DEPRESSED INTERNATIONAL COFFEE PRICES: INSIGHTS INTO THE NATURE OF THE PRICE DECLINE

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INTRODUCTION

Coffee is the most widely traded tropical product, with an estimated 25 million smallholder producers globally accounting for 80 percent of world production. A characteristic of the coffee market is the fact that production originates in developing countries, particularly the least developed countries. For many of these countries, coffee accounts for a sizeable share of export earnings and can contribute to the achievement of the Sustainable Development Goals (SDGs) by generating income, creating rural employment and alleviating poverty. Coffee export earnings can also be used to purchase food commodities from the international markets.

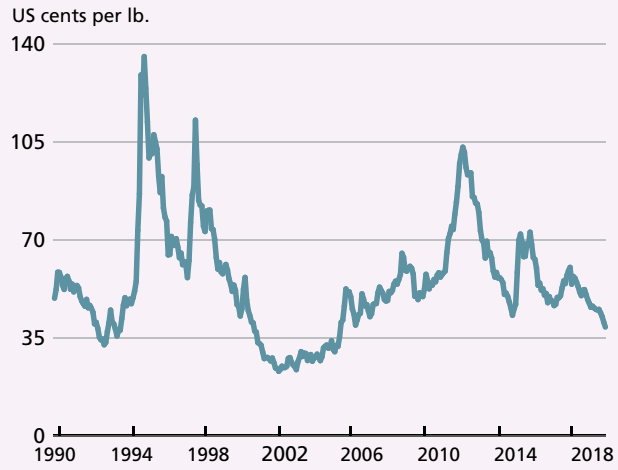
However, current depressed international coffee prices have rekindled memories of the coffee crisis of 2000-2004, which saw coffee price quotations hitting all-time lows. This time, although prices have not yet reached the levels that prevailed during the early 2000s, the protracted nature of the price decline is raising concerns among stakeholders. Apart from short-lived spikes in 2014 and 2016, nominal coffee prices have trended steadily downward since their peak of April 2011 (Figure 1). So far in 2018, world coffee prices, as measured by the International Coffee Organization (ICO) composite price index, are down about 14 percent from last year and have lost close to half their value since 2011. At this rate, they will likely end the year hovering around the lowest annual average since 2007. In real terms, prices are less than 45 percent of their 2011 level, and for many producers, they are lower than production costs. Clearly, the substantial drop in international coffee prices threatens the livelihood of millions of smallholder producers and risks reversing any gains made in living standards. This note examines the nature, origins and implications of the precipitous fall in world coffee prices, highlighting possible policy actions.

THE NATURE OF THE PRICE DECLINE

A number of reasons have been offered to explain the steady decline in world coffee prices. These include the rapid expansion of production capacity in the main producing countries, slow growth of global consumption especially in developed countries, technological advances in coffee processing, excess market power by the major coffee roasters, lack of diversification alternatives for smallholder producers, and the depreciation of the Brazilian Real against the US dollar.

The fact is that weak coffee prices are largely the result of supply generally exceeding demand (Figure 2). In 2018, world coffee production is estimated to reach a record level of 170 million bags, driven by bumper crops in Brazil and Viet Nam, respectively the largest and second largest coffee producers in the world. As a result, world inventories are expected to stand at an all-time high. Over the past 10 years, world coffee production has consistently exceeded consumption by an average of 6 million bags, as global coffee intake has expanded at the lower rate of 2 percent per year – insufficient to keep pace with production growth. These frequent production surpluses have exerted significant downward pressure on world prices, further exacerbated by the inherent economic and physical characteristics of the coffee market. The demand for coffee is inelastic, implying that substantial changes in consumption can be expected only when there is a considerable change in prices. Similarly, supply is also

Figure 1. World coffee prices in real terms, ICO composite



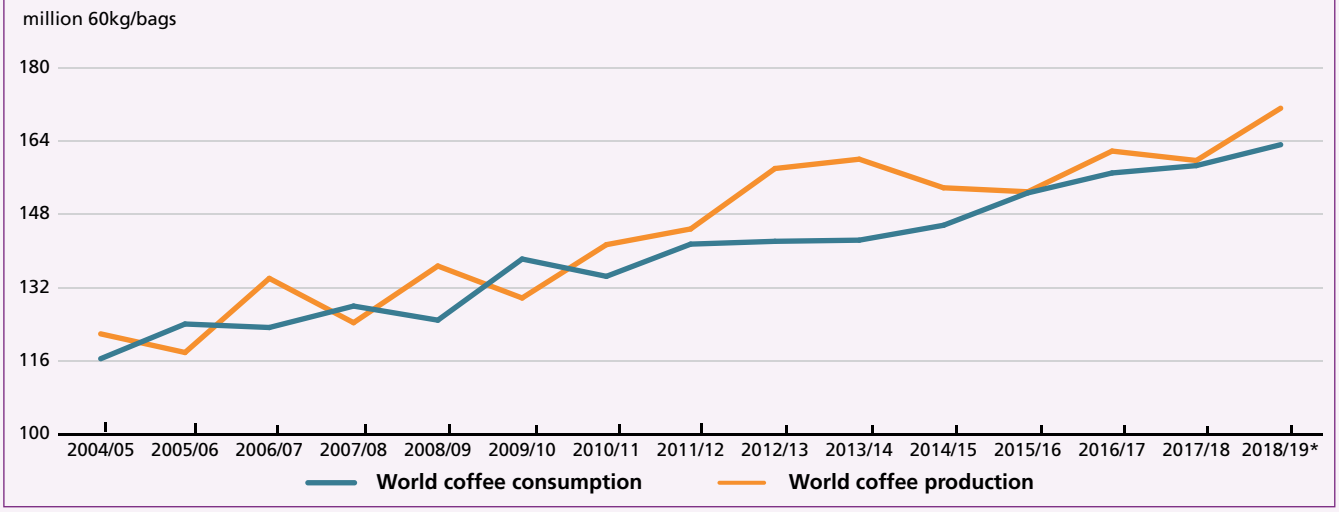
Source: ICO International Coffee Organization

inelastic due to the perennial nature of the crop (with supply elasticity estimated at 0.25). Investing in coffee production requires a long-term commitment, as coffee bears fruits only after 3 to 5 years and achieves economic viability a few years later. Short-term strategies for coping with low prices can include taking less care of the trees and reducing harvesting, but these actions create new challenges by increasing unemployment and encouraging migration out of rural areas. In some instances, supply response to falling international prices is muted by policies in the producing countries, where governments provide large subsidies for input use or set up minimum prices for coffee beans. Frequent currency devaluation also distorts price signals in domestic markets. Therefore, the inelastic nature of demand and supply means that declines in coffee prices tend to be sharp and persistent.

The impact of falling prices on producing countries hinges on their degree of dependency on coffee exports. While many countries have reduced export dependency over the years (e.g. Brazil from about 60 percent in the 1960s to 7 percent in 2016), others continue to rely on coffee export earnings for socio-economic development. For example, export earnings from coffee account for 68 percent of agricultural exports in Burundi, 41.5 percent in Honduras, 39 percent in Uganda, 36 percent Colombia, 34 percent in Rwanda and 29 percent in Ethiopia. High dependency means that the impact of persistently low prices can have wide-ranging and lasting impacts on rural communities, through significant multiplier effects on employment, income and the various upstream and downstream sectors associated with the coffee value chain. For smallholders, falling revenues often lead to coping strategies that involve cutting expenditure on education, health, and ultimately the number of meals per day and the quality of food consumed. During the last coffee crisis, Colombia documented an increase in the incidence of malnutrition, where the number of households reportedly living below the poverty line grew from 54 percent to 61 percent between 1997 and 2000.

In an effort to alleviate the effects of the current crisis, several countries have taken measures targeting the coffee subsector. For example, Colombia has set up a fund of up to USD 34 million to help coffee farmers deal with the declining prices, while Kenya is implementing a series of legislative actions, including a USD 15 million subsidy programme, to support the affected farmers. Perhaps the

Figure 2. World coffee production and consumption



* Production and consumption for 2018-2019 are preliminary forecasts

most emblematic action so far is a letter by coffee growers from more than 30 countries addressed in October 2018 to chief executives in the coffee industry, asking for a coordinated action to mitigate the impact of depressed coffee prices.

Diminishing export earnings also have broad-based macroeconomic consequences, which often translate into a reduction in governments' income tax receipts and foreign currency earnings. For many poor food-importing countries, foreign currency earnings help to sustain current account deficits without having to raise debt to unsustainable levels. Research in this area shows that the linkages between fiscal position and commodity export earnings remain quite strong in several contexts, particularly in Africa. Between 2014 and 2016, coffee export earnings fell by 30 percent in Ethiopia and 25 percent in Burundi, while they were down by 24 percent and 10 percent in Uganda and Honduras, respectively. The impact of the price falls on smallholder producers depends on the extent and speed of international price transmission to domestic markets. As is the case in other contexts, the transmission is asymmetric, in the sense that declines in international prices transmit to farmers at a higher magnitude and a much faster speed than they transmit to final consumers. This is generally attributed to a smaller share of growers in the final retail price, due to a number of factors that include relatively higher costs of processing, transport and services, long value chains, technological progress, and a high degree of market concentration among roasters and coffee retailers[1]. This means that demand does not generally respond to declines in international coffee prices, because price declines are only partially – if at all – transmitted to the retail level. With inherently inelastic demand for coffee, coupled with price rigidity at the retail level, supply shocks can have drastic effects on coffee prices.

DECOMPOSING VARIATIONS IN INTERNATIONAL COFFEE PRICES

As discussed in the previous section, the economic and physical nature of the coffee market, characterized by inelastic supply and demand, renders prices subject to extreme volatility. To assess the role of market fundamentals in influencing price fluctuations, we use a structural vector autoregression (SVAR) model to estimate the effects of four main factors on world coffee price fluctuations. These factors, identified based on economic theory, are: 1) global economic activity to capture changes in global demand for commodities; 2) crude oil prices as a proxy for speculative activity; 3) the spread between distant and nearby futures coffee prices to reflect the effect of precautionary demand (based on the competitive storage model); and 4) nearby futures coffee prices to capture changes in stocks. The selected set of variables helps to identify shocks specific to the coffee market (i.e. precautionary demand for coffee and changes in stocks) from those related to external factors (i.e. global economic activity and market speculation). The reason behind the use of crude oil prices as proxy for speculative activity relies on research findings which show that co-movement between crude oil and agricultural commodity prices has increased, reflecting financial speculation through index trading[2]. On the other hand, the identification of shocks through precautionary demand for coffee is carried out using the spread between distant and nearby futures contracts. This follows the competitive storage model, which specifies that when the futures price is greater than the spot price net of storage costs, precautionary demand for inventory should rise.

In addition to the above factors, the estimated model includes deterministic variables that account for periods of frost affecting coffee producing regions in Brazil, the world's largest coffee producer, and technological improvements over the sample period[3]. We then use the model to trace the effect of a shock to a variable on the price of coffee. Results show that the portion of observed changes in coffee prices associated with speculation activity is relatively small across the sample period. Likewise, the impact of changes in global demand for commodities on coffee prices is found to be relatively limited and fails to explain the observed price spikes. On the other hand, the analysis suggests that the bulk of price movements is caused by shocks specific to the coffee market itself. Both coffee-market-specific variables, namely precautionary demand and changes in stocks, have marked effects on price fluctuations. In particular, changes in stocks display the largest variability and effects on price movements. For example, between 2011 and 2013, the portion of coffee prices responding to changes in stocks displays substantial variability, driven by significant negative shocks on the back of large production availabilities. A similar situation is observed for the period from 1998 to 2004, when coffee prices touched historical lows. For the period January-July 2018, the results indicate that both components linked with changes in stock levels and precautionary demand are responsible for price variations, reflecting the prevalence of a large global production surplus. Precautionary demand

[1] Lewin, B., Giovannucci, D., Varangis, P., 2004. Coffee Markets: New Paradigms in Global Supply and Demand (SSRN Scholarly Paper No. ID 996111). Social Science Research Network, Rochester, NY

[2] See Tang, K., and W. Xiong. 2012. Index Investment and the Financialization of Commodities. Financial Analysts Journal 68:54-74

[3] The analysis covers simple period running from September 1998 to July 2018.

is influenced negatively, as low prices incentivize coffee stockholders to dispose of their holdings on the market. Occasionally, as was the case between 2002 and 2008, the component tracking changes in economic activity can have a relatively stronger influence on coffee prices, in comparison with its overall effect over the entire period. Likewise, the effect of crude oil prices is limited, though its influence on coffee quotations is greater during 2007-2008. This may suggest some feedback effects from the financial sector. Overall, however, the empirical evidence seems to indicate a well-functioning market structure, to the extent that coffee price variations reflect, for the most part, market fundamentals of supply and demand conditions.

WHAT CAN BE DONE TO ADDRESS RECURRENT IMBALANCES IN THE COFFEE MARKET?

Results from decomposing coffee price shocks illustrate that recurrent large production surpluses weigh negatively on prices. This, coupled with a long-term decline in real coffee prices due to technological improvements, means that smallholder producers have to face a tightening price-cost squeeze, which threatens their livelihood and food security. Clearly, the greatest impact on coffee prices would come from actions aimed at controlling production and/or stimulating demand. Over the years, the coffee industry has tried both strategies.

In 2000, in the midst of a coffee crisis, the Association of Coffee Producing Countries (ACPC) promoted a coffee export-retention scheme, where 20 percent of coffee exports would be withheld from the market. In the end, only a few countries actually retained any coffee, and the agreement fell apart. In a sense, this reflects the challenge of implementing producers-only agreements, as these require strong commitments and policing free-riders – those supplying outside the agreement. Other producers-only schemes, such as those covering cocoa and sugar, also fell short of creating and maintaining a price floor. These supply retention agreements were part of the International Commodity Agreements (ICAs) with 'economic clauses' that were designed in the 1970s in response to depressed tropical commodity prices, but were generally unsuccessful in meeting their original intent.

On the demand side, several generic promotional campaigns were launched by the industry to boost consumption, particularly among the youth. These initiatives often highlighted the potential health benefits of coffee intake. Plans were also implemented to raise product quality by removing coffee exports failing to meet specified minimum standards. Although these strategies achieved some limited success, they suffered from poor commitments due to the necessity of ensuring long-term financing and reconciling sometimes diverging interests among exporters.

Tackling the current state of low coffee prices will require some sort of coordinated international action. Yet, what is needed is not market intervention, but rather market cooperation – mostly cooperation among exporters, with the involvement of importers, to ensure that the global coffee market expands reasonably and protects the livelihood of millions of smallholder producers. Market cooperation means, for example, sharing the most accurate and reliable market intelligence, including information on the short- and medium-term outlook, as well as on production expansion plans. It also means developing and implementing global coordinated promotional activities that have the commitment of exporters and importers. Finally, creating value added coffee products at the origin could also alleviate exposure to volatile prices of raw coffee. This hinges, however, on the willingness of the major importing countries to reduce tariffs on processed coffee products, which remain relatively constraining in many cases.