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Coping with Commodity Price Fluctuations: Impact on Fiscal and Debt Management

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2015 DMF Stakeholders' Forum

June 3-4, 2015
ADB Headquarters
Manila, Philippines

DEBT MANAGEMENT FACILITY

Outline

1. General observations
2. Choose a selection of commodities (Oil, Iron Ore and Dairy), and examine the effect on a range of countries (Australia, Brazil, Colombia, Malaysia, Mexico, Mongolia and New Zealand)
3. Identify what effect, if any, the fall in price has had on public debt management
4. Conclusions

General Observations

1. In checking the medium term debt management strategies and annual borrowing plans, nearly all government debt managers do not make reference to commodity price risk (exception Colombia).
2. It is more likely that there is reference to commodity prices in the Budget and/or MTFF and in some countries commodity price risks are included in scenario analyses.

Commodity Price Indices

2005-2015

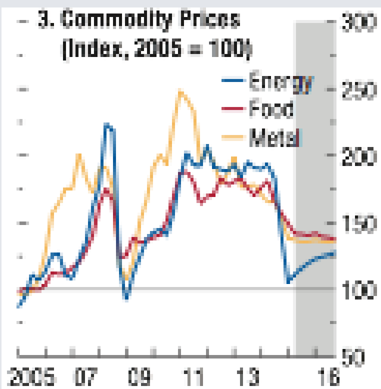
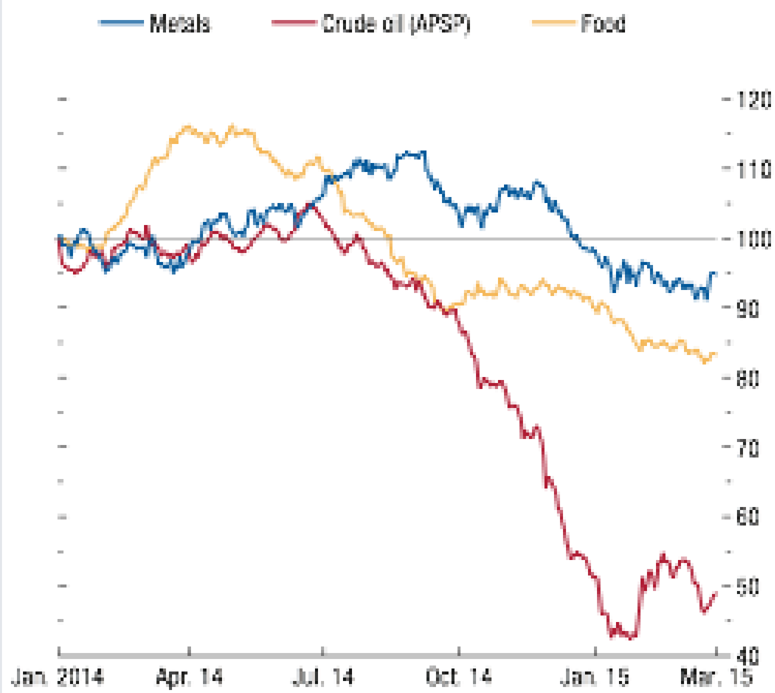


Figure 1.SF.1. Commodity Price Indices
(January 1, 2014 = 100)

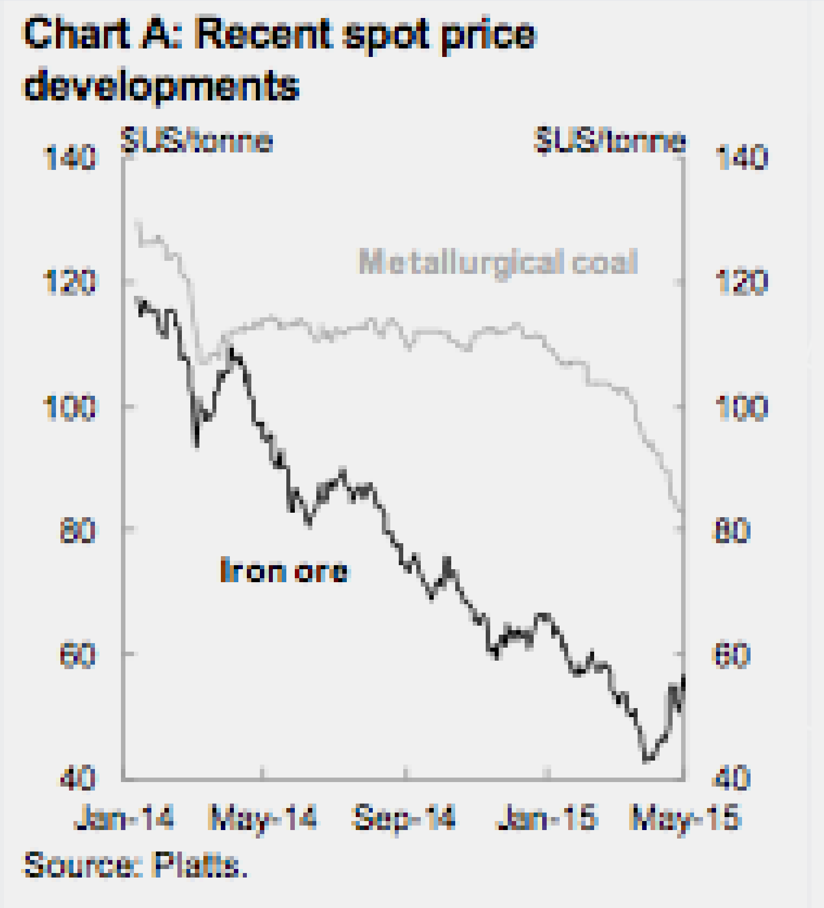


Sources: Bloomberg, L.P.; and IMF, Primary Commodity Price System.
Note: Metals index is a weighted index of aluminum, copper, lead, nickel, tin, and zinc. Food index is a weighted index of barley, corn, wheat, rice, soybean meal, soybeans, soybean oil, swine, palm oil, poultry, and sugar. Data are through March 25, 2015. APSP = average petroleum spot price—average of U.K. Brent, Dubai, and West Texas Intermediate, equally weighted.

January 2014 to March 2015

Sources: Bloomberg and MF Primary Commodity Price System

Australia and the Iron Ore Price Index



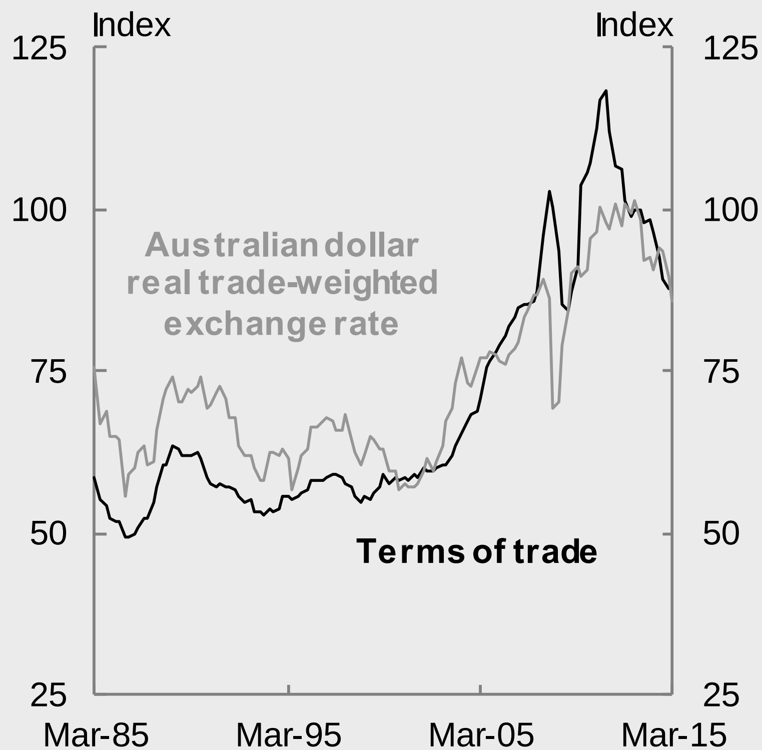
2015-16 Budget

The underlying cash deficit is expected to be $35.1 billion in 2015-16 (2.1 per cent of GDP). Forecast tax receipts have been downgraded by $52 billion over the four years to 2017-18 since the 2014-15 Budget. This has been driven by a near halving of the iron ore price and persistently low wage growth. The fall in commodity prices has contributed to the largest fall in the terms of trade in over 50 years.

Source: Platts, published in the Australian 2015-16 Budget

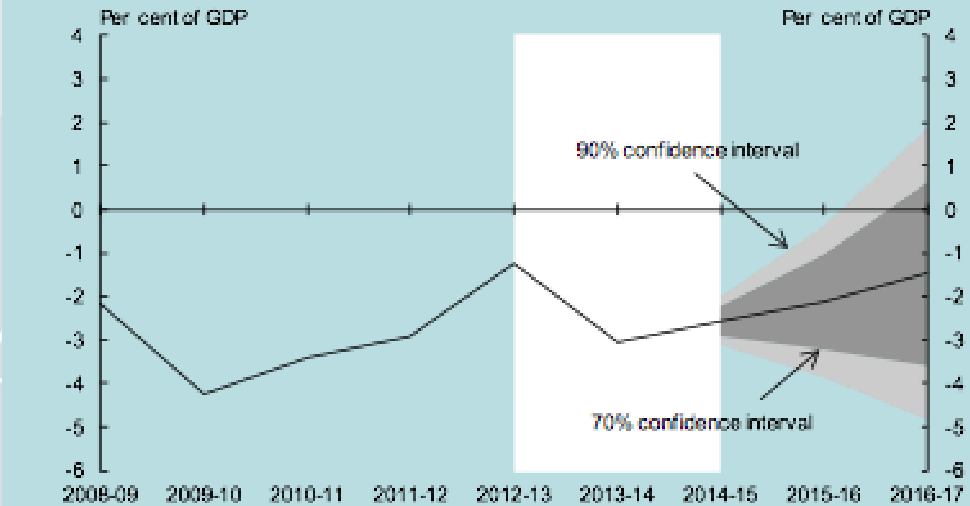
Australia 2015-16 Budget

Chart B: Exchange Rate and Terms of Trade



Note: Index 2012-13 average = 100.
Source: ABS cat. no. 5206.0 and RBA.

Chart 10: Confidence intervals around the underlying cash balance forecasts



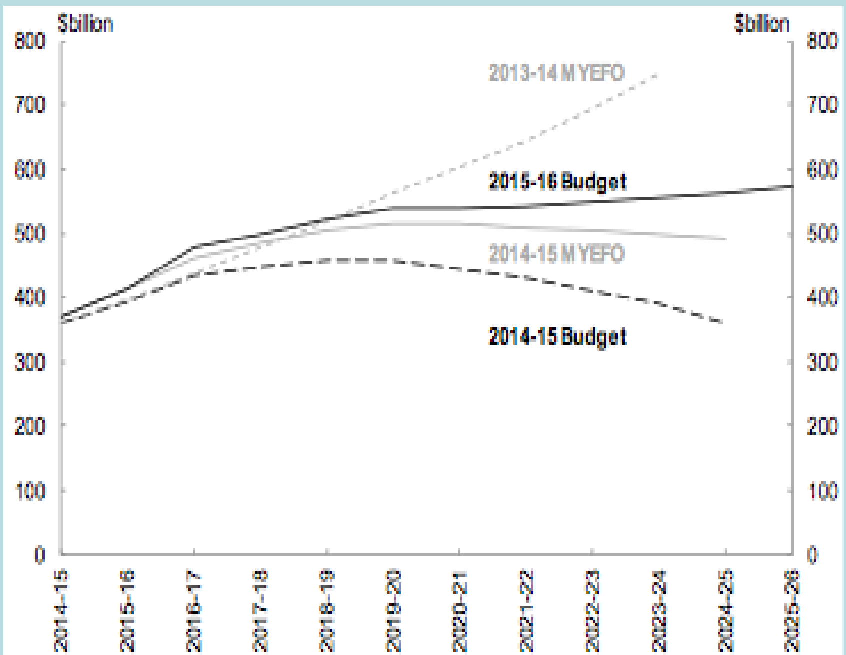
Note: See note to Chart 8.
Source: Treasury.

Sensitivity analysis considers the consequences of a permanent fall in world prices of non-rural commodity exports in 2015-16 to examine the fiscal consequences of a reduction in nominal GDP. The price fall examined is consistent with a fall in the terms of trade of around 4 per cent, which causes a 1 per cent fall in nominal GDP by 2016-17.

Australia 2015-16 Budget

Debt Management Impact:
Increase in the Borrowing Requirement

Chart 1: Face value of CGS on issue projected to 2025-26



Note: A tax-to-GDP cap of 23.9 per cent is applied to these projections from 2020-21, except for the 2013-14 MYEFO where the tax cap applies from 2019-20. 2013-14 MYEFO projections were not originally published with a tax cap.
Source: Australian Office of Financial Management and Treasury projections.

The face value of CGS on issue is projected to rise to $573 billion by 2025-26, reflecting a modestly weaker underlying cash balance, and its associated higher public debt interest expense, accumulating over the medium term.

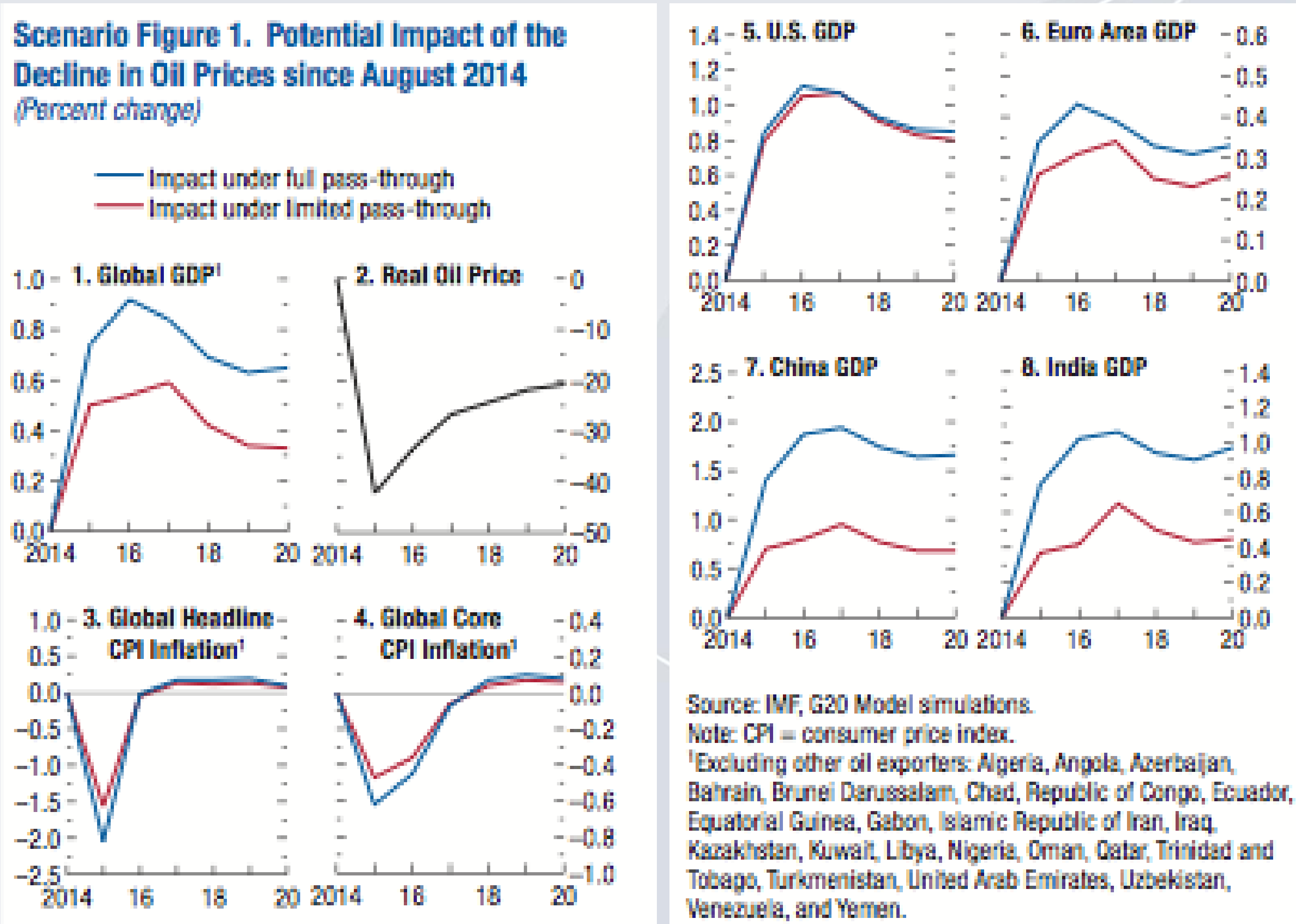
The Australian Office of Financial Management (AOFM) has taken the opportunity to lengthen the CGS yield curve. This has provided for a lower risk profile of maturing debt and has been achieved during a period when borrowing costs have been low by historical standards.

Impact of Mineral Prices for Mongolia

2015 IMF Article IV Consultation Report

- Mongolia's narrow economic base has, however, left the country highly vulnerable to shocks. Minerals account for 90 percent of all exports, and 90 percent of these are bound for China. This lack of diversification has made the economy prone to repeated boom-bust cycles, with the balance of payments falling under intense pressure twice in the past five years, and public finances remaining vulnerable despite a fiscal framework intended to reduce procyclicality.
- Based on the LIC-DSA analytical framework and a broader coverage of public debt than previously used, this debt sustainability analysis (DSA) concludes that Mongolia is at high risk of public debt distress under the baseline scenario.

Impact of Decline in Oil Prices on GDP



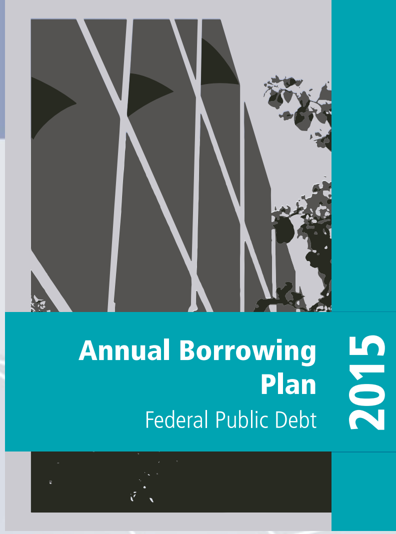
Sources: IMF WEO April 2015

Impact on Brazil

2014 IMF Article IV Consultation Report

- Petrobras, the state-controlled oil major, faces unprecedented difficulties because of external and internal factors
- The recent sharp decline in international oil prices has improved the profitability of downstream operations after several years of losses, but prospects of a sustained period of lower prices and the ongoing corruption investigation are casting a shadow over Petrobras (by end-2014, Petrobras' equity price had fallen by more than 80 percent in U.S. dollar terms over 5 years and its debt levels had increased to be the highest in the industry).
- The Brazilian current account is projected to fall to 3.4 percent of GDP by 2020 – this outlook is based on an only modest recovery in domestic demand and some further worsening in the terms of trade.

Brazil ABP 2015



2015 Scenarios and Borrowing Requirements

- ABP involves three macroeconomic scenarios and, for each one of them, a set of bond issuance alternatives.
- The alternative scenarios consider external aspects that may affect the level of international liquidity, international trade and, consequently, capital and trade flows to Brazil (these factors could jeopardize the domestic adjustments considered in the basic scenario).
- More optimistic hypotheses were also evaluated – these involve the convergence of positive factors required for a more rapid recovery of the economy over the medium-term, the absence of additional pressures on the exchange rate and a favorable outlook for progress in ongoing structural reforms, accompanied by a favorable international scenario.

Impact on Colombia (December 2014)

Statement by the Minister of Finance, 24 December 2014

- The Colombian government slashed by half its crude oil price assumption for its proposed 2015 budget to $48/bl, reflecting falling global oil prices.
- The new price assumption is down from the original estimate of $98/bl for 2015 and sharply lower than the $97/bl Colombia projects for 2014.
- The higher deficit will be covered with increased income from a tax reform approved by Congress in 2014 and signed by the President
- Falling crude prices have cut Colombia's GDP growth expectations to 4.2% for next year, from the previously expected 4.8%.

Outcome (as reported by the Financial Times)

- The currency (COP) has fallen by a quarter and the share price of the national energy company (Ecopetrol) has halved.

Colombia 2013 MTDS

Strategies modeled in the 2013 MTDS

- For 2012, exchange rate fluctuations of ±50% and oil price shocks of 25 USD were considered. The base scenario corresponds to the MTMF, which considers an annual average TRM of COP 1800 and an average oil price of USD 92.
  - ALM-1 Model: Minimizing the deficit's present value volatility
  - ALM-2 Model: Stabilizing fiscal impact (Interest/Revenues)

Government actions in 2015

- Introduced across-the-board fiscal austerity measures.

Outcomes for treasury operations and debt management

- Increase in operational risk through reducing staff numbers and not renewing the alternate data and operations sites.

Impact on Malaysia (January 2015)

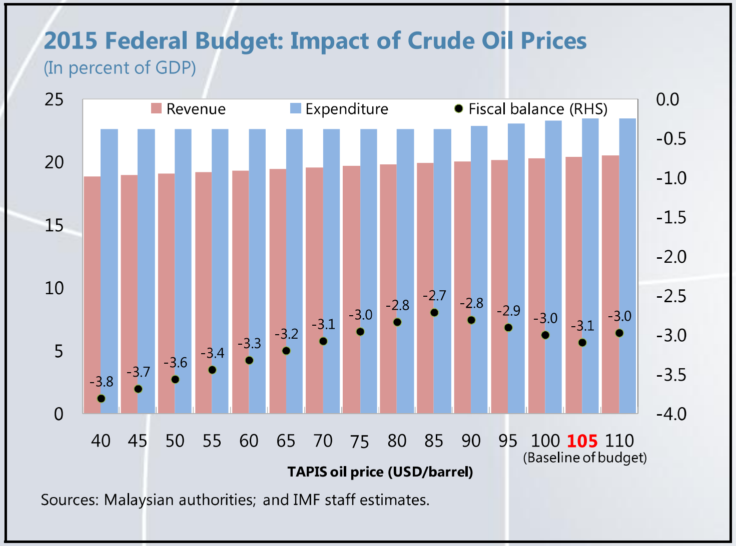
Statement by the Prime Minister, 20 January 2015

- The government's 2015 budget, announced in October, was based on oil prices averaging $100 a barrel but this projection was no longer realistic as global crude prices have dropped by over 50 percent. State oil company Petronas contributes about a third of Malaysian government revenue.
- The government lowered its oil price forecast to $55 a barrel, which will lead to a revenue shortfall of 8.3 billion ringgit ($2.3 billion) despite savings from the removal of fuel subsidies last month.
- The economy is forecast to grow between 4.5 and 5.5 percent this year, while the budget deficit is expected to equal 3.2 percent of gross domestic product. Earlier, the government forecast the economy to expand 5-6 percent and the budget deficit to narrow to 3 percent from 3.5 percent in 2014.

Impact on Malaysia Budget

2014 IMF Article IV Consultation Report

Budget. Lower oil prices, fuel subsidy removal, and GST introduction will all have important budgetary impacts, both on the revenue and spending sides (see text chart). The 2015 budget was formulated with an underlying assumption of US$105 per barrel for Tapis oil, Malaysia's benchmark light sweet crude. Oil and gas revenues (royalties, income tax and dividends) amount to 30 percent of the total. With a projected average Tapis oil price of US $61, savings from subsidy removal are smaller than the reduction in oil and gas revenues, necessitating the Budget revision announced on January 20, 2015. If oil prices remain below this threshold, the revenue loss would be larger and additional measures would be needed to meet the deficit target of 3.2 percent of GDP. A permanently lower oil and gas prices will have a substantial medium terms effects on the budget and fiscal consolidation would have to rely on broad-based taxes, such as the GST, And additional spending rationalization.



Impact on Debt of Malaysia

2014 IMF Article IV Consultation Report

- The authorities recently revised the federal budget resulting in a slight change of the budget deficit ceiling, to 3.2 percent from 3.0 percent of GDP, in a timely and pragmatic response to the sharp recent decline in international crude oil prices.
- Malaysia’s external debt is relatively high at present but is expected to remain on a steady downward trend over the medium term, falling to about 57 percent of GDP by 2019. Stress tests indicate that external debt would remain manageable under a variety of shocks, including weaker GDP growth, a lower current account balance, and a one-time 30 percent depreciation of the ringgit.

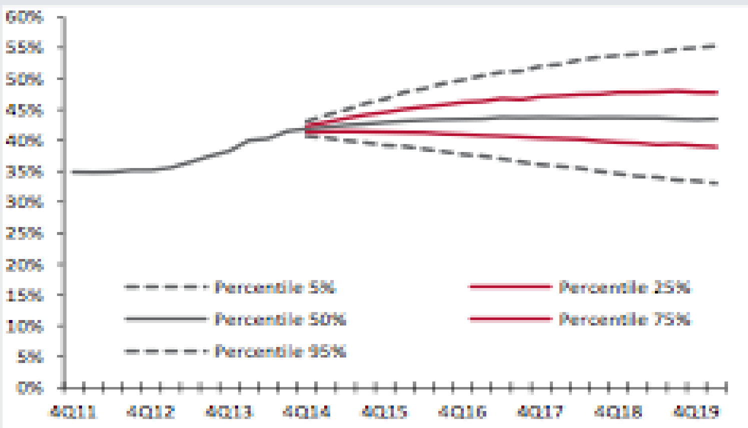
Mexico Debt Strategy and ABP

Public Debt Strategy and Annual Borrowing Plan 2015

- Promote a comprehensive risk management strategy for the debt portfolio, enabling it to face a broad range of shocks that could influence terms of available financing.
- Regarding Cost at Risk analysis and using different metrics, estimates show that with a 95% statistical confidence level, financial cost for 2015 will not deviate more than 3% from its mean value. This means that budgeted expenses will not increase by more than 10 billion pesos. The size of this deviation is equivalent to less than 0.1% of expected GDP for 2015.
- Some more extreme scenarios were analyzed calculating the extreme joint CaR. Under these estimations, considering the average of worst scenarios (those above the 95th percentile of the obtained distribution), the financial cost of the Federal Government debt will not deviate more than 3.76% from its expected value in 2015.
- On debt sustainability analysis, results indicate that the Federal Government and Public Sector debt levels are sustainable for the following years.

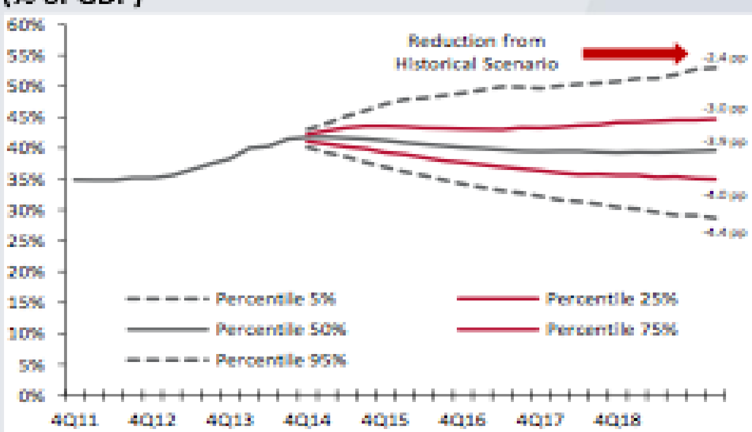
Mexico Debt Management

Figure 33. Public Sector's Debt Trajectories (% of GDP)



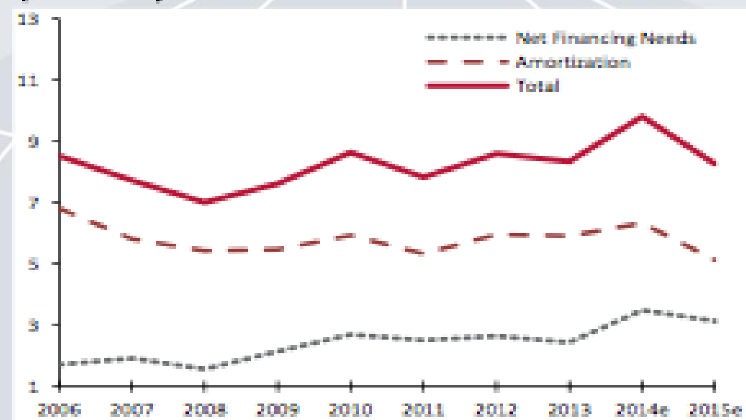
Source: SHCP

Figure 34. Public Sector's Debt Trajectories (% of GDP)



Source: SHCP

Figure 6. Federal Government Financing Needs (% of GDP)



e/ Estimated
Source: SHCP

Table 7. Cost at Risk Metrics (%)

Measure	Cost at Risk	
Relative Cost at Risk	Parametric	Non Parametric
Domestic Debt CaR	2.80	2.21
External Debt CaR	9.67	9.38
Joint CaR		2.96
Extreme Joint CaR		3.76

Source: SHCP

Mexico Hedging Strategy since 2009

- In 2009, the Mexican government implemented oil revenue stabilizing mechanisms by implementing derivative hedging strategies.
- Strategy consisted of purchasing *put* options to be executed when the oil barrel prices fell below the value negotiated by the government (defined according to the Mexican oil production conditions).
  - $57.00 per barrel in 2009
- The effects of adverse shocks to the oil prices on Mexican fiscal accounts were hedged.
- Hedging has continued each year.
  - $76.40 Oil Price Hedge for 2015

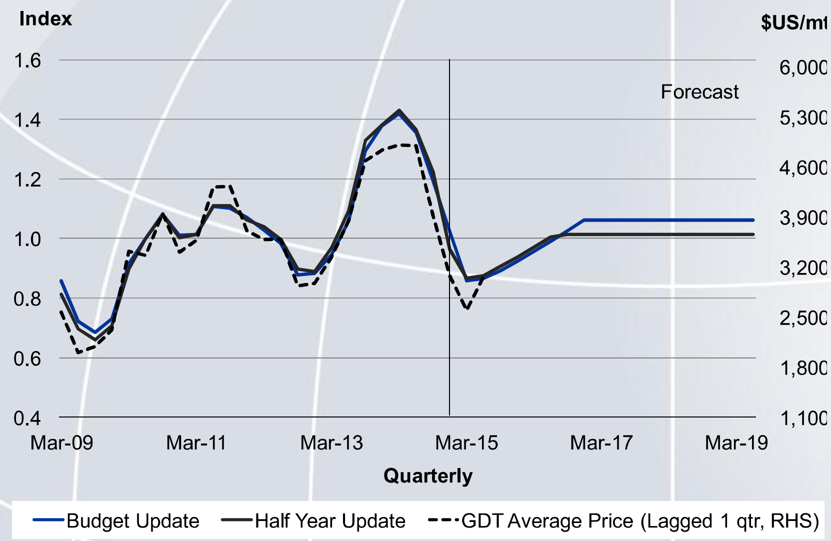
Sources: Financial Times and the Wall Street Journal

GlobalDairy Trade (GDT) Price Index

New Zealand 2015-16 Budget

Dairy export prices are forecast to recover from the second half of 2015 onward at a relatively modest pace (Figure 1.5). Demand for dairy products is expected to pick up as imports into China return to more normal levels. There could be a larger increase in global dairy demand if Russia returns to global markets. However, global inventories of dairy products are high, particularly in the EU, and there is considerable uncertainty over the supply response of EU producers following the removal of milk production quotas. Dairy prices are assumed to recover towards the long-term levels forecast by the OECD-FAO of around US$3,900/mt towards the end of 2016 as supply and demand become more balanced.[3]

Figure 1.5 – Dairy prices



Sources: GlobalDairyTrade, Statistics New Zealand, the Treasury

New Zealand 2015-16 Budget

Scenario One – Lower Trough in the Terms of Trade

Greater weakness in commodity prices and low global inflation…

In the first scenario, world prices for New Zealand's commodity exports fall to a lower level than in the central forecast. The potential key drivers of such a price fall include the impacts of a sharp slowdown in Chinese demand on other Asian economies and Australia. Alternatively, US monetary tightening may lead to falling asset prices, currency volatility and tighter credit conditions in emerging markets, which would also result in lower Asian demand. Finally, global supply of soft commodities may be larger than projected.

Figure 3.1 – Goods terms of trade (SNA)

Sources: Statistics New Zealand, the Treasury

As a result of weaker commodity prices, global inflation remains low for a longer period. At the same time, low nominal interest rates hinder an effective response by central banks to lift demand. Even weaker global inflation flows through to lower import prices for New Zealand, partly offsetting the fall in export prices, but the goods terms of trade are lower than in the central forecast until June 2019 (Figure 3.1), when they recover to the same level.

Case of Australia and New Zealand

Australia		New Zealand
Budget Honesty Act	Fiscal Responsibility	Public Finance Act
Budget MYEFO (Assets/Liabilities)	Fiscal Policy and Reporting (Transparency)	BEFU HYEFU (Assets/Liabilities)
Fiscal Risks Scenarios CLs & CAs	Risk Analysis	Fiscal Risks Scenarios CLs & CAs
		Also LTFP (40yrs) every 4 years

Conclusions

1. Most debt managers do not consider commodity prices or model commodity price risk.
   - Colombia is one exception
2. Commodity prices are analyzed in the Budget and MTFF, not directly but with impact on the parameters such as terms of trade, inflation and growth in GDP.
   - Australia, Brazil Mexico and New Zealand are good examples
3. Some countries hedge commodity prices
   - Mexico is one case using oil price options