on particular commodities.
- Globalization has contributed somewhat to wage moderation via competition, but fragmented labour markets mean that national developments and wage negotiations still predominate over international factors.
- The policy implications of this research are straightforward, as policies that expand globalization should be encouraged, even if future effects on inflation are likely to be muted.
- A further implication is that good monetary policies remain crucial in the battle against inflation, including a narrow focus on inflation targeting rather than adding other targets to a central bank's mandate.
- Given the power wielded by advanced economy central banks on global commodity prices, this should be taken into account when setting policies so as to not export inflation to commodity-dependent emerging markets.
- Finally, labour market flexibility appears to be impervious to globalization. If a country wishes to reap more benefits from globalization via more flexible labour markets, such reforms will need to be endogenously generated.

1. INTRODUCTION

Inflation rates, as measured by either consumer or producer price indices, have been on the decline in all advanced economies, with the OECD seeing an average annual growth rate of inflation in early 2015 of approximately 0.5% (Figure 1). Even in the "great moderation" of the 1990s, inflation in the OECD averaged approximately 5%, a figure not seen since the spike in inflation accompanying the start of the global financial crisis in 2008. Along with this decrease in inflationary levels, the volatility of inflation has also declined substantially (excepting late-2008), while consumers also expect inflationary episodes to be far shorter today than they did in the 1970s (White 2008).

Figure 1: Consumer Price Inflation in the OECD

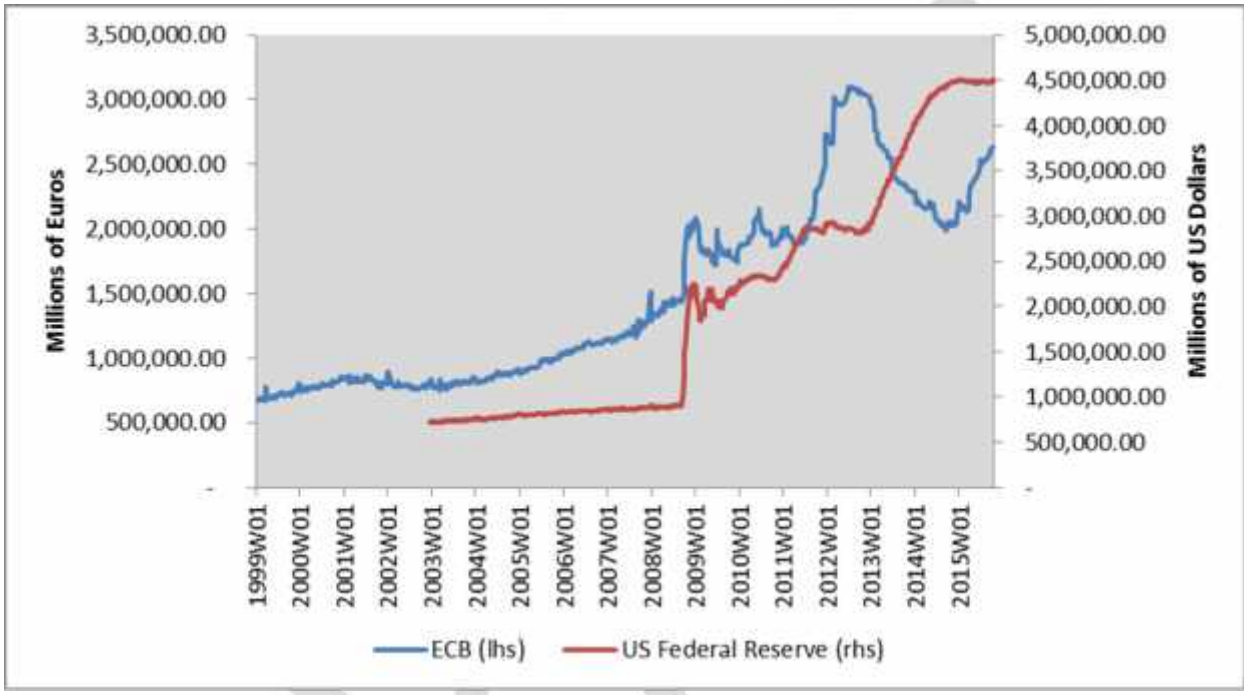
Source: OECD Database (https://data.oecd.org/price/inflation-cpi.htm).

The paradox of this performance, especially since 2008, is that these inflationary outcomes have occurred precisely in an era where inflation is the overriding goal of major central banks. Seven years after the Lehman Brothers bankruptcy and the unofficial start of the global financial crisis, the great unconventional monetary experiment in the world's developed economies continues. From "quantitative easing" from the US Federal Reserve to "monetary accommodation" from the European Central Bank (ECB), unprecedented amounts of liquidity have been pumped into the global financial system, albeit at different scales (with the Fed far surpassing the ECB in terms of its accommodation – see Figure 2). But while the coordinated and continuing response to the global financial crisis by the world's central banks may have "saved the system," it has also exposed the limits of monetary policy in influencing the macroeconomy, especially in areas where structural policy is required.

Finding the actual drivers of inflationary outcomes in developed countries post-crisis requires looking beyond national boundaries. Indeed, the issues of inflation and the diminishing ability of central banks to control inflation have dovetailed with another economic phenomenon, that of globalization. While economic globalization in most advanced countries, even four years after the global financial crisis (2012), was at levels not seen since the mid-1990s, trade volumes have continued to increase, with the OECD

countries seeing an increase in trade to GDP of 12 percentage points from 2003 to 2013.[1] Accompanying this boom in trade has been an integration of production processes across boundaries, a trend that, in the pre-crisis period, had the effect of putting downward pressure on domestic prices via competition (Pain et al. 2006). This integration of production processes has also opened the door for commodity prices to set the pace for national price developments, with shifts in energy and food prices presenting additional challenges for central banks targeting inflation (De Gregorio 2012). As Jean-Claude Trichet noted in 2008, "despite limited convergence in price levels, inflation developments have seemingly reflected the influence of global factors."[2]

Figure 2: Total Assets of Central Banks, by Week, 1999-2015



Source: European Central Bank data warehouse (http://sdw.ecb.europa.eu/), Federal Reserve Bank of St. Louis (https://research.stlouisfed.org/fred2/).

This purpose of this brief is to examine the effects of these two trends, increased globalization and moderate inflation, and ascertain if globalization is reducing the ability of policymakers to control policies in their own country. Our central finding from this analysis is that, in one sense, globalization has made it more difficult for central banks to influence domestic prices, as production processes continue to counteract banks' demand for inflation; however, the scale of the effect of globalization remains small and banks still have several powerful tools at their disposal. In regards to commodity prices, central banks also may underestimate their power, especially if they are in advanced economies. Finally, the fragmentation of global labour markets means that wage-setting still remains a nationally-determined outcome.

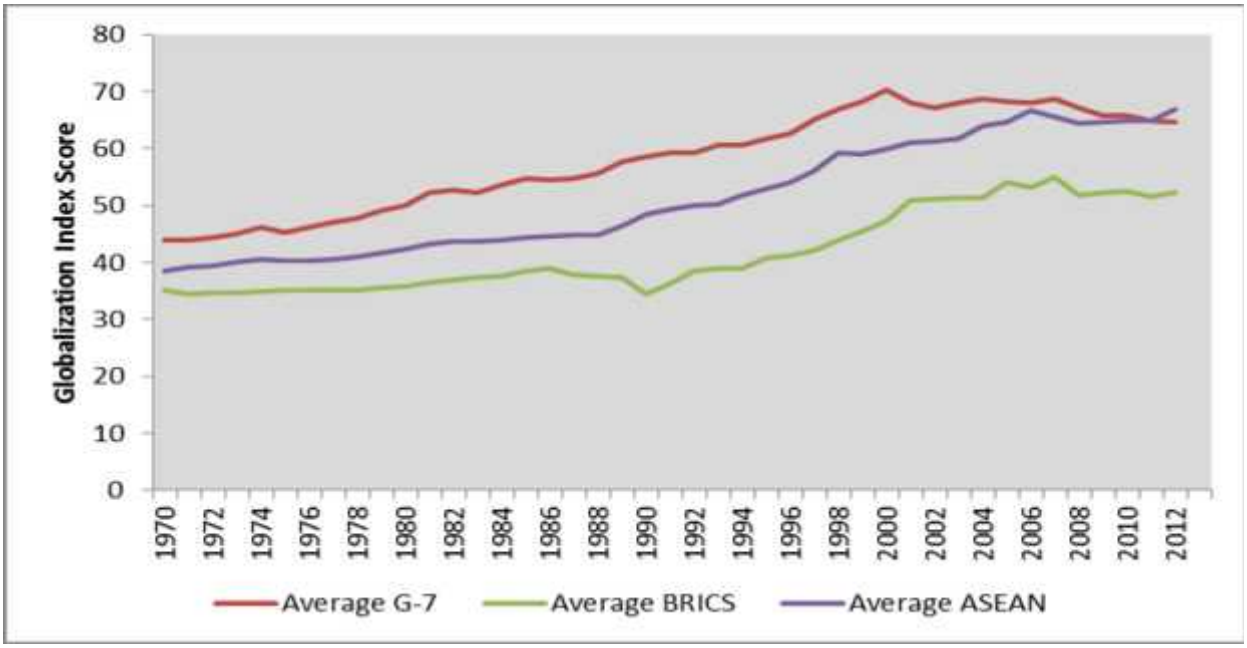
[1] Globalization data is based on the Index of Globalization, created by researchers at the KOF Swiss Economic Institute (Dreher 2006). OECD trade numbers are based on World Bank World Development Indicators (WDI) data.

[2] Speech held at the Barcelona Graduate School of Economics on February 14, 2008. Available at http://84.88.73.1/tmp/pdf/BE%20Lecture%20Transcript.pdf.

2. GLOBALIZATION AND INFLATION: A REVIEW

The reality of globalization over the past 20 years has been a tale of increased economic integration across many fronts, including trade, manufacturing and production processes, labour markets, capital markets, information flows, and culture. Measured by the Index of Globalization from the KOF Swiss Economic Institute, Figure 3 shows that economic globalization has been on a steady rise across all representative country groupings since 1970, with a large spike after 1989 and a plateau after the global financial crisis.

Figure 3: Index of Globalization, 1970-2012



Source: Author's calculations based on data from the KOF Swiss Economic Institute (http://globalization.kof.ethz.ch/).

The effect of this globalization on monetary policy emerged as a popular topic in the economics literature approximately ten years ago, as the seeming continuing moderation of inflation in the 1990s was attributed to both prudent central bank policy and increased globalization. The extant literature theorized that globalization would operate through several different channels in moderating inflation:

- Globalization removes incentives for imprudent macroeconomic policy, such as discretionary bursts of inflation, as international goods and capital markets react adversely. This has the effect of moderating policymakers and encouraging low inflation (Tytell and Wei 2004);
- Trade puts downward pressure on the price of goods, as comparative advantages are adhered to and lowest-cost suppliers at a given quality level survive (Rogoff 2003);
- Similarly, relocation of production due to lower barriers can help lower prices through cost-savings, which are then passed on to the consumer (IMF 2006);
- Increased competition from lower-cost foreign suppliers reduces the mark-up that domestic producers could charge on goods in the home market, undercutting monopoly power and thus reducing overall prices (Pain et al. 2006); and
- Globalization can spur productivity growth for both domestic and foreign manufacturers, as increased pressure to innovate also contributes to better utilization of materials and lower costs for inputs (IMF 2006).

Moreover, disinflation attributable to globalization over the past two decades has created a virtuous cycle: much as the 1960s and 1970s created an expectation of ever-higher inflation, the disinflation in the 1980s and 1990s has kept inflationary expectations fairly stable at a very low level (White 2008). With firms anticipating low inflation in the future, and thus lower costs of capital, they are more likely to invest in long-term projects which in turn also contribute to innovation and lower prices.

However, a few caveats apply to these hypothesized channels of influence. In the first instance, they refer to forces which would lower the price level in a particular country, not those that would necessarily lower inflation (Mishkin 2009). That is, inflation is everywhere and at all times a monetary phenomenon, so that even pressures for price level decreases can, theoretically, be counteracted by monetary policy.

Along these lines, the definition of "inflation" utilized in these analyses often refers only to core or headline inflation, relying on broader indices of prices. While globalization may temper price pressure in product markets, it is hard to say that all facets of inflation have been moderated; one only need look at the run-up in asset markets prior to the global financial crisis and, to some extent, their re-inflation since 2009 to see that globalization may have stoked inflationary pressures rather than moderated them.

Finally, and as we will see in the next section, globalization's effect on prices via increased competition may be localized in those industries that are exposed to global forces. That is, globalization may reduce prices in import-competing industries, but there is less of a chance of having a broad-based reduction in price levels due to globalization (Rogoff, 2003). Of course, this assertion also overlooks the fact that inputs and intermediate goods may also see a price decline, which would have a larger effect on an economy, but in general globalization may only affect narrow segments of the goods market (and have little impact on services).

2.1. The Evidence on Globalization and Inflation

Despite these possible mitigating factors against globalization's impact on inflation, it is undeniable that the fall in inflation across the world over the past 25 years has correlated with a rapid increase in globalization. Research has also uniformly shown that global factors have had an increasing effect in determining domestic inflation (Hodgetts, 2006), with some papers (Borio and Filardo, 2007) finding that global factors now dominate domestic ones for inflationary outcomes. While the scale of the effect that globalization has had on inflation varies depending upon the sample and timeframe, nearly all studies show a very modest improvement in inflation due to globalization.

Specifically, Pain et al. (2006) estimate that imports from China and elsewhere in Asia reduced inflation in the US by 0.1 percent per year over 1996 to 2005, while the Eurozone saw a reduction of 0.3 percent annually over 2000 to 2005. Focusing narrowly on the United Kingdom, Nickell (2005) estimates that inflation decreased by 0.55 percent per year due to globalization, while Kamin et al. (2006) show that the rise of China lowered import prices by about 0.8 percent annually in the US, only translating to an overall price decrease of 0.1 percent per year. Finally, the IMF (2006) estimated that a 1 percent fall in import prices would lead to a 0.08 percent drop in inflation across a sample of advanced countries (the G7 plus Australia).

Overall, this research, as can be seen, has focused mainly on the overall effect of globalization on inflationary pressures in advanced economies, so there is little evidence of the effects of globalization on emerging markets. Also, as noted above, this work focuses mainly on product markets with little research into the effect of global trade in services. Both of these omissions are due mainly to issues of data, but are promising areas of future

research. Also necessary for understanding the link between globalization and inflation will be to re-examine the issue with a longer time-series; current research may suffer from a bias in timeframe, given that the vast majority of research was conducted prior to the global financial crisis. These truncated time-series will not have captured the halt in globalization (especially in international trade) that accompanied the crisis.

Finally, and perhaps importantly for our purposes, this research has shown the effects of globalization but generally without a sense of its implications. If inflation is determined exogenously to a country system, this must change the way in which policymakers think about monetary policy. As Claudio Borio (2011:12) of the Bank for International Settlements remarked, "purely country-centric approaches to understanding the workings of the economy and formulating policies are bound to be inadequate." But is this actually the case? In a globalized world, is integration actually making it more difficult for central banks to influence domestic prices?

3. THE CHALLENGE FOR CENTRAL BANKS (I): GLOBALIZATION, COMMODITY PRICES, AND PRICE INDEPENDENCE

The challenge for central banks can be broken up into two separate-yet-related areas: the effect that global integration of production processes has had on domestic inflation and the effect that globalization has had on commodity prices. These two effects are in some ways countervailing, as increased globalization may have a downward effect on product market price levels; however, globalized markets may mean increased demand for commodities, which then could result in higher prices that then feeds through to inflation. In both instances, central banks are buffeted by external forces, and finding the right balance between internal needs and external realities presents the largest challenge for monetary policy.

3.1. Production Processes and Central Bank Influence

Rogoff (2003), perhaps influenced by his background at the IMF, was one of the few researchers to note the challenge for central banks that global (dis)inflationary pressures present, as global forces may push inflation below what monetary authorities may project or desire. However, it was Mishkin (2009:191) who comprehensively summarized the four major issues confronting central banks today:

(i) "Has globalization led to a decline in the sensitivity of inflation to domestic output gaps (the difference between actual and potential output) and thus to domestic monetary policy?

(ii) Are foreign output gaps playing a more prominent role in the domestic inflation process, so that domestic monetary policy has more difficulty stabilizing inflation?

(iii) Can domestic monetary policy still control domestic interest rates and so stabilize both inflation and output?

(iv) Are there other ways, besides possible influences on inflation and interest rates, in which globalization may have affected the transmission mechanism of monetary policy?"

In regards to each of these questions, in the first instance, it appears that there is unequivocally a decline in the sensitivity of inflation to domestic output gaps, but there is mixed evidence on whether this is attributable to inflation. Theoretical modelling from Clarida et al. (2002) show that, in an open-economy DSGE model, Phillips curves become flatter as an economy becomes more open. This theory has been matched by

extensive empirical data. The IMF (2006) study examined above found that, over 1960 to 2004, the sensitivity of inflation to the domestic output gap fell substantially in the G7 countries plus Australia, due mainly to trade openness. Similarly, Debelle and Wilkinson (2002), focusing exclusively on Australia, find sensitivity to the domestic output gap plummeting at the precise time that product and labour markets were opening up to globalization. And the gold standard of this research line, Borio and Filardo (2007), finds that globalization is the main culprit for inflation moderation across a sample of 16 OECD countries.

However, contrarian evidence exists as to whether or not globalization is the true source of this decline. Ihrig et al. (2010) find that the sensitivity of inflation to domestic output gaps is not related to the extent of globalization that a country has embraced. And, answering his own question, Mishkin (2009) argues that declining sensitivities should instead be attributed to better monetary policy. With more independent central banks and firm commitment to breaking the back of inflation, Mishkin believes that inflationary expectations were re-set, and thus households and businesses would see inflationary shocks as transient and not push for higher wages or prices to compensate. If this is indeed the case, it would thus be imperative for central banks to play the role they did in the 1980s and 1990s and combat inflation, rather than attempting to re-inflate the economy.

Turning to Mishkin's second question, the answer is unanimously yes, foreign output gaps are playing a more prominent role in domestic inflation. As noted above, in some instances and for smaller countries, foreign output gaps have dominated the effects of domestic factors (Borio and Filardo 2007; Ciccarelli and Mojo 2010), while for other samples, the effect of foreign output gaps is much smaller (Ihrig et al. 2010) or highly dependent upon the specific country being examined (Ball 2006). Given the complexity of monetary policy even in a closed economy, the trend towards increased globalization means that Woodford's (2007) injunction for central bankers to monitor import prices is sound advice.[3]

The answer to the third question requires some clarification, in particular in regards to the time horizon being examined. In general, domestic monetary policy does still control domestic interest rates but only in the short-term; longer-term interest rates in advanced economies are more likely to be influenced by global factors, including savings behavior, capital flows, and global risk premia (Warnock and Warnock 2009). Undoubtedly, however, by utilizing interest rate and monetary channels, central banks continue to exhibit a high degree of influence in setting inflationary targets.

However, a key point for understanding the post-crisis world is also to note that central bank goals have shifted from merely stabilizing inflation towards output-related goals. Under this scenario, it is difficult to say that monetary policy can stabilize both inflation and output, since it appears there is much leverage to affect one and zero leverage to affect the other (López-Villavicencio and Saglio 2014).

Finally, thinking about the other ways that globalization may have affected the transmission mechanism, the answer is also yes, specifically through political economy channels. As noted earlier, globalization may have contributed to monetary rectitude by removing many of the incentives for inflation. Bean (2006) also notes that policy credibility is at stake, and if central bankers react to the disinflation that globalization brings with sustained inflationary tactics, it may change perceptions of their credibility or inflationary expectations writ large. Finally, Mishkin (2009) also notes that globalization may smooth domestic consumption, as changes in domestic demand are offset by changes in imports.

[3] However, this assumes that import prices accurately reflect global output gaps, which may not always be the case.

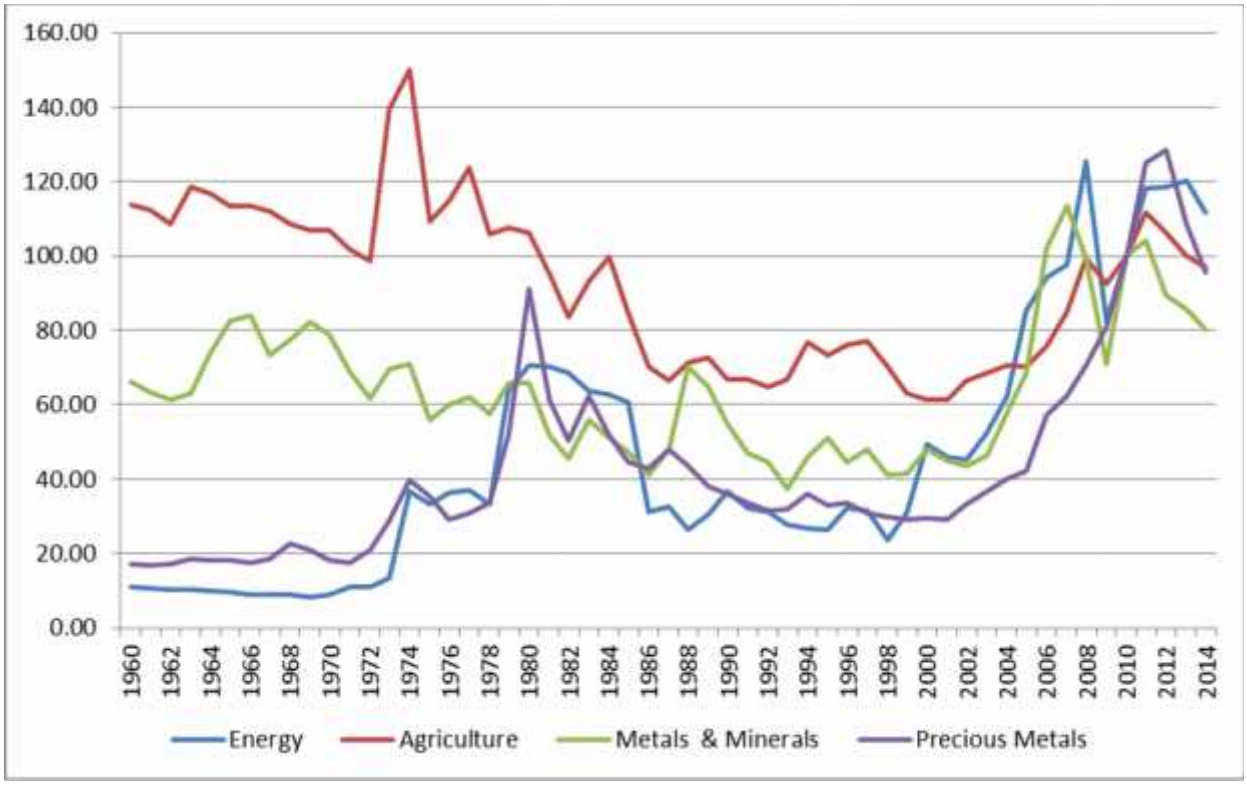
Where demand shocks occur, output is less likely to respond as dramatically, given that the trade balance can absorb much of the shock. Thus, more open economies have an additional buffer against drops in consumption, meaning an easier target for central bankers focusing on aggregate demand.

3.2. Commodity Price Shifts and National Prices

Given the reality of globalization's effects on central bank influence, a further question is if global commodity price shifts can dominate national price developments and, by extension, central bank policies. Theoretically, there are many ways in which globalization can affect commodity prices: as noted above, the expansion of global markets and the coming on-line of emerging economies can be expected to drive up demand and thus prices for commodities. This has been the case with China's emergence as a global economic power and India's booming economy, with both countries craving energy, primary foodstuffs, and other commodities to fuel its manufacturing. On the other hand, globalization encourages innovation, which also encourages lower materials usage (Hartwell and Coursey 2015), or encourages exploration to increase supply (as with the shale oil/gas revolution in the United States), thus lowering price levels. Thus, it is not self-evident how commodity prices would feed through to inflation, given that the impact on commodity prices from globalization is uncertain.

Figure 4: Global Commodity Prices, 1960-2014, by Grouping

Annual Indices, 2010=100, Real 2005 Dollars



Source: World Bank Commodity Markets Outlook Historical Data (http://www.worldbank.org/en/research/commodity-markets.print)

These contradictory influences are evident in the actual path of major commodity prices over the past twenty years. As Figure 4 above shows, the prices of major commodity grouping were on a steady downward path starting in the 1970s, but all spiked upward in the period roughly corresponding to 2001 to 2007, crashed with the global financial crisis,

and then resumed an upward trend between 2008 and 2013, only to fall again in 2014. A visual inspection of the data appears to confirm that the boom of China and India in the 2000s led to much higher commodity prices, but, remarkably, this was also a time of "Great Moderation" of inflation, as shown in Figure 1. The reverse is true from the 1970s, when commodity prices began their downward drift, but inflationary pressures in the OECD countries were at their highest.

The econometric evidence on the effect of commodity prices confirms that there is little relationship between commodity prices and domestic inflation. Bijapur (2012), examining the pre- and post-crisis period, finds that commodity prices had no effect on growth of inflation in 11 high-income countries across any specification. Restricted to the pre-crisis period, Pain et al. (2006) also show that the line between commodity and non-commodity price shifts is immaterial for inflationary outcomes in OECD countries, as changes in commodity import prices have the exact same effect on price levels as changes in non-commodity import prices.

Of course, the effect of commodity price shifts on inflation can be highly country-specific, with commodity price shifts falling most heavily on countries and sectors heavily dependent on specific commodities (Gelos and Ustyugova 2012); Mallick and Sousa (2013) find that the BRICS countries, in particular, see a rise in overall price inflation as the result of a commodity price shock. However, their analysis also shows similar effects to that between globalization and inflation in general, as the price shock only feeds through to domestic inflation for a maximum of five quarters. Finally, De Gregorio (2012) finds that food commodity price shocks have the biggest effect on emerging market economies and their inflation levels, with central banks in such countries needing to shift to headline inflation targeting rather than merely core inflation.

These results point to a very important distinction on the relationship between commodity prices and domestic inflation: emerging markets appear to be price takers in regards to commodity price shifts, while advanced economies appear to be price makers. In fact, for OECD countries, the relationship between commodity prices and domestic inflation is exactly the opposite of globalization and inflation, with causality running from inflation to commodity prices rather than the other way. In particular, the commodity boom of the 2000s was in part generated by low interest rates in advanced economies (in addition to China and India), creating liquidity that chased returns in commodity markets. Research from Jeffrey Frankel (2008) through 2005 confirms this, showing a strong correlation between monetary policy in the US and commodity prices, with tighter US policy leading to lower commodity prices.

Larger countries may even influence commodity prices through inflationary expectations, as recent evidence from Hammoudeh et al. (2015), shows that contractionary monetary policy in the US leads to increases in commodity prices globally over the following six quarters, until the effects of the interest rate hike take hold. They conjecture that this effect is due to a perception of greater inflation to come (why else would the Fed have raised rates?) which then feeds into speculative buying of commodities.

Thus, the evidence regarding commodity prices and their ability to dominate national price developments confirms that commodity prices may have broader effects on domestic prices, but only for price-taker countries. For larger economies, especially in the OECD, the effects of monetary policy dominate commodity prices even in the presence of other forces (i.e. increased demand from China).

4. THE CHALLENGE FOR CENTRAL BANKS (II): LABOUR MARKET INTEGRATION AND WAGE-SETTING

An additional question regarding the effects of globalization has less to do with the conduct of monetary policy and more with the effects on labour markets: has globalization taken wage determination away from internal factors and made it dependent on exogenous conditions?

While the effect on labour markets is often a point of contention in any debate on globalization, the evidence shows that the share of wages in total factor income has labour in has been declining in advanced economies since the mid-1980s, well before the latest wave of globalization (Ellis and Smith 2010). And while globalization may impact specific sectors in differing ways, especially in relation to technological uptake (Balsvik et al. 2015), the evidence shows that it has an overall beneficial impact on labour markets. For example, work from Davidson et al. (2014) finds that globalization helps to improve the efficiency of the job-matching process in labour markets, lowering frictional unemployment. Bauer et al. (2013) also find that globalization of labour markets in Germany led to higher employment probabilities of high-skilled domestic workers and no significant changes for lower-skilled workers.

In regards to wage determination, the channels through which globalization of labour markets would work to keep down cost pressures are very similar to those seen in product markets, with competition playing the largest role. As with globalization's effect on inflation, integrated labour markets lower the ability of domestic monopolists to accrue rents; in practice and in relation to labour markets, these usually means that national unions are less likely to maintain high wages and exclude non-members from the workforce. Additionally, import penetration forces firms to cut costs, which may lead to innovation in business processes and the replacement of routine tasks with automation, thus lowering wages bill through employment reduction (Autor et al. 2003). This comports with the vast majority of trade openness/labour market literature, which finds that globalization per se has only minor effects on wages or employment, with technological change actually being the driving force.

And as with globalization writ large, there also are political economy channels that may play out in regards to the effects of labour integration. Berthold and Fehn (1998:513) conjectured that "yielding control over the money supply to the European Central Bank (ECB) should therefore create a more favourable environment for national labour-market reforms as expansionary monetary policy is once and for all ruled out as an easy solution to the country-specific unemployment problem." This is in line with the effect seen on inflationary expectations in the previous section: with expected inflation at a low level and central banks assumed to be following a course of inflation targeting, there is little incentive to push for wage increases.

In addition to labour market integration, the ability of workers themselves to move (labour mobility) may also play a large role in determining wage pressures. Europe is an excellent example of this effect, as the Schengen Agreement has created a border-free zone for labour mobility larger than any other in the world. The net effect of this mobility has been to put downward pressure on labour costs, as low-paid but reasonably-skilled workers from Europe's periphery are able to move throughout the continent. This is precisely what has happened in the UK, where (non-financial sector) wages are on a downward drift due to competition from Polish and other immigrants; evidence from Nickell (2009) supports this hypothesis while also noting that, for Spain, immigration has raised the labour supply and reduced long-term unemployment with minimal inflationary pressure due to competition.

However, as with globalization and inflation, the overall scale of such effects is quite small when compared to country-specific attributes. We have already mentioned the effects of technology, which can be endogenously generated or come from investment in R&D rather than any perceived globalization pressures. In addition, domestic labour market institutions tend to dominate the effects of globalization on wages, with each country's specific labour market framework playing much more of a role in wage-setting. This may be because, even accounting for Europe and the Schengen zone, labour markets are notoriously harder to completely integrate as opposed to product markets. Labour mobility is reduced by the human factor, as other policies or circumstances (pensions, home ownership, family ties and cultural/linguistic differences) introduce frictions that are less pronounced in production processes. Even going through with offshoring can raise company costs in the short-term, meaning it may be easier to eschew this facet of globalization in favour of domestic wage restraint (White 2008).

In regards to the evidence surrounding domestic versus global factors, Balsvik et al. (2015) show that, while Chinese competition in Norway may force some lower-skilled workers into unemployment, the wage effect is minimal; this is due mainly to centralized wage bargaining, which means wages are inflexible and thus competition must act through the (un)employment channel. In a much broader study, Felbermayr et al. (2011) show that globalization has a positive impact on employment and wages, but only where wages are bargained at the individual level, as collective bargaining yields only minor dividends. Similarly, Ebenstein et al. (2014) show that wage effects are minimal within sectors due to globalization, with the only negative effects coming when workers switch sectors (i.e. from manufacturing to services) where skills presumably are less transferable. And Potrafke (2013) shows that globalization has run up against a formidable barrier in changing domestic labour market institutions, as he shows globalization has not had a significant effect in inducing labour market deregulation. Thus, not only has globalization not had a significant short-term impact in affecting wages overall, it also has barely budged the national-level institutions that could affect wages.

In summary, globalization's effects in the labour market have generally been limited to employment effects, mainly because national institutions are far more rigid in regards to wages. These institutions appear to dominate international effects, even while globalization has a salutary effect on reducing monopoly rents and flattening wages through competition.

5. CONCLUSIONS

This paper has examined the effects of globalization on the ability of national policymakers to exercise policy sovereignty. In general, the evidence is clear that globalization exerts a strong downward influence on inflationary pressures, but the scale of this pressure is likely to be small and spread out over time. Central banks are thus able to continue to use short-term levers such as interest rates in order to influence domestic prices. The evidence also shows that central banks in the OECD countries have the power to influence global commodity price movements, with these prices overwhelming domestic price developments only in emerging market economies or countries highly dependent upon commodities. Finally, globalization has had a much smaller effect on national labour markets, mainly because integration of labour markets has proceeded at a much slower pace than the market for goods, services, or capital.

The policy implications of this research are straightforward, suggesting that the effects of globalization are simultaneously important yet overestimated. In regards to globalization's effects on inflation, integration of production processes has been an unmitigated good for price levels, inflationary outcomes, and central bank policymaking. Competition and lower

import prices have helped to restrain inflationary impulses and anchored inflationary expectations at a very low level, therefore moderating wage and price increases. Given this reality, policies that expand globalization should be encouraged, even if future effects on inflation are likely to be muted.

A further implication from this analysis is that good monetary policies remain crucial in the battle against inflation, whether or not a country is globalized or not (Hartwell 2012). Central banks around the world led the fight against inflation in the 1980s and 1990s, focusing narrowly on inflation targeting and the interest rate channel in order to break the back of inflationary expectations. While many of the researchers cited above believe that central banks should expand their base of information for targeting, including import prices and especially commodity (energy) prices as a signal for future inflationary pressures, they hold to the idea that inflation should remain the core concern of central banks.

Unfortunately, many central banks in the post-crisis world have abandoned the idea of price stability in favour of output or employment targets. It is here that we see the real worries about central bank influence; while globalization has had a moderating effect on price levels and, to some extent, inflation, inflationary expectations have shifted as well. Central banks using quasi-fiscal policy and abandoning their mandate of low inflation have a real danger of both unleashing severe inflationary pressures via other means, breaking the expectations gains of the past two decades, and of course precipitating the next crisis. In reality, abandoning the idea of price stability against inflation in favour of price stability as measured by the CPI but with continuous inflation in asset markets can only lead to economic trouble.

A corollary to this idea of central bank policy is the widespread consensus that central bank independence has worked for taming inflation, and thus, it should continue as an institutional arrangement. Rogoff (2003) in particular stresses this point, but it is echoed by several other authors as being necessary in a globalized world to tame inflationary beasts. However, an additional interesting point, related to the abandonment of price stability, is that not only have production processes or labour markets become globalized, but also central bank policies. The reality of the post-crisis world is that developed economy central banks have tended to follow each other in trends, if not in levels. What may then really be driving a seeming loss of control of inflation rates near the zero-bound is a loss of differentiation of policies. To put it another way, are central banks really independent if they are all following each other towards zero interest rates? Are unconventional monetary policies even less effective if everyone is doing them? This issue needs further examination, but could potentially be a more plausible explanation for central bank ineffectiveness in re-inflating consumer prices in the advanced economies.

Additionally, while central banks may find it difficult to focus on creating inflation, there is a real danger of advanced economies exporting inflation to emerging markets via the commodity price channel. Central banks in the G7 economies, including the ECB, have been proven to be a prime determinant of commodity prices over the past 15 years, while central banks in emerging markets are price takers. In this situation, global commodity price shifts created by advanced economies can indeed dominate national price developments, especially for countries that already have a high dependency on primary commodities, but for all economies in regards to food prices. Thus, advanced economy central banks should be prepared to consider the consequences of their monetary policy beyond national boundaries and on global developments.

Finally, the issue of wage-setting and the ability of negotiators to set their own wages domestically appears to be in no danger from the forces of globalization. This reality means that any desired moves towards labour market flexibility must come from within a country rather than being imposed from the outside. The evidence has shown that gains from

globalization in the labour market are much more muted in collective bargaining schemes, perhaps arguing for more flexible labour markets for countries that wish to reap larger benefits from labour market integration. This would likely increase the ability of globalization to influence wage levels, as competitive pressures could work through both the employment and wage channels. But the fear that wage negotiators have lost the ability to set wages due to globalization is not substantiated by current research.

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