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Trade linkages and the globalisation of inflation in Asia and the Pacific



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ABSTRACT

Some observers argue that increased real integration has led to greater co-movement of prices internationally. We examine the evidence for cross-border price spillovers among economies participating in the pan-Asian cross-border production networks. Starting with country-level data, we find that both producer price and consumer price inflation rates move more closely together between those Asian economies that trade more with one another, ie that share a higher degree of trade intensity. Next, using a novel data set based on the World Input-Output Database (WIOD), we examine the importance of the supply chain for cross-border price spillovers at the sectoral level. We document the increasing importance of imported intermediate inputs for economies in the Asia–Pacific region and examine the impact on domestic producer prices of changes in costs of imported intermediate inputs. Our results suggest that real integration through the supply chain matters for domestic price dynamics in the Asia–Pacific region.

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1. Introduction

Some observers argue that increased real integration, ie increased international trade in goods and services, has led to greater co-movement of prices internationally. This could occur directly, through import prices, or more indirectly, due to the effect of increased international competition on domestic

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price markups and overall wage and price setting dynamics. Most of the literature on the impact of globalisation on prices has focused on inflation in the advanced economies, treating Asian economies as a source of low-cost exports that could put downward pressure on inflation in advanced economies. Auer and Fischer (2010) and Auer et al. (2013) find strong downward impacts from import competition in the emerging markets on producer prices in the United States and Europe, respectively.

A recent exception is Hirakata et al. (2014), who first apply the methodology of Auer and Fischer (2010) to the case of Japan, finding that the downward effect of Chinese imports on Japanese domestic prices is even more pronounced than is the case for Chinese imports on domestic prices in the United States. Hirakata et al. argue that the reason underlying this more pronounced downward effect is the composition of trade: whereas trade between China and the United States is dominated by final goods, input goods make up a substantial part of the trade between Japan and China. The authors then document theoretically how such a heterogeneous “China price” effect can arise in a dynamic stochastic general equilibrium (DSGE) model that extends Burstein et al. (2008) to the three-country case.¹

Greater real integration could also increase the sensitivity of inflation to cross-border shocks. The average economy is now substantially more integrated in world trade than was the case some decades ago. Worldwide, exports of goods as a share of global GDP have increased, from 17% to 25% during 1980–2012. For 12 economies in the Asia–Pacific region, the increase has been even more prominent, with the share climbing from 15% to 26% during the same time period.² As a result, it seems fair to argue that the average economy is now more prone to international shocks via the trade channel than before. Such an impact is in addition to the effect of globalisation on the level of inflation due to import competition.

The increased real integration in Asia is reflected especially in the region's manufacturing supply chains (see Baldwin and López-González (2013) on the global pattern of supply chain trade). In closely integrated supply chains, any shock to domestic production costs or exchange rates could be easily passed through to economies in the supply chain, affecting intermediate prices in other economies, with potential implications for headline inflation as well.³

Our analysis draws on Auer and Sauré (2014), who – building on di Giovanni and Levchenko (2010) and Johnson (2014) – identify price spillovers via the global supply network. In contrast to Auer and Sauré (2014), who examine how intrinsic cost shocks spill over via input–output linkages and thus translate local cost shocks into a globalised inflation process, we here focus on the more narrowly defined question as to whether input–output linkages matter for the degree of exchange rate pass-through into domestic prices. While previous research has addressed a variety of issues related to international production networks, such an impact of exchange rate fluctuations on domestic prices and thus inflation has not previously been analysed.⁴

In this study, we examine the evidence for cross-border price spillovers among economies participating in the pan-Asian supply chain. Instead of treating the Asian economies as sources of low-cost exports, we consider them importers themselves, and as such prone to cross-border shocks resulting from closer real integration. We start the analysis by studying the impact of trade linkages on the co-movement of aggregate (country-level) prices, in terms of both consumer and producer prices. However, we emphasise that a limitation with country-level data is that it is difficult to control for all the relevant factors that could possibly affect price co-movement at an aggregate level. Business cycle correlation and commonalities in monetary policy are obvious examples. In contrast, sectoral data

¹ Lipińska and Millard (2012) show in the context of a theoretical model how productivity increases in the developing economies could lead to higher inflation in the advanced economies, depending on oil demand elasticities and the structure of labour markets. See also Holz and Mehrotra (2013) and the discussion in BIS (2009).

² These are the 12 BIS member economies in the Asia–Pacific region: Australia, China, Hong Kong SAR, India, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore and Thailand.

³ In some cases, a supply chain may decrease the sensitivity of prices to exchange rate changes. If production is divided between a large number of firms located in different countries, each adding a level amount of value to the finished product, then a depreciation in the local exchange rate implies, ceteris paribus, a nearly offsetting increase in both costs and revenues. In a sticky price context, a finely divided supply chain may therefore be less sensitive to exchange rate changes.

⁴ A recent paper, IMF (2013), finds that higher economic growth is positively associated with participation in global supply chain networks.

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