



Boom, Bust and Up Again? Evolution, Drivers and Impact of Commodity Prices: Implications for Indonesia

Executive Summary

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A Trade Development Report

Boom, Bust and Up Again? Evolution, Drivers and Impact of Commodity Prices: Implications for Indonesia

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Indonesia is one of the largest commodity exporters in the world, and given its mineral potential and expected commodity price trends, it could and should expand its leading position. Commodities accounted for one fourth of Indonesia's GDP and more than one fifth of total government revenue in 2007. The potential for further commodity growth is considerable. Indonesia is the largest producer of palm oil in the world (export earnings totaled almost US\$9 billion in 2007 and employment 3.8 million full-time jobs) and the sector has good growth prospects. It is also one of the countries with the largest mining potential in view of its second-largest copper reserves and third-largest coal and nickel reserves in the world.

Rising commodity prices from 2003 to mid-2008 significantly benefited Indonesia's economy. They led a growth in total exports of around 14 percent per year over that period, the highest and most sustained export expansion experienced by Indonesia since the East Asian crisis. Four commodities alone—palm oil, nickel, copper and coal—accounted for almost half of total non-oil export growth in 2007. The windfall in export revenues increased the trade balance surplus and helped Indonesia to almost double its foreign reserves from 2002 to 2007. High commodity prices lifted Indonesia's total income by on average 1.2 percent of GDP in 2004-07. Stocks of Indonesian companies with commodity interests led the performance of the Indonesian stock market, which increased nearly 2.5 times and was one of the world's best performers between 2005 and 2007. The increase in the value of commodity production accounted for 40 percent of nominal GDP growth in 2005-07. Incomes in resource-rich provinces off-Java, particularly in the plantations and mining areas of Sumatra and Kalimantan, were significantly boosted leading to a remarkable expansion in sales of cars and motorbikes—sales of motorbikes in these provinces increased 60-80 percent in the first half of 2008 compared with the first half of 2007—as well as in the establishment of new supermarkets. Rising commodity prices also increased government revenues and contributed to a fall in the poverty rate from 2005 to 2008 thanks partly to increases in agricultural incomes.

However, Indonesia did not fully utilize its natural resources and windfall revenues, missing an opportunity to place the country on a sustainable high growth path. First, commodity growth was mostly in nominal terms rather than real terms. The supply response from the mining and oil and gas sectors, which represent 11 percent of GDP, was disappointing. Instead of increasing oil and gas production to respond to the rising international prices since early 2000, oil production volumes have fallen by half over the past decade and mining investment in new production capacity has been almost non-existent. Four fifths of the growth in total commodity exports from 2005 to 2007 resulted from the increase in prices rather than from an increase in production. Second, the country received less revenue from its natural resource endowments than its competitors because of the low value-added content of its exports. Third, a large part of the commodity revenues was spent on subsidies rather than on productive investments, unlike in the 1970s when Indonesia used the commodity windfall to improve infrastructure and revamp its agricultural sector.

Despite the recent fall in commodity prices, most of the currently available projections suggest that commodity prices are not going to go back to historical norms and that they will remain relatively high for the medium to longer term. The main drivers of this structural break are the stronger link between commodity prices and global growth due to developing countries' greater integration

into the global economy and the stronger link between agricultural prices and energy prices due to biofuels. The World Bank forecasts that mining and food prices in 2020 will be over 50 percent higher than in early 2000 relative to manufactures.

The likely upturn in commodity prices provides Indonesia with an opportunity to develop a strategy for long-term sustainable high and broad-based growth based on its natural resource wealth. Recent economic literature based on countries' experiences concludes that when managed well, natural resources can be vital for development (De Ferranti *et al.* 2002, Lederman *et al.*, 2007). The empirical evidence strongly indicates that the exploitation of natural resources can lead growth for long periods of time and does not preclude the development of manufacturing or other activities. What is important is not what is produced but how it is produced. Rich endowments of natural resources, combined with the aggressive pursuit and adoption of new comparative advantages by investing in skills, innovation and good institutions are a proven growth recipe. The most convincing evidence is offered by history: Australia, Canada, Finland, Sweden, and the United States based their development technological progress on their natural resources.

Thus, rather than turning its back on its mineral and oil and gas resources, it makes more economic sense for Indonesia to rely on its resource sectors to generate needed revenues to develop the rest of the economy. The potential benefits of properly exploiting the natural resources are too big to be ignored. The main change needed to spark a boom in oil and gas and mining is to improve the regulatory environment. The new Law on Mineral and Coal Mining approved in January 2009 does not appear to constitute an improvement with respect to the former legislation, as it is perceived by investors as being unclear on key issues. The development of the related regulations provides an opportunity to increase certainty and trigger a robust response from domestic and international mining investors to the profitable prices. The windfall revenue generated by a boom in these sectors and the sustainable development of palm oil would enable the Government to implement an ambitious program to spur broad-based and inclusive development.

Unless carefully managed, a boom in mining, oil and gas and palm oil production can lead to Dutch disease. Unless addressed, the resource windfall will put pressure on inflation, the price of capital and the exchange rate, causing non-resource tradable sectors to lose competitiveness and non-tradables to expand. This would dramatically exacerbate Indonesia's increasing export concentration on commodities since the East Asian crisis, which would not be desirable for two reasons. First, a concentrated economy would not generate sufficient jobs for the more-than-two-million new entrants to the labor force each year as the resource sectors are not as job intensive. Indonesia's own past growth experience suggests that growth in manufacturing will also be necessary to absorb the growing labor force. Second, an excessive economic concentration would increase Indonesia's exposure to the costly boom-and-bust cycles associated with commodities and this would lead to unstable growth. A balanced export structure is key to a healthy economy.

The Government of Indonesia can prevent the resource boom from causing Dutch disease by increasing the competitiveness of the tradable sectors and/or mitigating the exchange rate appreciation. Dutch disease can be prevented by increasing the competitiveness of tradable sectors to compensate for the loss of competitiveness created by exchange-rate appreciation. Competitiveness is an area where there is plenty of scope for improvement given the low technological sophistication and the low economic dynamism of Indonesian products. Dutch disease can also be prevented by mitigating exchange-rate appreciation through the creation of a sovereign wealth fund to sterilize boom revenues or by increasing savings.

To increase competitiveness, technological sophistication and dynamism of Indonesia's tradable sectors the Government needs to develop a comprehensive strategy. This strategy should focus on improving logistics, fostering FDI flows to attract the skills and knowledge needed, and promoting the development of knowledge industries, particularly in natural-resource-based activities where Indonesia has a comparative advantage. This will require building new endowments in human capital and knowledge, and developing better institutions and services to facilitate diversification into higher value-added products and spur dynamism.

The Government also has a role to play in redistributing the resource windfall in a way that mitigates the negative effects of commodity price volatility on vulnerable households and that promotes social and political stability. To avoid misusing money, the Government needs to develop operational procedures for mitigating the impact of price volatility on poor net food consumers. Such a framework would ideally comprise the following five steps: a) an effective price-monitoring system; b) an assessment of the impact of price changes on the economy and population; c) an assessment of the most efficient policy options and their desirable duration based on cost-benefit analysis; d) a predictable, transparent and consultative process for price stabilization; and e) an evaluation system to track the implementation of policy responses and to assess their impact so that adjustments can be made if needed. Furthermore, unless appropriately redistributed, the income generated from commodities can create tensions, such as conflicts between regions over the use of the income, social tensions due to higher income inequality and governance issues such as the risk of corruption.

A summary of the main contents and findings of each chapter in this report can be found in the next section.

Summary of the Chapters

This report consists of seven chapters. The first six chapters present an examination and an analysis of the factors driving increased commodity prices, price forecasts, economic impact of commodity price increases, effective price stabilization policies, and insights from Indonesia's past growth experience. The final chapter draws on the findings of the previous chapters and suggests a development strategy for Indonesia in the context of high commodity prices. This section summarizes the contents of the chapters and their main findings.



Chapter 1

Rising Food Prices: The Impact of Increased Production of Biofuels

Internationally traded food commodity prices increased sharply after 2002, with the most dramatic increases occurring in the period from January 2006 to June 2008. As a result, the cost of food for consumers also increased across the world. This increase in the cost of food has been a burden on the poor in developing countries, who spend roughly half of their household incomes on food. Chapter 1 examines how price patterns for internationally traded food commodities have changed and analyzes the causes of these increases. These causes include factors such as the increased volume of production of biofuels from food grains and oilseeds; the weak US dollar; and increased energy prices.

The chapter starts by describing the trends in the prices of food commodities. The International Monetary Fund's (IMF) index of internationally traded food commodity prices indicates that these prices increased by 130 percent in the period from January 2002 to June 2008. Prior to this period, food commodity prices had been relatively stable, after sinking to their lowest point in 2000 and 2001 following the East Asian financial crisis. Of all food commodities, the prices of grains were the first to increase dramatically in the period in question. This suggests that the demand for biofuels, which are produced using at least some grains as a primary raw material and compete with other grains on land use, could be involved in the increase of grain and food prices.

The chapter then reviews a number of studies into the impact of the increased demand for biofuels on food commodity prices. Despite all the differences in approach between these different studies, the vast majority of them recognize the increased volume of production of biofuels as a major contributing factor to increased food prices.

The chapter then looks at a number of other factors that may have contributed to the dramatically increased price of food commodities, including increased fuel and energy costs, downturns in production, the decline in the value of the US dollar, and speculation and increased investor involvement in commodities.

The analysis performed in this chapter shows that the increase in internationally traded food prices in the period from January 2002 to June 2008 was caused by a confluence of factors. However, it confirms that the most important contributing factor to the increased cost of food commodities was the large increase in the volume of production of biofuels from grains and oilseeds in the US and EU. Without these increases, global wheat and maize stocks would not have declined appreciably and price increases due to other factors would have been moderate. The rapid rise in oilseed prices was caused mostly by demand for raw materials for the production of biodiesel, which in turn was driven by incentives created by policies introduced in the EU in 2001 and in the US in 2004.

Changes in patterns of land use in wheat-exporting countries resulting from the increased area of land devoted to oilseeds for biodiesel production made it difficult to expand wheat production. This contributed to large declines in global wheat stocks and hence to increased wheat prices. The large increase in rice prices was largely driven by the increase in wheat prices, rather than to changes in rice production or stocks. In this light, the increased price of rice can be indirectly attributed to a significant degree to the increased demand for biofuels, rather than directly attributed to this cause, considering that rice is not commonly used as a raw material for the production of biofuels.

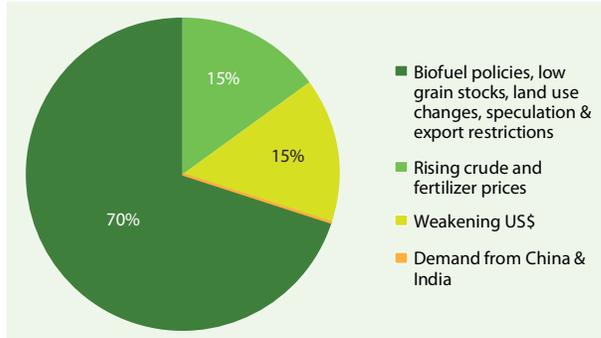
The export bans on grains and speculative activity would probably not have occurred without the large price increases in grains due to the increased demand for biofuels. While the bans and the speculative activity definitely did exacerbate price increases, they can be seen more as a perhaps ill-conceived response to rising prices that had an opposite-from-intended effect than as a primary cause.

Higher energy and fertilizer prices would have resulted in increased crop production costs of between 15 and 20 percentage points in the US and by lesser amounts in countries with less intensive production practices. The back-to-back droughts in Australia would not by themselves have had a major impact on prices, considering that they resulted in declines in levels of global grain exports of only around 4 percent. Under normal circumstances, other exporters would have been able to offset this loss. The decline of the US dollar contributed to about 20 percentage points to the rise in US dollar food prices.

The combination of higher energy prices and related increases in fertilizer prices and transport costs and the decline in the value of the dollar caused food prices to rise by about 35-40 percentage points in the period from January 2002 to June 2008. These factors contributed to about 25-30 percent of the total increases in food prices. Most of the remaining 70-75 percent increase in food commodity

prices was due to the increased demand for biofuels and the related consequences of low grain stocks, large land-use shifts, speculative activity and export bans (Figure 1).

Figure 1: Drivers of food price increases



Source: World Bank staff calculations based on findings of Chapter 1.

The most significant increases in the volume of production of biofuels were in the US and the EU, and these were largely driven by subsidies, mandates, and tariffs on imports. Without such measures, the volume of production of biofuels would have been lower and food commodity prices would not have increased to the extent that they did. The production of biofuels from sugar cane in Brazil is much cheaper than the cost of production of biofuels in either the US or the EU. In Brazil, the production of ethanol from sugar cane has not resulted in significant increases in

the price of sugar, because cane production has expanded sufficiently rapidly to meet the production needs for both sugar and biofuels. Removing tariffs on ethanol imports in the US and EU would allow more efficient producers, such as Brazil and other developing countries, including many African countries, to produce ethanol profitably for export to meet the mandated levels of renewable fuel in the US and EU.

The contribution of biofuels to the rise in food prices raises an important policy issue, since much of the increase was due to US and EU government policies that provided incentives to biofuels production. In the light of their impact on food prices, policies that result in the subsidization of the production of biofuels should be seriously reconsidered.



Chapter 2

Pricking the Price Bubble to Avert a World Rice Crisis

In the period prior to the writing of this chapter, the price of rice on global markets increased dramatically. In the period from December 2007 to April 2008, the price of benchmark Thai 100B white rice rose from US\$368/ton to more than US\$1,200/ton. This surge in price clearly represents a break in the historic trend. International rice prices fell to an all-time low in 2001 in inflation-adjusted terms. Following that, the price of rice increased moderately until December 2007, when prices spiraled upwards in a fashion reminiscent of the 1974 price spike.

A huge number of people in the East Asian region spend a large proportion of their disposable income on this single commodity: one third of the daily calorific of the average East Asian households' intake is derived from the consumption of rice. Thus, the price increases threatened to cause a major poverty crisis.

Given the potentially negative impact of increased prices of this fundamentally important commodity on household consumption levels, it is vitally important for policymakers to understand the factors driving this price increase and to formulate policies that could facilitate the pricking of the price bubble. This chapter intends both to assist in the understanding of these factors and to present a series of recommendations to achieve this end.

The chapter starts by reviewing the specific nature of rice markets, paying particular attention to those aspects that might amplify the sensitivity of these markets to price shocks. These include the fact that rice markets are politically sensitive and that they are thin markets with a small number of exporters trading relatively low volumes of the commodity. As a result, very small changes in supply and/or demand can have a dramatic impact on prices.

The chapter then looks at a number of factors that have been put forward to attempt to explain the dramatic spiraling in rice prices. These factors include those that have been recognized as driving increases in the prices of a number of other commodities, such as wheat. In particular, the spike in rice prices has been attributed to the weak US dollar, increased energy prices, and the increased demand for biofuels.

The chapter argues that the price increases cannot primarily be attributed to the causes that have driven up other commodities, including grains. Rather, it argues that the price increases were due to a sudden change in the trade policies of rice-exporting countries and the urgent efforts of some rice-importing countries to secure supplies at any price, leading to hoarding and speculation. The 'thinness' of global rice markets made rice prices particularly vulnerable to such short-sighted policies. The effect of these policies was to close down the rice trade and create a price bubble that had the potential to exacerbate poverty in areas where rice is a major consumable staple food.

A number of scenarios are presented of the direction that the rice markets might have taken in May 2008. At the time of writing, the chapter suggested that rice-exporting and importing countries and the international community could have helped to prick the rice bubble by collaborating to ease the tightening of trade. The most feasible immediate solution identified by the chapter was the release of stocks by Japan, Thailand and China; the removal of bans on exports; and the halt to large public tenders in favor of direct negotiations.

The chapter ends with a postscript that describes what happened after the original policy paper was presented to policymakers in the region. On 2 May 2008, the Philippines publicly disclosed that it was negotiating with Japan for 60,000 tons of its domestic rice. The US publicly indicated that it would not oppose Japan's re-export of rice. At the FAO summit on the food crisis on 2 June 2008, Japan committed to releasing 300,000 tons of imported rice to the world market in the near future. The public commitment, while more cautious than had been hoped, nonetheless played a major role in calming markets. By June, with increases in the volume of exports and production and decreases in import demand, the market fundamentals had begun to improve. Following the completion of negotiations for a government-to-government sale with the Philippines, Vietnam lifted its export ban on new sales. As a result of increased supply from Asian growers reacting to the high prices, demand for imports weakened significantly.

It is important that lessons from this experience be drawn and that governments take measures to prevent such bubbles occurring in the future. In particular, it is vital to realize that the escalating rice prices were not the result of natural causes, such as weather or crop failures, or causes such as the weak US dollar or the increased demand for biofuel. Rather, they were the result of destructive trade restrictions that did not even serve the short-term interests of those who implemented them. It is important that governments avoid such behavior and that they establish agreements that help prevent a repeat of this bubble in the future.



Chapter 3

Commodity Price Shocks and Market Integration in Indonesia

Over the past several years, the prices of commodities have fluctuated dramatically. With a tendency towards increased prices, it has become increasingly vital for policymakers to understand spatial market integration: the extent to which international commodity price shocks are transmitted to domestic markets, and the speed with which these price shocks are transmitted, and the main drivers and geographical patterns that define them. This is an area that has received surprisingly little attention until recently.

This chapter examines the extent to which the Indonesian markets for rice, sugar, cooking oil, soybean and maize are integrated with world markets. The five commodity markets are found to be integrated with world markets to a significant extent. Over a period of about one year, a 1 percent increase in world prices leads, on average, to a 1 percent increase in domestic prices. Although the five commodity markets are integrated with world markets, the different commodities are found to respond to world price shocks at varying speeds. In general, the speed of adjustment to world price shocks is fastest in the sugar and cooking oil markets and slowest for soybean and maize markets. Even if there are some divergences in the patterns of changes between world and domestic prices, these move together closely when looked at over a longer period of time. This is consistent with the concept of integration.

The speed of transmission of a shock in the international price to the domestic economy also varies between the different provinces. For instance, in the case of rice, simulations indicate that

the adjustment to a shock in the international price of rice would be fastest in Jakarta. Half of the divergence could be corrected in about 5 months in Jakarta, whereas in West Kalimantan it could take about 25 months for half of the divergence to be corrected (this simulation assumes the Government does not prohibit exports to shield the domestic economy from the shock).

Within Indonesia, the main factors determining the extent of market integration between the various provinces are remoteness and the quality of transport infrastructure in that province. In general, remote provinces are found to be less integrated. However, this effect is reduced by good infrastructure.

The analysis also shows that those commodity markets with the highest degree of integration across provinces have smaller price differences across provinces: in the sugar and rice markets, the average price differences across regions is 5 and 12 percent, respectively, while in the maize, soybean and cooking oil markets they are 16 percent and 22 percent, respectively. Similarly, the differences between the maximum and minimum price in the country are lower for commodities that are deeply integrated across provinces. Buying rice in the most expensive province (Jakarta) can cost up to 64 percent more than buying it in the cheapest province (West Nusa Tenggara), whereas for maize, the price difference can be up to 117 percent.

Up to 70 percent of price differences across provinces can be explained by differences in the degree of remoteness, transport infrastructure, output of the commodity, land productivity and income per capita. Remote provinces pay more unless they have a good transport infrastructure. For people in West Kalimantan, being remote implies paying about Rp 133/kg more for rice than in the other provinces.

The data show that the transmission of price volatility from global markets to domestic markets is incomplete. Exchange-rate variations matter more than world price variations as a determinant of domestic price volatility. After controlling for exchange rates and world prices, remote provinces appear to have a higher level of price volatility than well-connected provinces.

The results of the study suggest that international commodity price shocks are fully transmitted to domestic prices. Thus, their impact on the economy is not just through changes in the prices and volumes of exports and imports, but also through changes in domestic production caused by changes in domestic prices. The results also imply that the economic impact is not homogenous across the country because of the differing degree of integration between provinces. The speed and magnitude of price changes in remote provinces will be generally slower and less significant than in other regions.

The analysis has some important policy implications. It confirms the importance of investment in infrastructure. In particular, it demonstrates that the constraints created by geography and remoteness to the transmission of price signals can be alleviated by improving the quality of infrastructure. This has important implications for food security. Policies that aim at decreasing transportation costs by improving infrastructure or by eliminating bureaucratic impediments to transport will enhance integration within Indonesia and contribute to a reduction in price differentials between provinces. This study highlights the importance of measures to achieve improvements in the productivity of agriculture as a way to reduce prices for consumers, while at the same time increasing incomes for farmers. Finally, the study suggests that government intervention may not be the most effective means of reducing volatility.



Chapter 4

Impact of Commodity Prices on Indonesia's Economy

Chapter 4 estimates the effect that changes in the international prices of food, petroleum, minerals and other commodities have on the structure of the economy, aggregate economic welfare and poverty within Indonesia. The study combines a general equilibrium model of the Indonesian economy with observed changes in commodity prices in 2005 - 08 and long-run projected commodity price increases in 2005 - 20 to examine their different impacts.

It is often assumed that poor people in developing countries have been harmed by the increased price of commodities in international markets over recent years. However, this chapter suggests the opposite conclusion for Indonesia. The short-run effects of the commodity price increases that occurred between 2005 and 2008 were generally positive for Indonesia's poor. These effects derived from increases in agricultural real wages, operator real wages and increases in the real returns to forms of capital owned by the poor. It is true that the prices of commodities consumed by the poor increased, but these negative effects were outweighed by the benefits they received on the income side.

It is estimated that the increases in agricultural commodity prices that occurred between 2005 and 2008 reduced rural poverty incidence in the short run by 2.2 percent, leaving the rate of urban poverty virtually unchanged. Taken together, this indicates a reduction in the overall national rate of poverty of 1.7 percent.

Urban poverty remains unchanged because of the balancing of the positive and negative impacts of price increases on urban dwellers. An increase in agricultural commodity prices also increases the consumer prices of food items that urban residents purchase. On the other hand, these increases affect the structure of agricultural production in a way that influences factor prices, especially by raising returns to unskilled labor and capital items owned by the poor. While increased commodity prices put pressure on the expenditure of urban residents, this effect does not operate through the price of rice, the major staple of Indonesia, because the simulations recognize that domestic rice prices were insulated from international prices by Indonesia's rice import ban. However, the effect does operate through the consumer prices of other, less important, food items. By contrast, the impact on factor prices increases the incomes of the urban poor and alleviates the impact on urban poverty. In the simulations, the two opposing effects offset one another almost exactly.

Indonesia's ban on rice imports shielded domestic consumers and producers of rice from the nine-month spike from March to December 2008. However, it did so at a high cost. The rice import ban resulted in domestic rice prices that were considerably higher than international prices had been since 2004. Thus, a measure intended to protect domestic consumers actually resulted in the imposition of considerable costs on them.

The combined short-term effect of all commodity price increases (energy, agricultural and mining commodities) was a decline in rural poverty of 4.7 percent and a decline in urban poverty of 2.7 percent. Taken together, these figures indicate a decline in the overall national rate of poverty by 4.1 percent. The cash transfer system introduced by the Government to compensate poor consumers for the partial transmission of increased international petroleum prices on domestic prices further accentuated the decline in the rate of incidence of poverty.

With the exception of the economies of DKI Jakarta and Banten province, the short-run effect of all commodity price increases on the economies of the regions of Indonesia was positive, as reflected by significant increases in regional gross domestic outputs. This result is consistent with media reports of impressive increases in the consumption of goods, such as motorbikes and cars, in areas outside Java, due to the wealth created by high commodity prices, particularly in mining and plantations areas. In contrast, manufacturing and services in DKI Jakarta were hurt by the increased cost of commodities (energy, agricultural and mining).

The long-run 2005-20 projected price increases in energy, agricultural and mining prices are smaller than the observed 2005-08 changes and the simulated effects of these commodity price changes were correspondingly less favorable. The simulated long-run impact of an improvement in investment climate in mining is a large increase in aggregate real consumption and a corresponding reduction in the incidence of poverty in both rural and urban areas.



Chapter 5

Managing Commodity Price Shocks in Indonesia

While high commodity prices are in general good news for net commodity producing and exporting countries such as Indonesia, sudden increases in fuel and food prices have a serious impact on consumers, particularly poor households, and on producers, particularly those that make intensive use of commodity inputs in their production processes.

To mitigate the impact of price fluctuations on consumers, particularly the poor, and support some producers, Indonesia has implemented a range of programs and policies since the 1960s to stabilize the prices of those commodities that make up a large proportion of the consumption basket and of those commodities crucial for the economy. The programs and policies implemented by the Government have had mixed success. Some have had unintended negative consequences. In particular, prolonged fuel subsidies have benefited non-poor consumers and limited the ability of the Government to invest in other public needs such as health, education, and infrastructure. The experience, both within Indonesia and abroad, shows that certain other measures are often ineffective or not cost efficient. These include quantitative controls over exports and artificially controlled prices regulated by administrative measures.

This chapter aims to assist policymakers to design more efficient instruments to tackle changes in commodity prices. It starts by examining the impact of high commodity prices and volatility on exporters, consumers, producers and the Government. It then looks at the Indonesian experience in coping with commodity price shocks and ends by presenting policy recommendations for Indonesian policymakers.

The chapter concludes that Indonesia needs to establish a more predictable, better targeted, less costly and more effective approach to mitigate the impact of price shocks. The recent crisis in food prices has shown how critical it is for the Government to have a framework for action. A well-established framework would provide the ground rules for the Government to methodically monitor the evolution of prices; to assess their impact on the economy; to assess available policy options through a cost-benefit analysis; and to properly implement and monitor the adopted measures. Such a framework should involve four major components. The first is an effective price-monitoring system that shares information between the different public and private stakeholders.

The second is the implementation of a system to assess the likely impact of a change in commodity prices on the economy and population. Policymakers need to be able to determine the impact of increased prices, whether positive or negative, on different segments of the population. In rural areas in Indonesia, the majority of households are net food buyers, with only a minority of wealthier households consisting of net food sellers. The poor are overwhelmingly net food purchasers. They suffer disproportionately from increased food prices. Among producers, the impacts of low food prices are at least partially offset by prices and output being negatively correlated.

The third component of the framework involves an assessment of appropriate policy instruments based on a cost-benefit analysis. Policy instruments should be designed carefully with three goals in mind: to protect vulnerable consumers, to maintain and create incentives for producers, and to be fiscally sustainable. Fuel subsidies do not satisfy these criteria: they are not pro-poor and thus it is preferable to replace them with more effective instruments. Some price stabilization measures may make sense when price increases are due to temporary shocks. But if the price increases are due to structural factors, the Government will feel forced to keep the stabilization measures indefinitely, which could prove extremely costly to its budget as well as distortive to the economy. In practical terms, it is often difficult to distinguish when price changes are due to a short-term shock and when they are due to a longer-term structural change. Often, the distinction only becomes apparent with the benefit of hindsight. For this reason, if the Government decides to go down the route of price stabilization, it is best to have a target or trigger price that is automatically correlated with the international market price at any particular time, rather than a permanently fixed target.

The best options to mitigate the impact of price shocks are likely to involve improved social safety net programs, such as targeted cash transfers to poor households, and the smart use of trade policies and import regulations, such as tariff cuts and relaxation of import regulations, and prudent fiscal management. In addition, they could involve measures that help promote market stabilization. These involve measures such as improved infrastructure; greater reliance on private sector stocking; improved legal systems, information networks and standards; and the development of price stabilization mechanisms for the benefit of small holders (for example, index-based weather insurance).

The fourth component of the framework is a monitoring system that tracks the implementation of policy responses to assess their impact so that appropriate adjustments can be made. Not only is it essential to conduct a thorough analysis of options and expected costs and benefits before the implementation of such programs, it is vital to implement a system to monitor their impact after they have been implemented. Policies should be implemented in such a manner that it is possible to review and reverse or revise them if they are found not to have the desired effects.



Chapter 6

Indonesia's Growth and Exports Trends: Macro and Sectoral Perspective

This chapter reviews Indonesia's economic growth and export trends to determine the sectoral composition that would allow Indonesia to achieve high, broad-based growth in the context of high global commodity prices.

It starts by examining Indonesia's long-term macroeconomic trends to determine the main driving engines of growth. It then reviews sub-national growth trends, identifying growth imbalances between varying regions in the 2000s. It also examines the long-term trends affecting Indonesia's exports and their relationship with growth. It then focuses on the performance of export-orientated sectors during the past decade and reviews the main causes of Indonesia's relatively poor performance in terms of achieving a diversification of its exports.

The four principal lessons from this analysis are as follows:

- a. The most striking feature of Indonesian growth in the past four decades is that it has not been labor intensive. Hence, while it is likely that the future engines of output growth will be the manufacturing and service sectors, the evolution of the agricultural sector, where most of the population is still employed, remains crucial in the short run. In the long run, preparing workers to move towards, and participate in, the modern sectors of the economy should be a priority.

- b. Sub-national growth patterns suggest that there is room to improve labor and capital mobility in order to increase labor participation in the dynamic sectors of manufacturing and services, particularly outside Java. This could be achieved by promoting public infrastructure and by implementing other policies intended to improve productivity in the regions.
- c. Manufacturing exports have historically been an engine of growth and diversification. However, since the late 1990s, this pattern has reversed to the advantage of services. Manufacturing export performance since the East Asian crisis has been disappointing, with manufactured exports declining as a proportion of GDP since 2000.
- d. The declining performance of the manufacturing sector appears to be the result of a complex set of interacting causes. The principal external cause has been the emergence of China as a producer of labor-intensive assembled manufactured products. The principal internal cause has been Indonesia's lack of success in encouraging the development of the skills and capabilities needed to move up the value/quality ladder. The causes for this are two: (i) the poor investment climate makes it hard to attract FDI and knowledge from abroad, and (ii) domestic investments to develop a "national innovation system" have been far less significant in Indonesia than among its direct East Asian competitors, particularly Thailand and Malaysia. At the same time, given its large endowments of abundant natural resources, Indonesia has found it much easier to shift its relative specialization towards natural resources and commodities and away from manufacturing goods.

The main policy implication for Indonesia is that it would need to develop a dual strategy involving short-term and long-term components. In the short term, it needs to exploit its natural resources and labor endowments to stimulate a job-intensive growth. Tapping into the potential of the mining sector at a time of high commodity prices could generate the necessary resources to revamp the agricultural sector and help it move towards the production of higher value-added crops. In the long term, Indonesia needs to promote the accumulation of skills and human capital to avoid becoming overly dependent on a few commodities and low value-added/low quality goods.

This dual strategy is likely to require the development of a more conducive business climate to promote domestic and foreign investment, investment in the "knowledge and skills infrastructure" (a national system of innovation), labor mobility, and targeted export promotion services to encourage diversification and upgrading.



Chapter 7

Making the Most of High Commodity Prices for Indonesia's Development

In the wake of the surge in commodity prices and given the likelihood that they will remain high in the mid-term, there has been a significant rethink of the role of commodities in the development of natural-resource-abundant countries such as Indonesia. This concluding chapter reflects this rethink by drawing upon the findings of the previous chapters in order to assess both the development challenges and the opportunities that a greater emphasis on commodity production would entail. In particular, this chapter tries to address the following questions: How dependent is Indonesia on commodity exports? What are the main challenges and opportunities created by a higher specialization in commodities? How has the boom in commodity prices impacted Indonesia's economy? What is the outlook for commodity prices? How can Indonesia best manage revenues derived from the commodities sector for its development? Should Indonesia remain focused on developing its manufacturing sector or should it encourage increased commodity production?

There is little doubt that commodities are of huge importance to the Indonesian economy, borne out by the fact that revenues from commodities accounted for one fourth of Indonesia's GDP and more than one fifth of total government revenue in 2007. Indonesia is also one of the largest commodity exporters in the world and in view of the unexploited mineral reserves that remain to be discovered it can continue to expand its leading position as a commodities exporter. Just to illustrate Indonesia's importance: it has the second-largest copper reserves and third-largest coal and nickel reserves in the world. Indonesia is also the world's largest producer of palm oil, with export earnings totaling almost US\$9 billion in 2007 and providing employment for about 3.8 million people.

The desirability of commodity-led development has long been controversial and the source of considerable debate among economists and planners. An over-reliance of commodities can have

adverse consequences, such as price volatility, governance issues pertaining to corruption, 'Dutch disease' effects, and low levels of job creation. Some economists believe that Indonesia needs to design policies that encourage the development of a labor-intensive manufacturing sector if it is to create sufficient employment opportunities for its rapidly expanding workforce. On the other hand, there is also a strong argument that it makes sense to use the commodities sector to create development opportunities, especially when commodity prices are high and likely to remain so for the medium term. Furthermore, the major commodity producing areas in the outer islands of Indonesia have considerable potential to generate revenues that could be channeled into productive investments to increase the value-added and also the technological content of production, in commodities, manufactures and services.

As the previous chapters point out, the overall Indonesian economy has been a major beneficiary of rising commodity prices over the past decade. However, the Government has missed an important window of opportunity to take full advantage of high commodity prices for its development, using the commodity windfall to a large extent for unproductive public spending. Added to this, the potential supply response to high commodity prices has been stifled by a non-conducive business climate.

Although commodity prices have weakened with the onset of the global financial crisis post-2008, there is a widespread expectation that high commodity prices will remain a constant factor in the medium to long term, although price volatility may also be pronounced. As the global economy gradually recovers from the crisis and demand picks up, so the demand for energy and metals in developing countries will continue to grow, supporting stronger prices of commodities going forward. There is also an expectation that agricultural prices will follow energy prices given the link between biofuels, fertilizers and energy prices.

High commodity prices going forward provide Indonesia with an opportunity to develop a strategy for long-term sustainable high and broad-based growth. Recent economic literature based on international experience concludes that, if well managed, natural resources can be key to development (De Ferranti et al. 2002, Lederman et al., 2007). The empirical evidence strongly suggests that the exploitation of natural resources can lead to prolonged periods of growth and does not preclude the development of manufacturing or other activities. Indeed, international experience from Australia, Canada, Finland, Sweden, and the United States shows that rich endowments of natural resources combined with the pursuit and adoption of new comparative advantages by investing in skills, innovation and good institutions are a recipe for economic growth.

Therefore, it makes good economic sense for Indonesia to rely on its mineral and oil and gas resources to generate the revenues required to develop the rest of its economy. However, the current regulatory environment is not conducive to supporting a boom in the oil and gas and mining sectors. For instance, the January 2009 Law on Mineral and Coal Mining does not appear to constitute an improvement over the previous legislation, as it is perceived by investors as being unclear on key issues. In this case, therefore, the drafting of implementing regulations provides an opportunity to increase certainty and to create a more conducive environment. Such an improvement in regulatory clarity could help to generate a more robust response by domestic and international mining investors to high commodity prices. This in turn would enable the Government to implement an ambitious program to spur broad-based and inclusive development based on the windfall revenue generated by a boom in these sectors.

However, the dangers of Dutch disease cannot be ignored, and so any boom in the mining, oil and gas and palm oil sectors would need to be carefully managed. Failure to do so could cause non-

resource tradable sectors to become less competitive and non-tradables to expand, exacerbating Indonesia's increasing concentration on the export of commodities. This would be undesirable for two reasons. First, the resource sectors are not labor intensive and so concentrating on them would not generate sufficient jobs for the more than two million annual entrants to the workforce. Indonesia's own past growth experience suggests that manufacturing sector growth will continue to be necessary to absorb the expanding workforce. Second, an excessive economic concentration on commodities would increase Indonesia's exposure to boom-and-bust cycles, leading to unstable growth. Consequently, a balanced export structure is the key to a healthy economy.

A resource boom in Indonesia could be managed so as to avoid the dangers of Dutch disease by increasing the competitiveness of the tradable sectors and/or mitigating the exchange rate appreciation. Dutch disease can be prevented by increasing the competitiveness of the tradable sectors to compensate for the loss of competitiveness created by exchange rate appreciation. Given the low levels of technological sophistication and dynamism in the manufacturing sectors, there is plenty of scope for improvement. Dutch disease can also be prevented by controlling exchange-rate volatility through the creation of a sovereign wealth fund to sterilize the boom revenues, while increasing the level of savings in the public and private sectors would also be beneficial.

To this end, the Government would need to consider developing a comprehensive strategy aimed at increasing the competitiveness, technological sophistication and dynamism of Indonesia's tradable sectors. This strategy should focus on improving logistics, fostering FDI flows to attract the skills and knowledge needed, and promoting the development of knowledge industries, particularly in natural-resource-driven activities in which Indonesia has comparative advantages. This will require building new endowments in human capital and knowledge. It will also require the development of better institutions and services to facilitate diversification into higher value-added products and to spur dynamism.

The negative impacts of commodity price volatility on the economy and, in particular, on the poor, can also be mitigated by the Government. Regarding exports, the diversification of export markets and products to reduce export volatility is important. Well-targeted cash transfer measures would limit the impact of price spikes in basic products, reducing the impact of commodity price volatility on the poor. Policymakers can also make use of instruments that decrease transaction costs, encourage supply and reduce price volatility, including reducing bureaucratic obstacles that constrain the transportation of goods and reducing quotas and import tariffs.

Over the medium term, policymakers could encourage the development of market-based instruments that act as price stabilizers, for instance by promoting investments from the private sector in storage and warehouse receipt systems; developing a domestic market for forward contracts; and developing a futures market and index-based weather insurance. The public sector can assist in developing such instruments by fostering an appropriate regulatory environment and providing direct support to overcome market failures in the early stages.

Inequity and governance issues generally associated with greater commodity production can also be mitigated by the Government through redistributing the resource windfall in ways that promote social and political stability. A natural resource boom could increase inequities between Indonesian regions, leading to tensions between regions over increased income disparities. Such a boom could also undermine governance by increasing the opportunities for corruption. Rebalancing revenue sharing between regions and establishing a social welfare system to support the poor would make growth more inclusive and help to reduce the potential for increased political instability.

