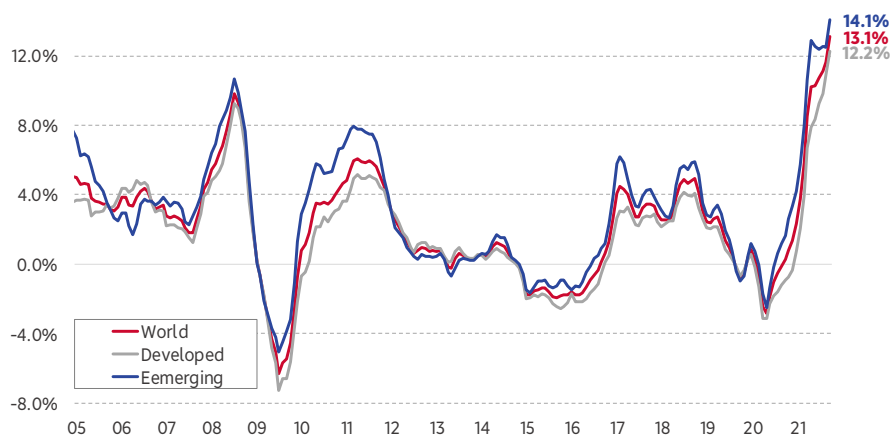


Industrial goods and inflation

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Industrial goods prices have risen more sharply since mid-last year, resulting from supply bottlenecks, higher costs and increased demand for consumer goods. We have seen that this is a global phenomenon (Chart 1) that has a greater impact on inflation in emerging economies, especially in Brazil. Global manufacturing has been hit hard by supply chain disruptions, which are reflected in longer lead times, constraints on inputs and higher producer costs. In fact, wholesale prices have systematically gone up in several countries, affecting consumer prices down the line.

Chart 1: Producer Price Index (PPI) in developed economies, emerging economies and worldwide 12-month change

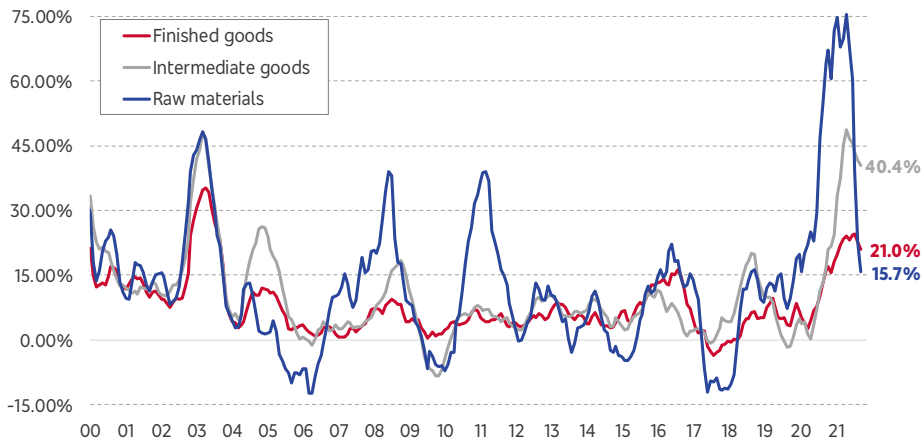


Source: Bloomberg, Bradesco

The upward surge in global commodity prices and the BRL's slide played a role in this process, driving up input prices. Commodities have risen 43.7%¹ in USD since the onset of the pandemic and 80.2% in BRL, even though prices fell in the beginning due to the uncertainties arising from COVID-19. However, prices began to rise sharply from mid-2020 onwards, as (i) economies began to gradually reopen around the world, (ii) governments implemented massive fiscal, monetary and credit stimulus policies, and, later, (iii) GDP levels began to recover. Thus, a combination of initial uncertainty, production decline, exchange rate depreciation and, later, rising demand for goods led to imbalances in several supply chains and, ultimately, price increases. The price of raw materials in wholesale price index rose 15.7% in the last twelve months, after having peaked at 75.6% this past May (Chart 2). Intermediate and finished goods lagged behind but then rose 40.4% and 21.0%, respectively, putting pressure on wholesale price indexes. These magnitude differences are the result of a series of factors, such as price composition, inventories, demand, margins and pass-through percentage.

(1) Change in CRB index from March 1, 2020 to November 29, 2021.

Chart 2: wholesale prices by processing stages
12-month change



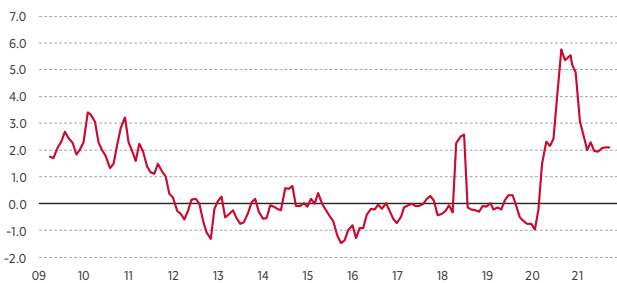
Source: FGV, Bradesco

The surge in demand for industrial goods resulted from both economic stimulus and restrictions on services. As non-essential services were forced to close or open on a limited basis and governments implemented a wide range of fiscal, monetary and credit stimulus programs, some consumption shifted from services to goods. However, supply did not react accordingly, causing inventories to plummet.

The supply and demand balance has been tight in several sectors. One example is the automotive sector, where strong demand has led to semiconductor scarcity, limiting production and causing inventories to fall to minimal levels, with results reverberating across the globe. In some industries, inventories remain at low levels even though operations are near capacity – suggesting that, in these cases, the installed capacity is not enough to meet demand at this time.

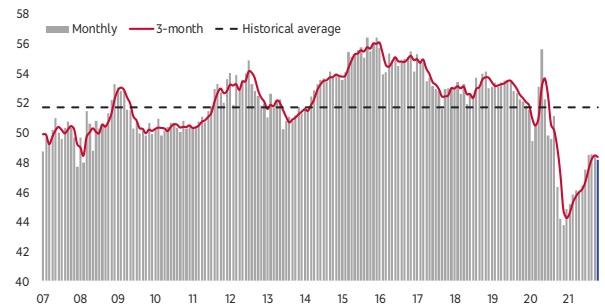
Chart 3: Late orders

Deviation from average delivery time



Source: Bradesco Business Survey

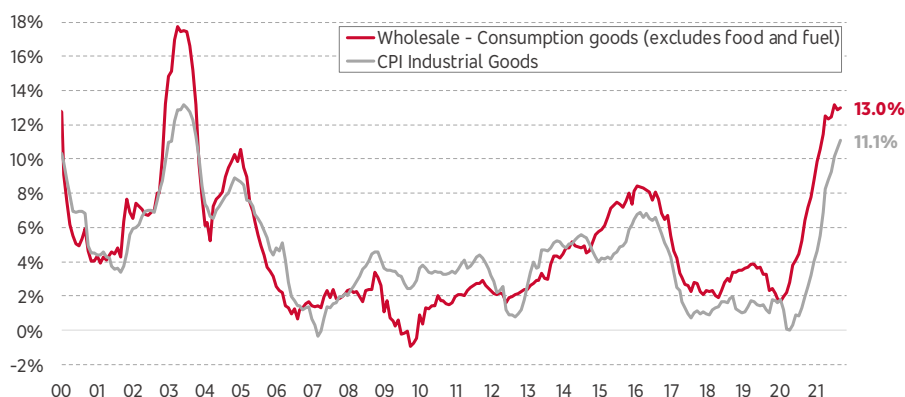
Chart 4: Industrial inventory levels



With higher production costs and limited inventories, the upsurge in wholesale prices was passed on to consumers, supported by strong demand. The dynamics of rising industrial prices still suggest some short-term pressure on industrial goods, considering the traditional lag in pass-through between wholesale and retail prices (Graph 5).

Chart 5: Wholesale and retail consumer goods

12-month change



Source: FGV, IBGE and Bradesco

Items in the automotive supply chain stand out when we look at consumer goods whose prices have risen this year. As the auto industry was hit hard by supply chain issues, new car prices have risen 11.4% in 2021, while used cars are up 11.9%. The price of ethanol is up 51.3% through October, affected by the sugarcane harvest, sugar production and rising gasoline prices. In addition to these, home appliances, electronics and furniture have also been impacted by inflationary cost pressures and strong demand (Chart 6).

Next year, demand is expected to move in the opposite direction. Our outlook includes significant disinflation of industrial goods driven by a slowdown in demand and stabilizing trends for the exchange rate and commodity prices. On the demand side, higher interest rates should discourage durable goods consumption in general.

Industrial goods prices are above pre-pandemic levels and the long-term trend. The value of goods itself has started to become a limiting factor, given the real decrease in household income (Chart 7). The most recent retail sales data already point to some slowdown in demand, especially for furniture, appliances and clothing, which we believe is closely related to the higher price level for these goods as well as to overall higher inflation, which has cut into purchasing power. Another factor, which has been widely debated for some time, is the shift in consumption from goods towards services, going in the opposite direction as the shifts at the height of the pandemic. In this case, it is worth noting that this assumption has not been supported by actual data, at least until now. Both in the U.S. and in Brazil, these patterns are not evident and, on the contrary, the consumption of goods has proven to be resilient, which could be a sign of structural changes in this demand.

On the supply side, we are starting to see some signs of normalization. In relation to raw material costs, commodity prices are likely to stabilize or even retreat, considering a likely slowdown in global growth. In addition, investments in new plants and expanding production capacity can accelerate the supply of components. However, It will take some time for these investments to lead to tangible results, so normalization could take some time. In addition, there are energy supply risks (which have been reduced) and even pandemic-related risks.

Chart 6: Consumer inflation: selected goods

In brackets: item's contribution to headline CPI (Jan-Oct/21)

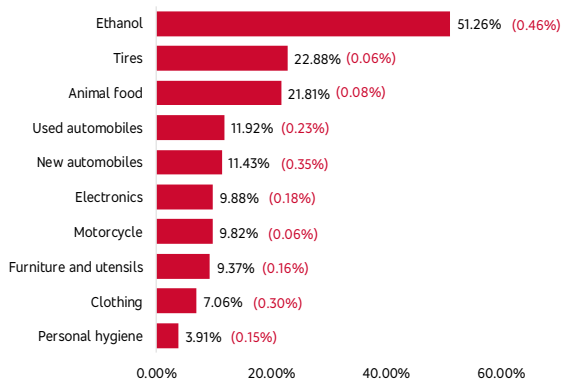
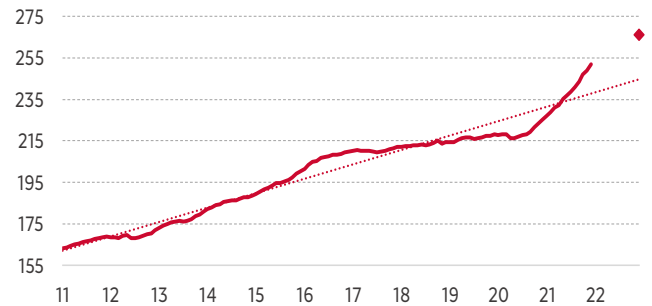


Chart 7: Industrial goods prices

2022 forecast



Source: IBGE, Bradesco

Therefore, industrial goods are likely to see disinflation amid a slowdown in commodity prices and, above all, demand. The normalization of supply chains are dragging, while the slowdown in demand and the expected stabilization of the currency will be the main factors to help ease price pressures in 2022. If supply normalizes earlier than expected, disinflation may be more intense. With these assumptions, our IPCA scenario shows a 5.5% increase in industrial goods prices in 2022, after a 12.0% increase in 2021.

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