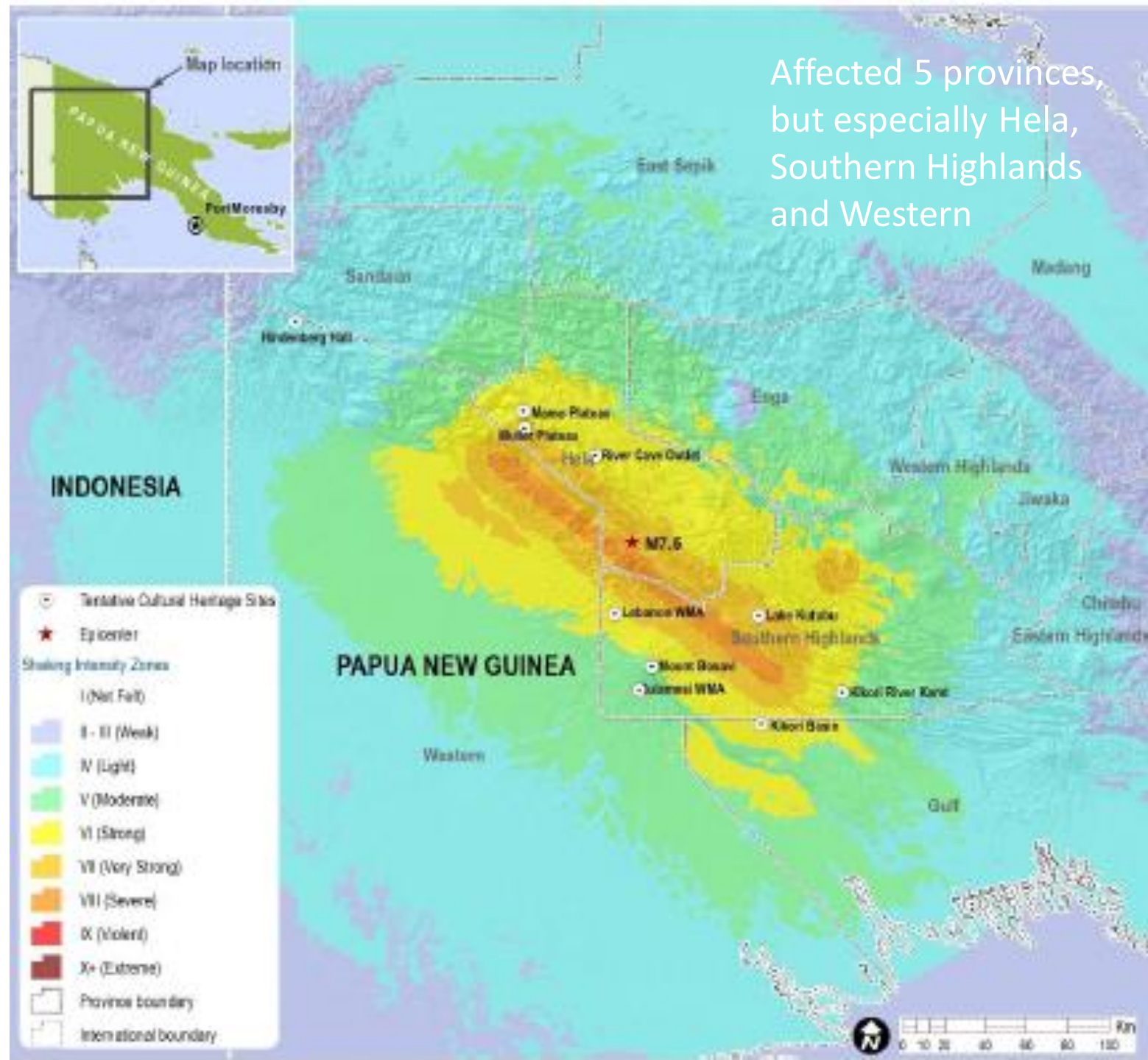


The Hela - Southern Highlands - Western Provinces' Earthquake Disaster of February 26th 2018 - Impact, First Recovery and Looking Ahead

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Map: courtesy of UNITAR



Affected 5 provinces, but especially Hela, Southern Highlands and Western



Massive and Extensive
Physical Impact in the
vicinity of the Epicentre (and
from the subsequent
incessant aftershocks)

BERNARD
JAMES
MCQUEEN via
REUTERS



Immediate relief operations provided particularly by missions and companies operating in the affected areas, including MAF and companies like Oil Search. Photo: courtesy MAF

Impact upon:

- Local Lives and livelihoods (housing, shelter, food/cash crop gardens, trauma – including from continued aftershocks, and the wider local economy, community relationships- conflict);
- local infrastructure
- National economy GDP
- Employment
- Revenue –short and longer term
- Exports and Foreign Exchange earnings (imports of oil etc)
- Restoration and cost of restoration

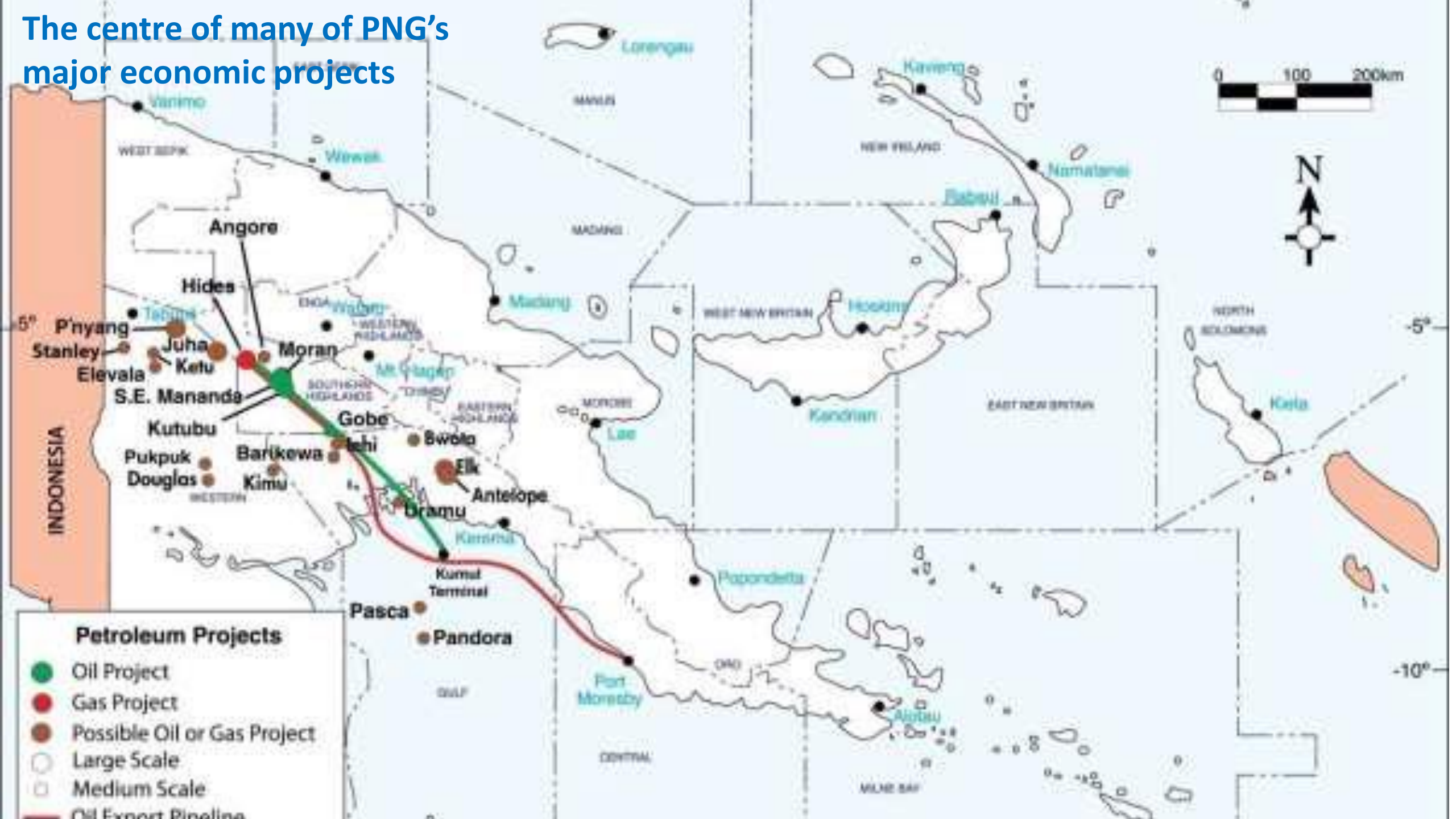
(from NDS & UN Office for the Coordination of Humanitarian Affairs -20 April)

- Many (some 150) deaths from initial quake, the number to be clarified, but over 18 died during aftershocks alone
- 270,000 people are in need of assistance across four provinces of Papua New Guinea's highlands
- 11,041 households (42,577 people) remain displaced in nine care centres.
- Over 38,000 callers listened to automated voice messages providing life-saving assistance in 2 weeks
- 181 cases of gastrointestinal and diarrheal diseases due to poor water and sanitation reported from nine health centres in Hela and Southern Highlands.
- 62 children in Southern Highlands province screened for Severe Acute Malnutrition; 2 hospitalized.
- Humanitarian operations in and around Tari, provincial capital of Hela province, remain suspended

Four of the country's major extractive resource projects being closed for extended periods (companies can update or correct my data), notably:

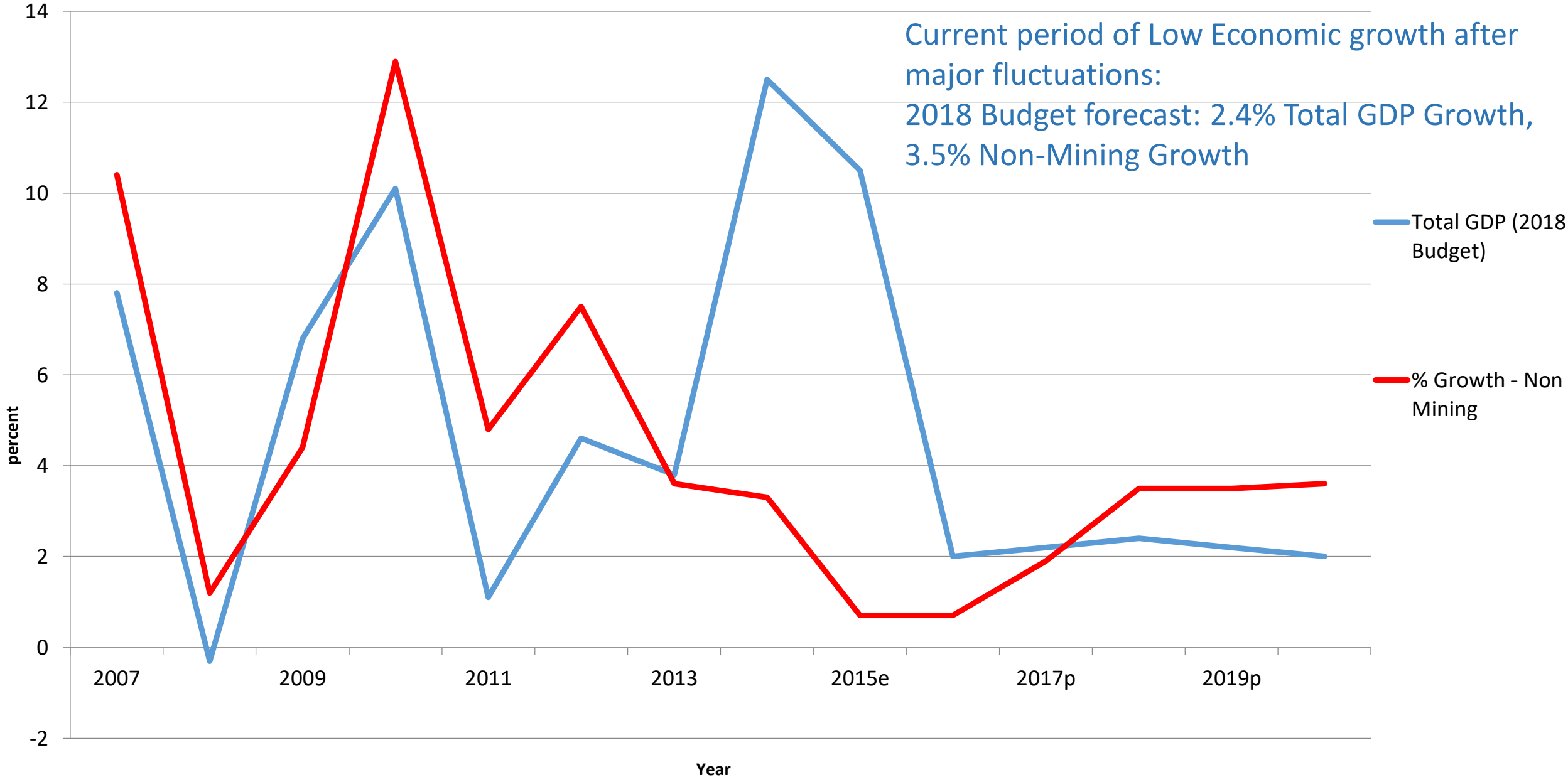
- **PNG LNG** for nearly 7 weeks, and build up the rate of production (now 2 trans)
- **Kutubu Oil** (and associated fields, plus condensate production) for 5 weeks, recommencing production on 3rd April, starting at 4,000 barrels/days
- the **Ok Tedi** copper and gold mine in WP, for just over 2 weeks, following landslides and damage to 3 pipelines, albeit that the interval was also used as an opportunity for outstanding maintenance), and
- the **Porgera** Gold mine, which although some 83 kms from the epicentre of the quake, was largely affected by the loss of its main power source, namely the Hides gas power plant in Hela, which was so severely damaged that it's forecast to take some 8-12 months to restore. Increased diesel generating capacity has been brought in, raising back up output from 10 to 22MW, but this remains substantially inadequate to restore the main processing (crushing etc) capacity.

The centre of many of PNG's major economic projects



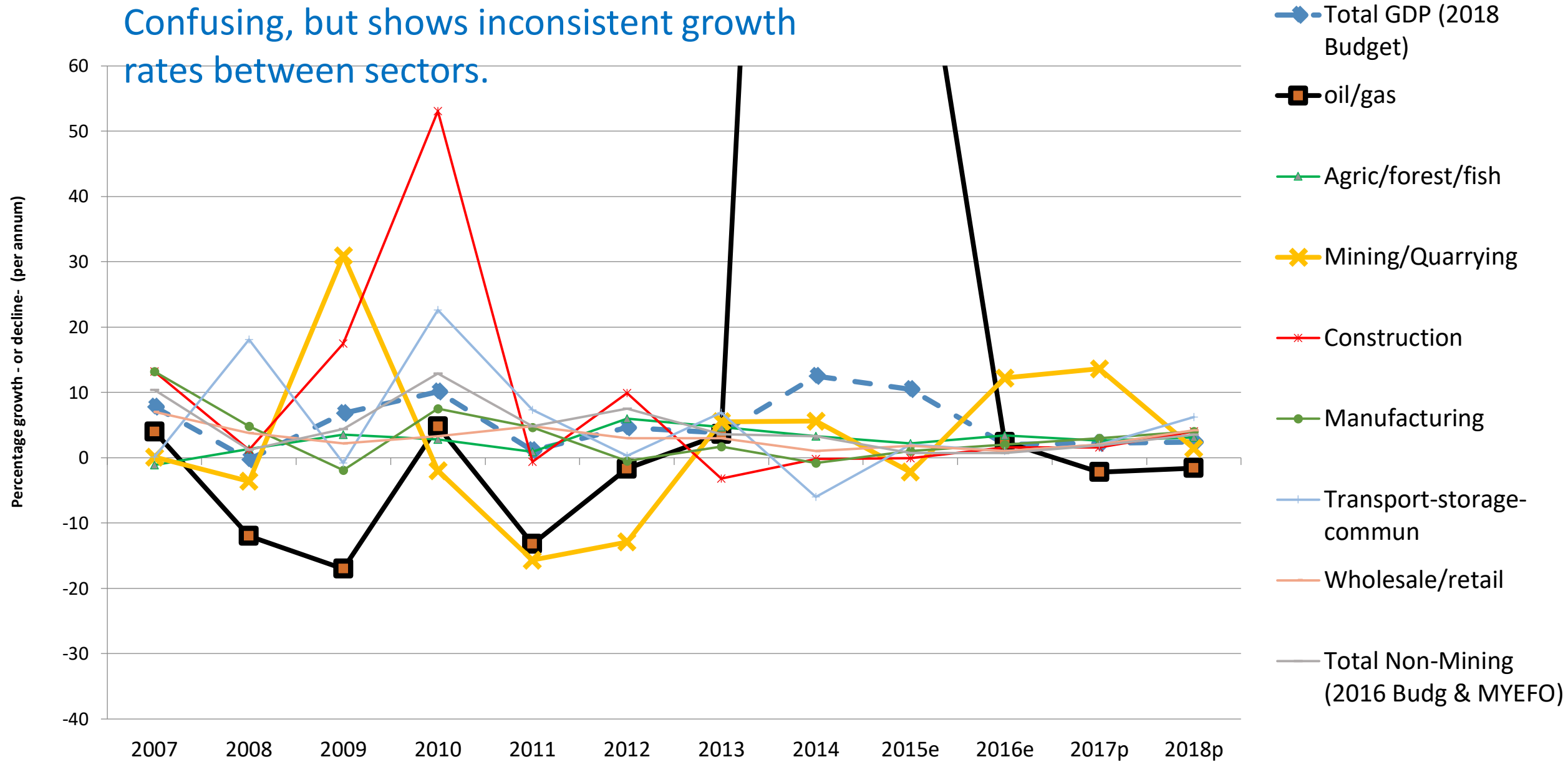
GDP Growth Rate 2007-2020

(data: NSO to 2014, Treasury Estimate and Projections since 2015)

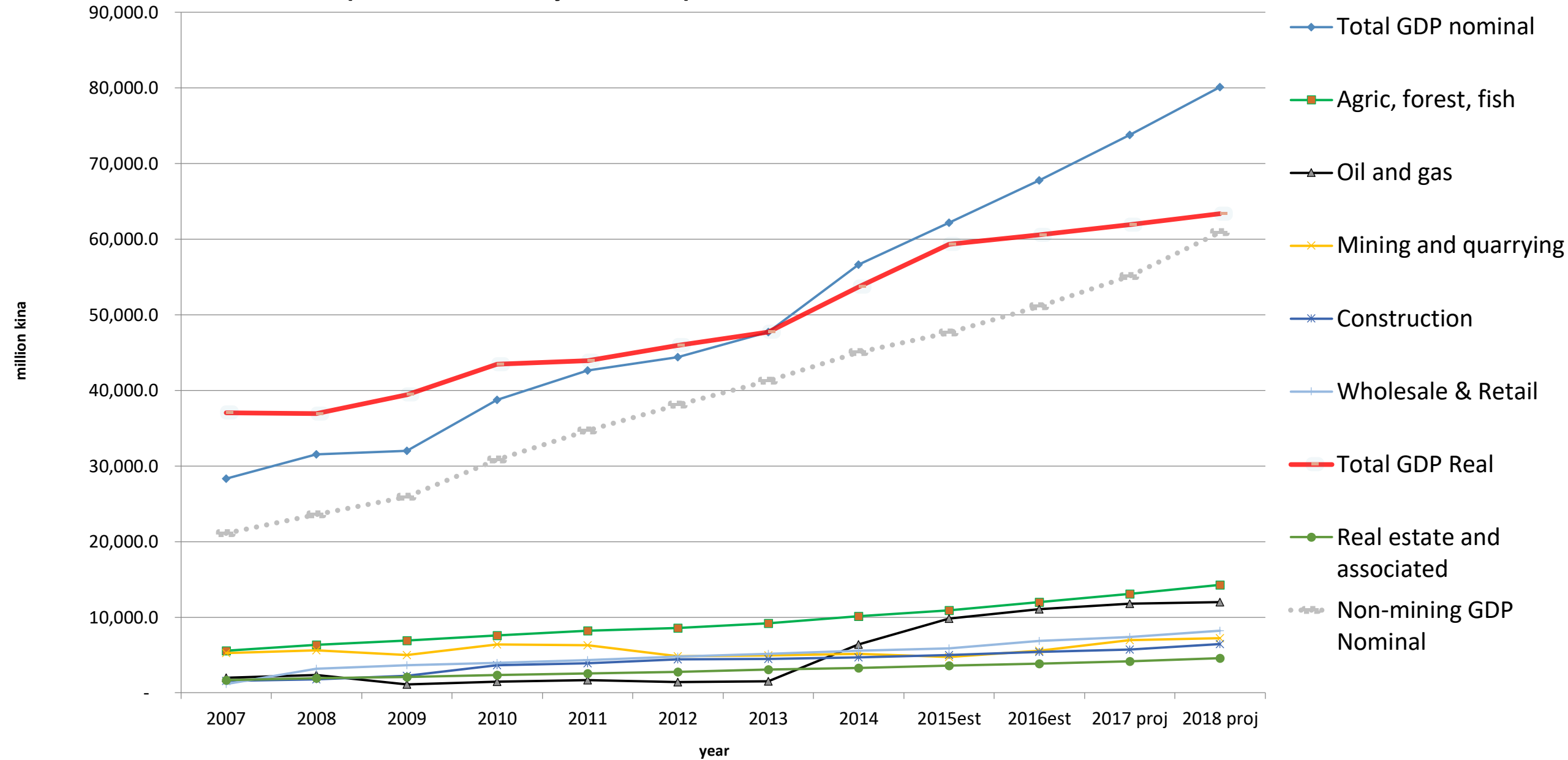


Growth Rates (GDP) by Sector (Treasury est. and forecasts 2007-2018 Budget projn)

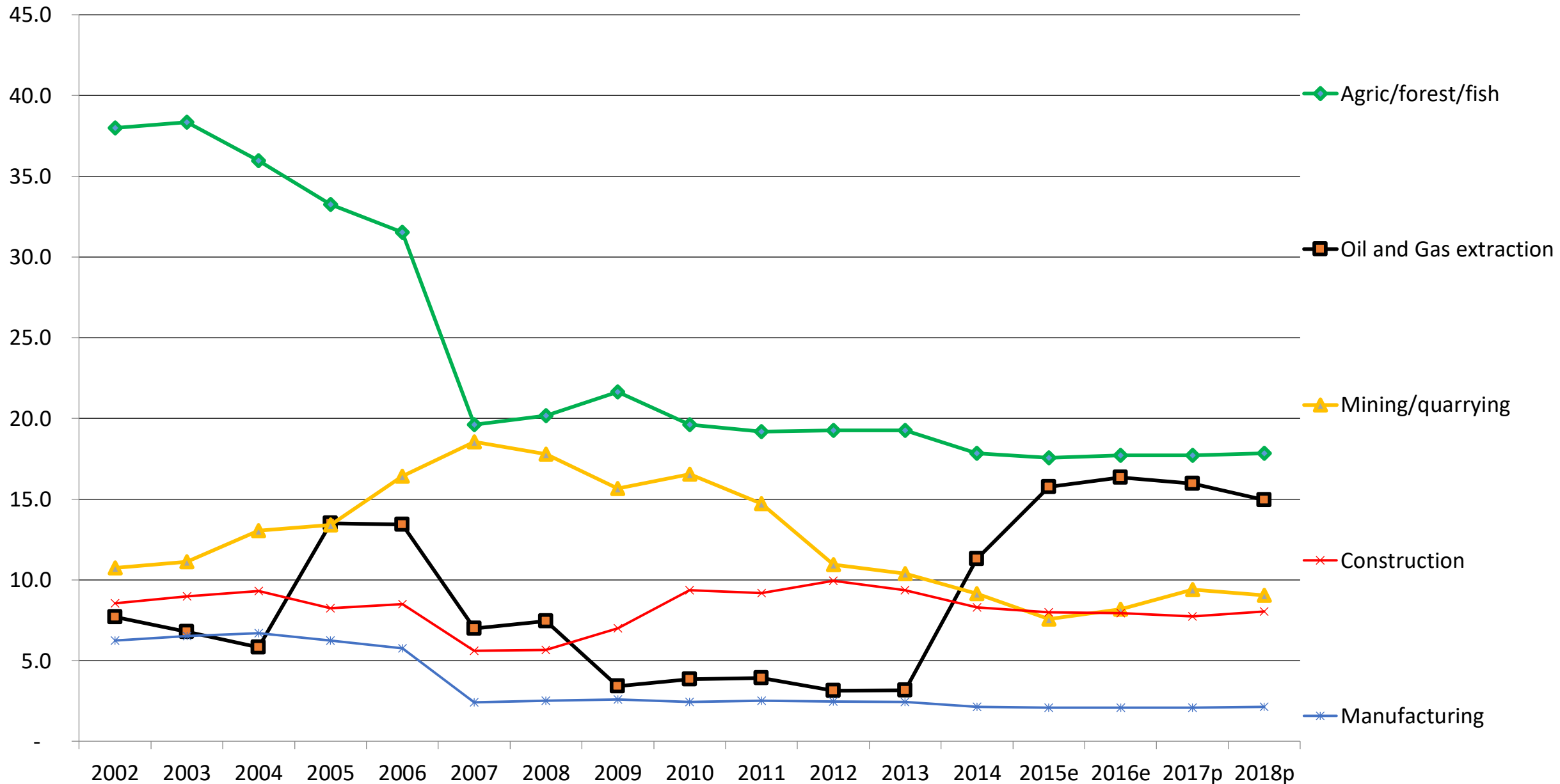
Confusing, but shows inconsistent growth rates between sectors.



GDP at current and constant prices 2002 - 2017 (NSO & Treasury forecast)

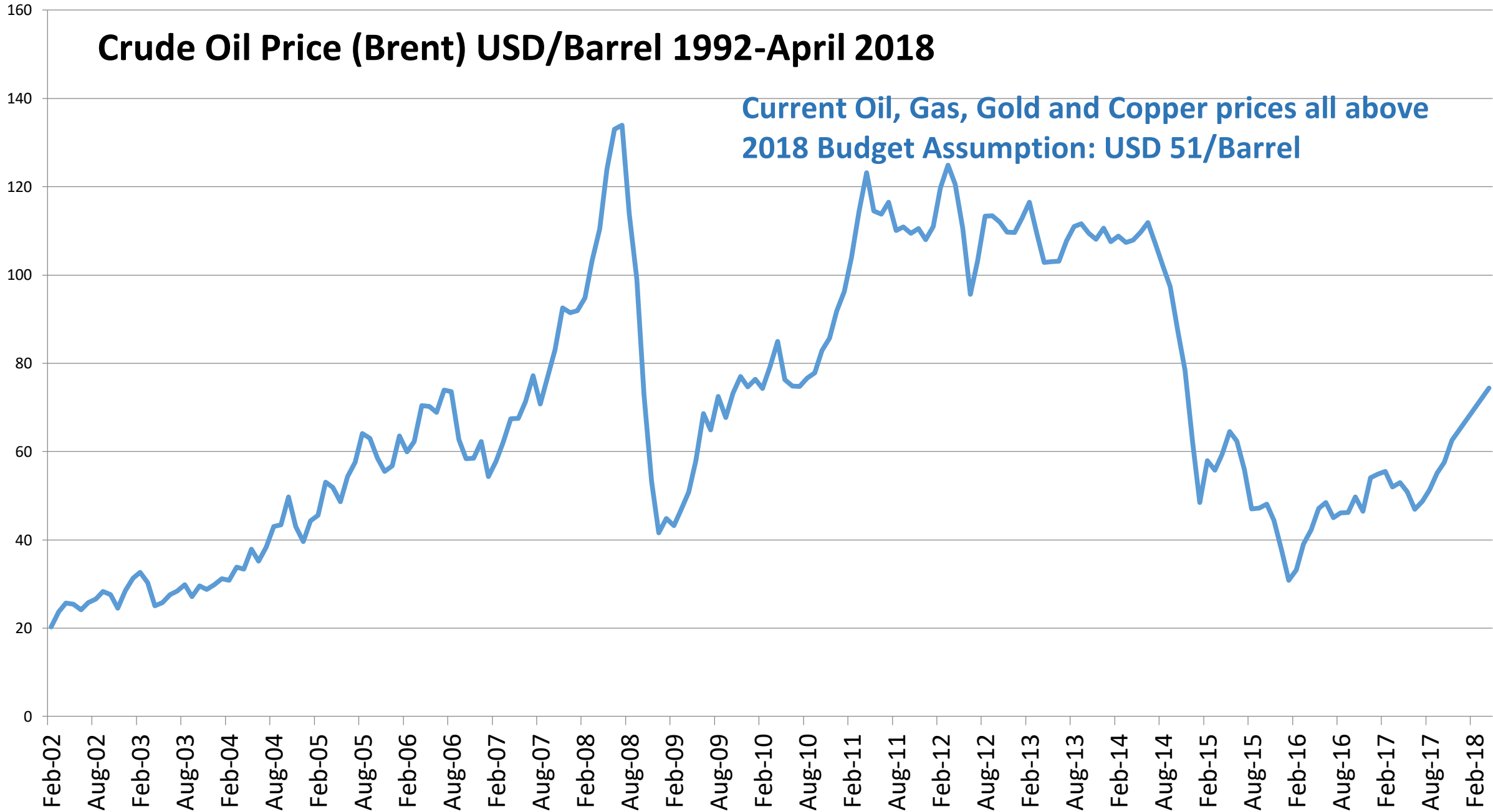


Percentage of GDP by Economic Activity- (estimate 2015-2016, NSO & Treasury forecast 2017 & 2018)



Crude Oil Price (Brent) USD/Barrel 1992-April 2018

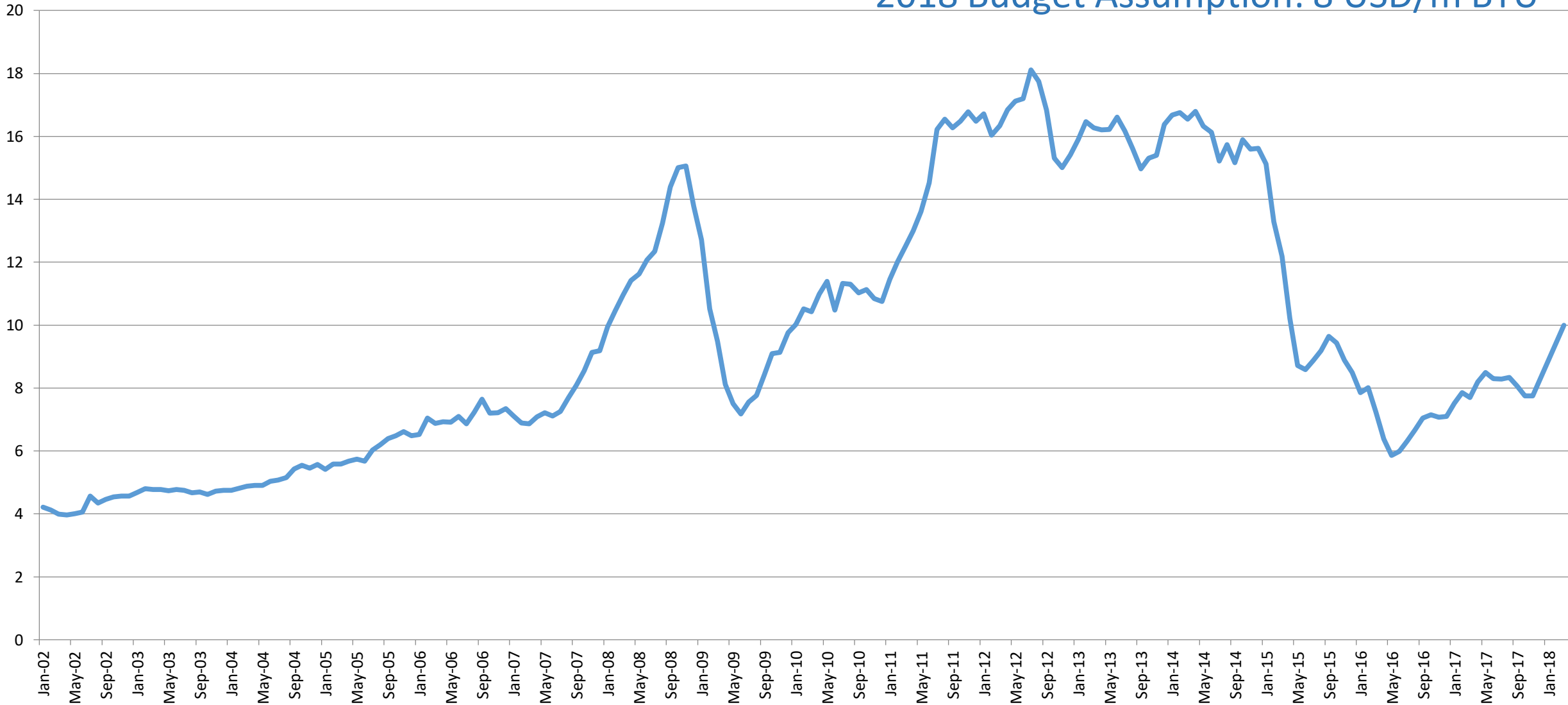
Current Oil, Gas, Gold and Copper prices all above
2018 Budget Assumption: USD 51/Barrel



LNG (Indon) Prices USD/mill metric British thermal unit

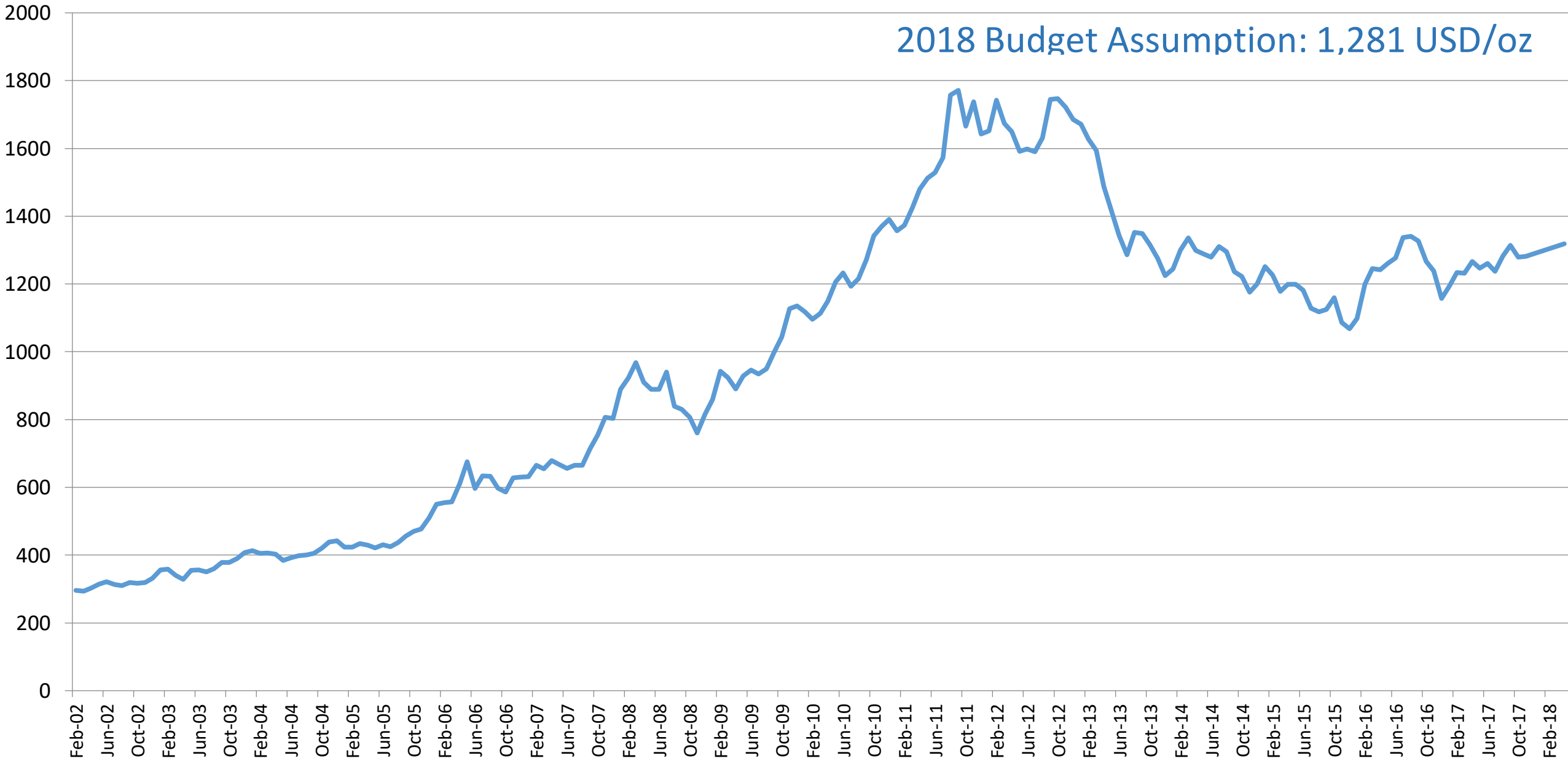
2002-Mar 2018

2018 Budget Assumption: 8 USD/m BTU



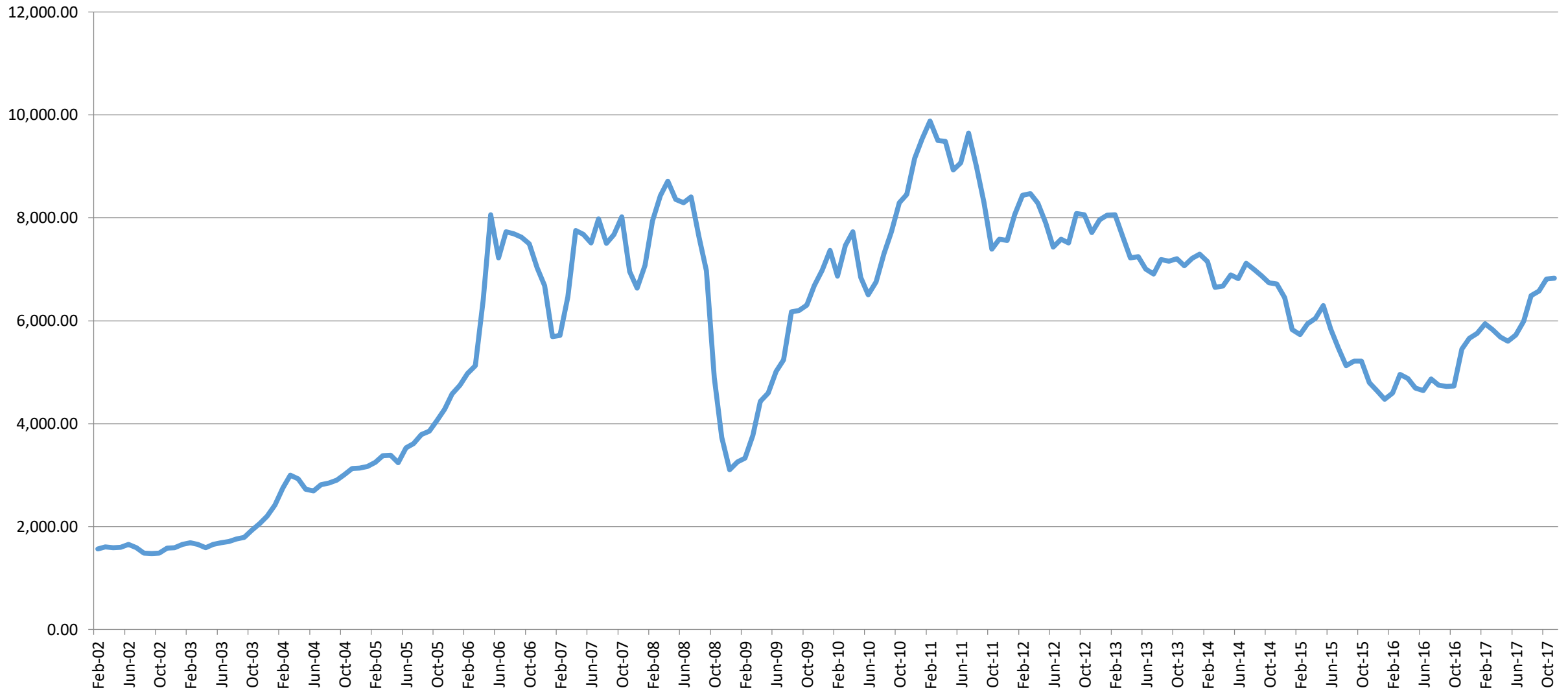
Gold Price USD/troy ounce

2002-Mar 2018

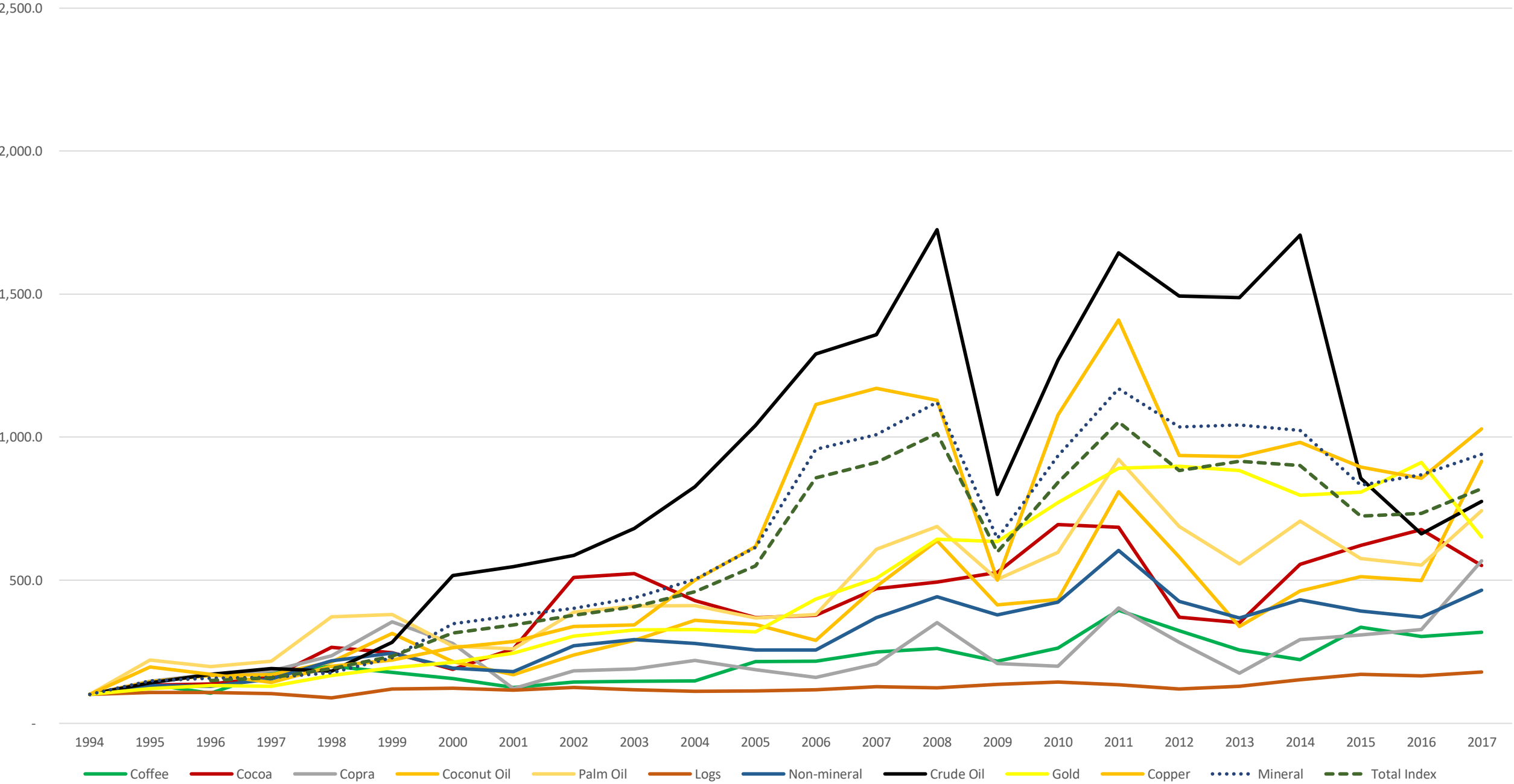


Copper Gde A USD/tonne 2002- April 2018

2018 Budget Assumption: 5,960 USD/tonne



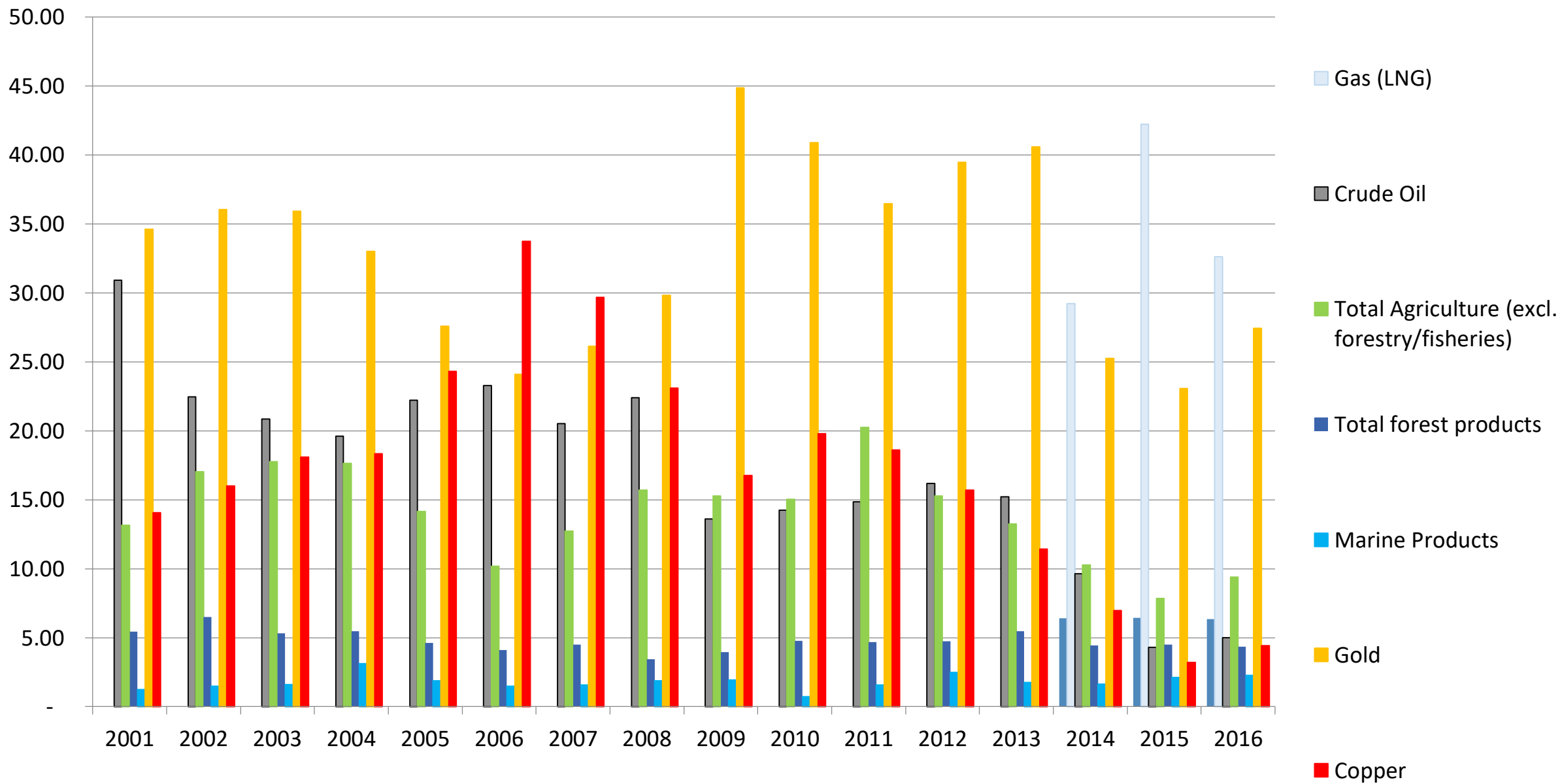
Commodity Price Index 1994-3rd Qtr 2017 (1994 base year- BPNG)



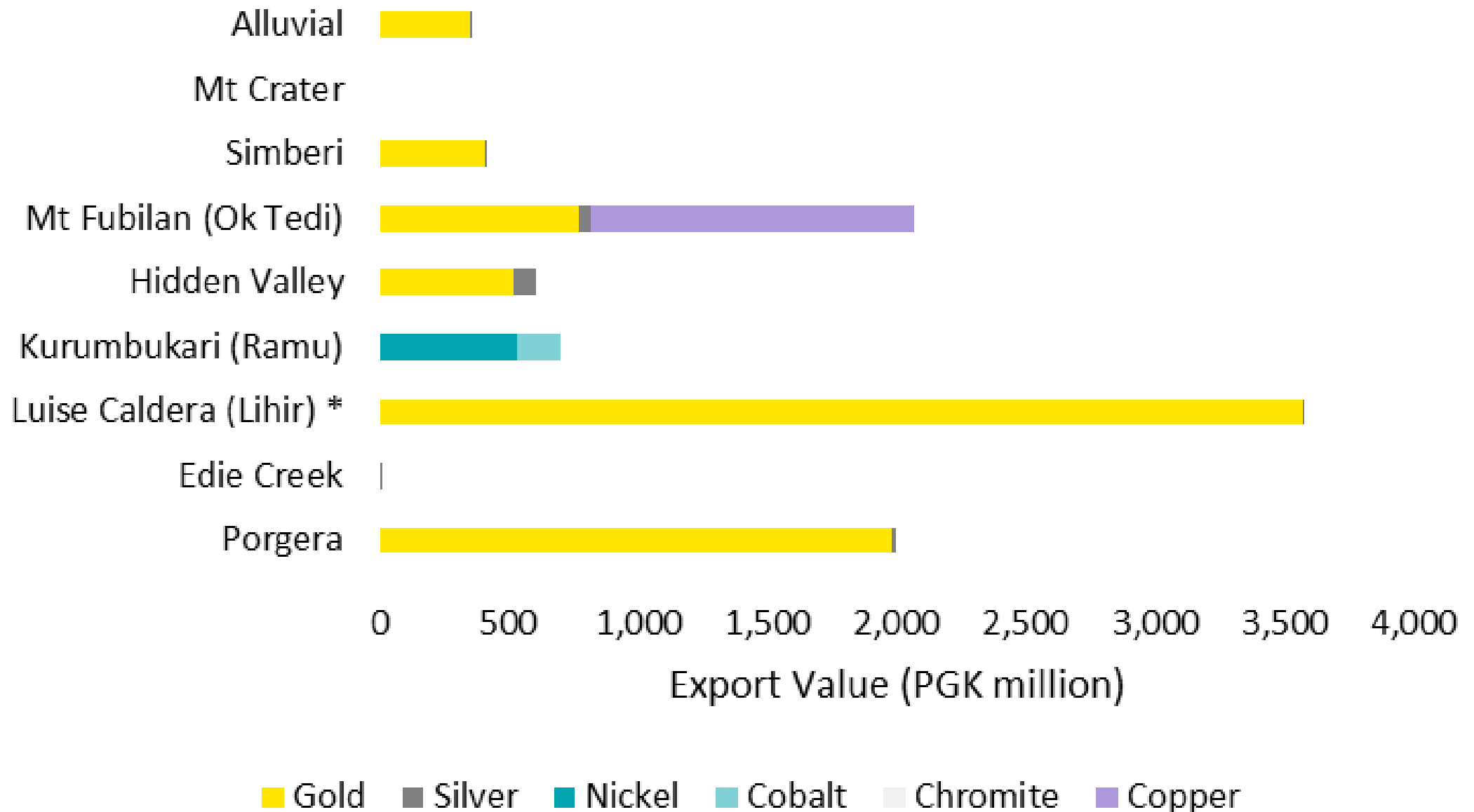
- Treasury Forecast: 2.45 Total Growth and 3.5% Non-Mining Growth in 2018
- Mining is deemed to contribute 9% of Total GDP and oil/Gas 15% in 2018
- Oil and Gas was estimated in the Budget to shrink 1.6% in 2018 and Mining to grow 1.4%
- Commodity Prices have improved significantly for minerals and oil/gas during 2018 on Budget assumptions, particularly oil, gas and copper (less so gold, which was already relatively strong)
- Extended reduction in gold production from the country's 2nd largest gold producer (Porgera), and a brief discontinuation of gold and copper production from the 3rd largest gold mine and only copper mine, will significantly reduce the mining contribution to GDP growth (and portion of GDP made up by mining) during 2018, despite the higher prices (if sustained)...although recovery in 2019
- 7 weeks of halted gas/LNG production, and 4 ½ weeks cessation of oil and condensate production and then phased recovery to full production, will further reduce the oil/gas contribution to total GDP and GDP growth, but only by a relatively modest amount if full production is regained in the near future, and improved prices sustained (and achieved in the light of longer term contracts).
- Restoration efforts in the affected provinces, with some level of additional external support, as opposed to transfers from internal sources, should contribute to stimulating economic activity and growth
- Overall, on those assumptions, and assuming that conflicts (and discontent over LNG benefit streams) are addressed promptly and not allowed to fester, the Total Growth rate should still be sustained above the 2% level, down from the forecast 2.4% and driven largely by the non-mining sector; (If the non-mining sector is not further undermined by other factors, including the lack of Foreign Exchange, etc)
- It should be noted, however, that GDP and GDP growth remain rather ephemeral concepts, when the flows are not translated substantially into revenue, retained foreign exchange earnings (up to a restrained ceiling), extensive local employment generation, and related benefits (beyond the construction phase)

% of Total PNG Exports - by Value 2001-2016 (BPNG) -

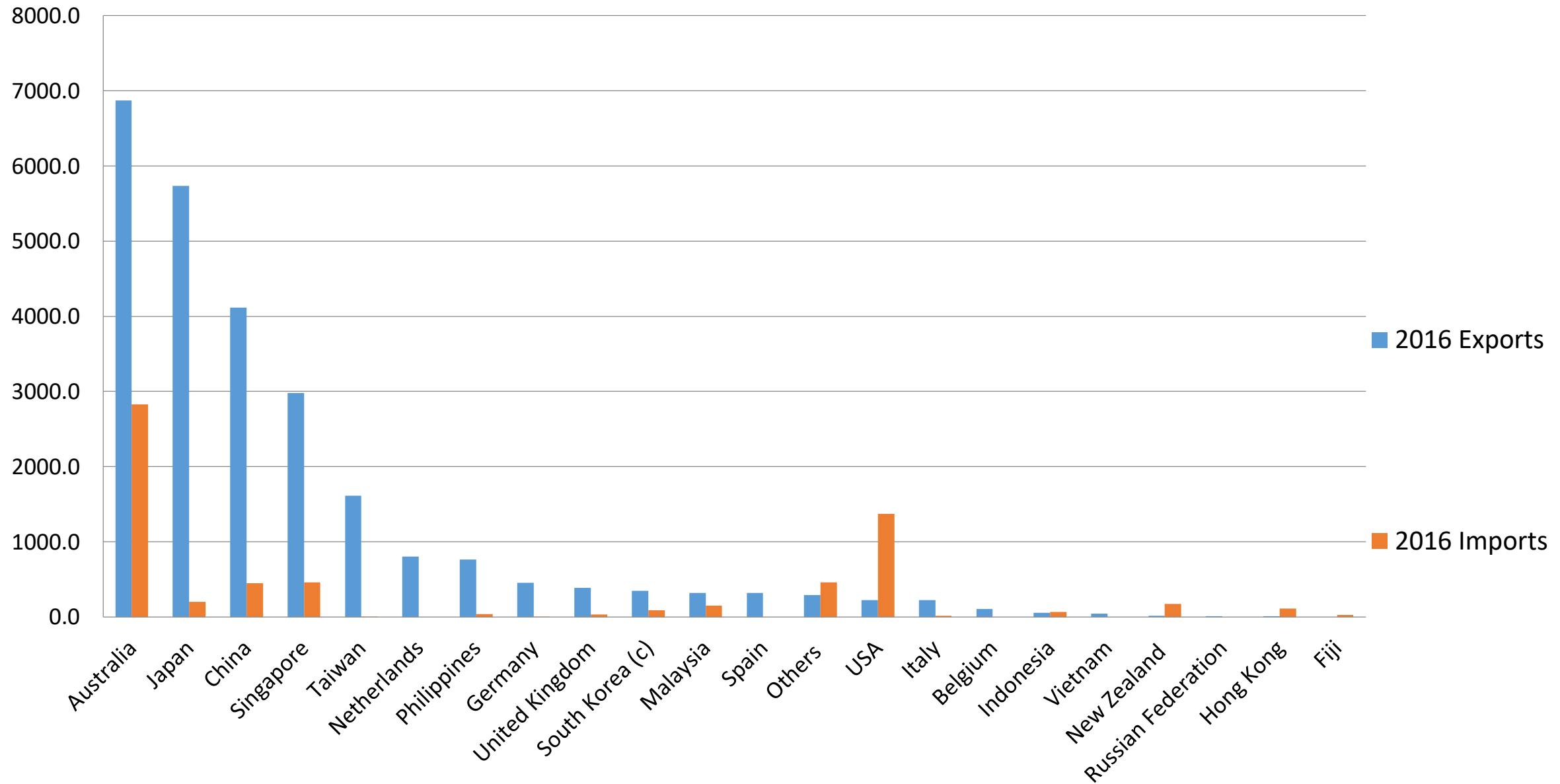
Percentage



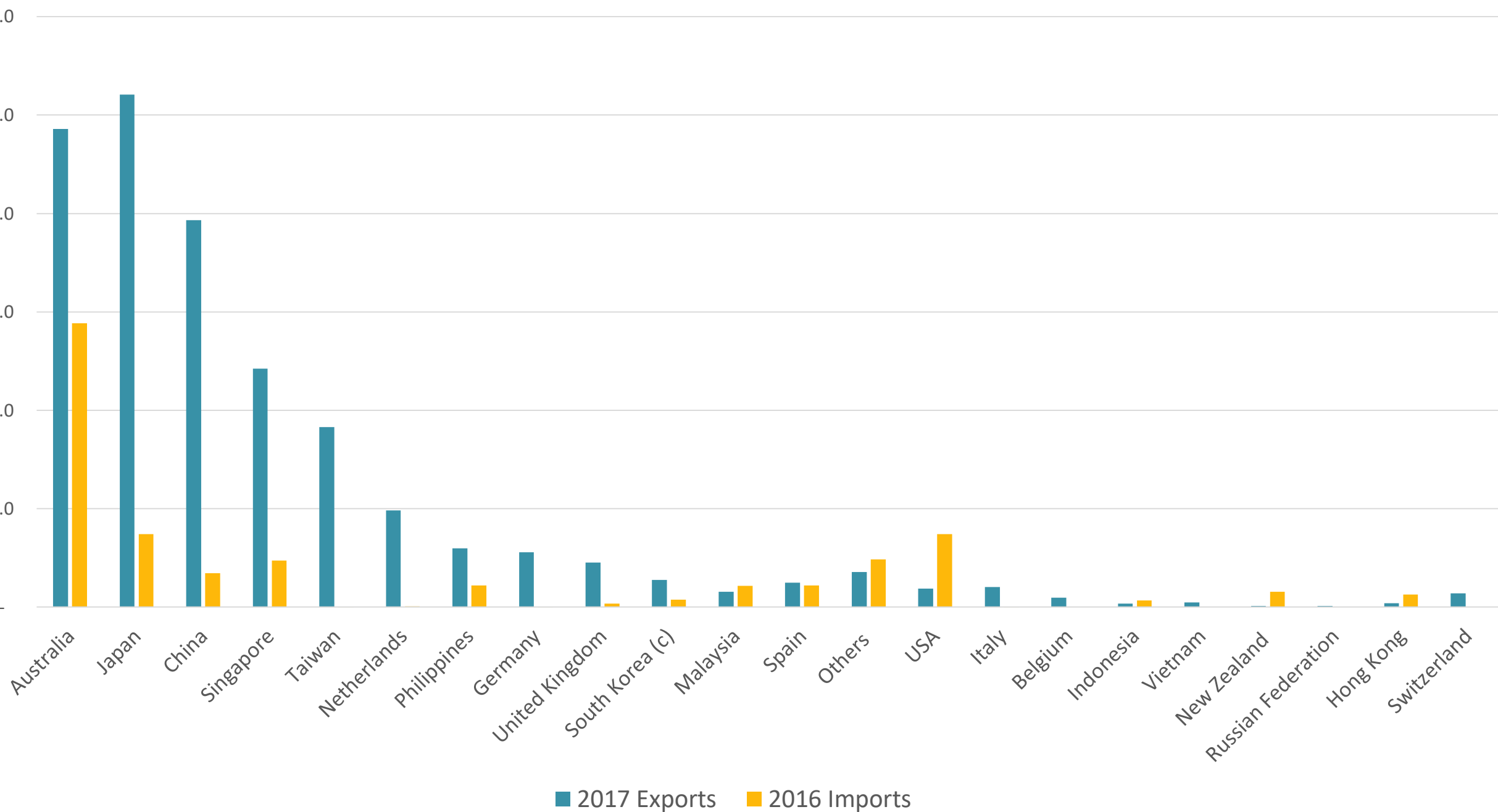
Export values reported for each mine – 2016 (EITI Report 2016 – E & Y)



Balance of Trade to Main Destinations and Sources - 2016 (Kina mill, BPNG)



Balance of Trade to Main Destinations and Sources 2017 (3 Qtrs) - Kina mill (source BPNG)



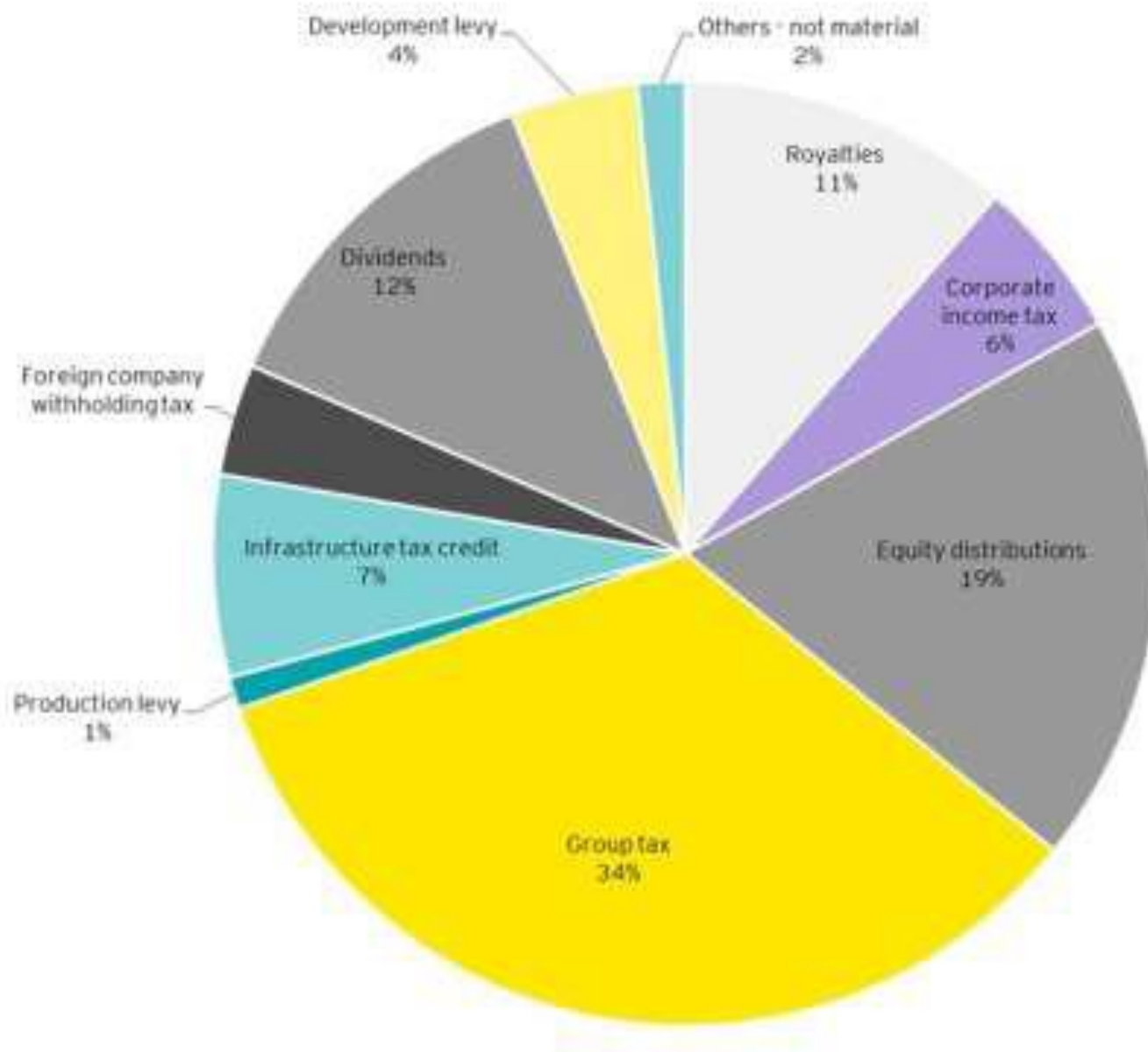
Contribution of the mining and oil and gas sectors to government revenue in 2013-2016 (from the EITI 2016 Report: E & Y)

| | <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> |
|--|-------------|-------------|-------------|-------------|
| Total tax and non-tax revenue (excluding grants) | 9,028.9 | 10,975.7 | 10,183.6 | 9,948.2 |
| Mining and petroleum tax | 666.0 | 864.0 | 195.4 | 21.9 |
| Mining and petroleum dividends | 0.0 | 507.2 | 456.4 | 300.0 |
| Contribution of mining and petroleum in government Revenue | 7.38% | 12.49% | 6.40% | 3.24% |

The earthquake’s impact on GDP may not be too severe in 2018, with potential recovery beyond 2018; But GDP emanating from some projects in the extractive sector is not the yardstick (having limited real impact on the broader economy during the production phase); what about its impact on Revenue and Foreign Exchange?

From the figures above it’s clear that, unlike expectations of growing returns and even dependence upon the Resource Sector, for various reasons the State been gaining a declining, and certainly disappointing level of revenue from Oil, Gas and Mining. Commodity prices may have been down, but not really for gold and have still been at, or above project budget forecasts. Nevertheless, although the mining and oil/gas industry may be providing limited corporate tax and dividends, the mining industry, especially, is generating extensive formal employment and associated salaries and wages taxes.

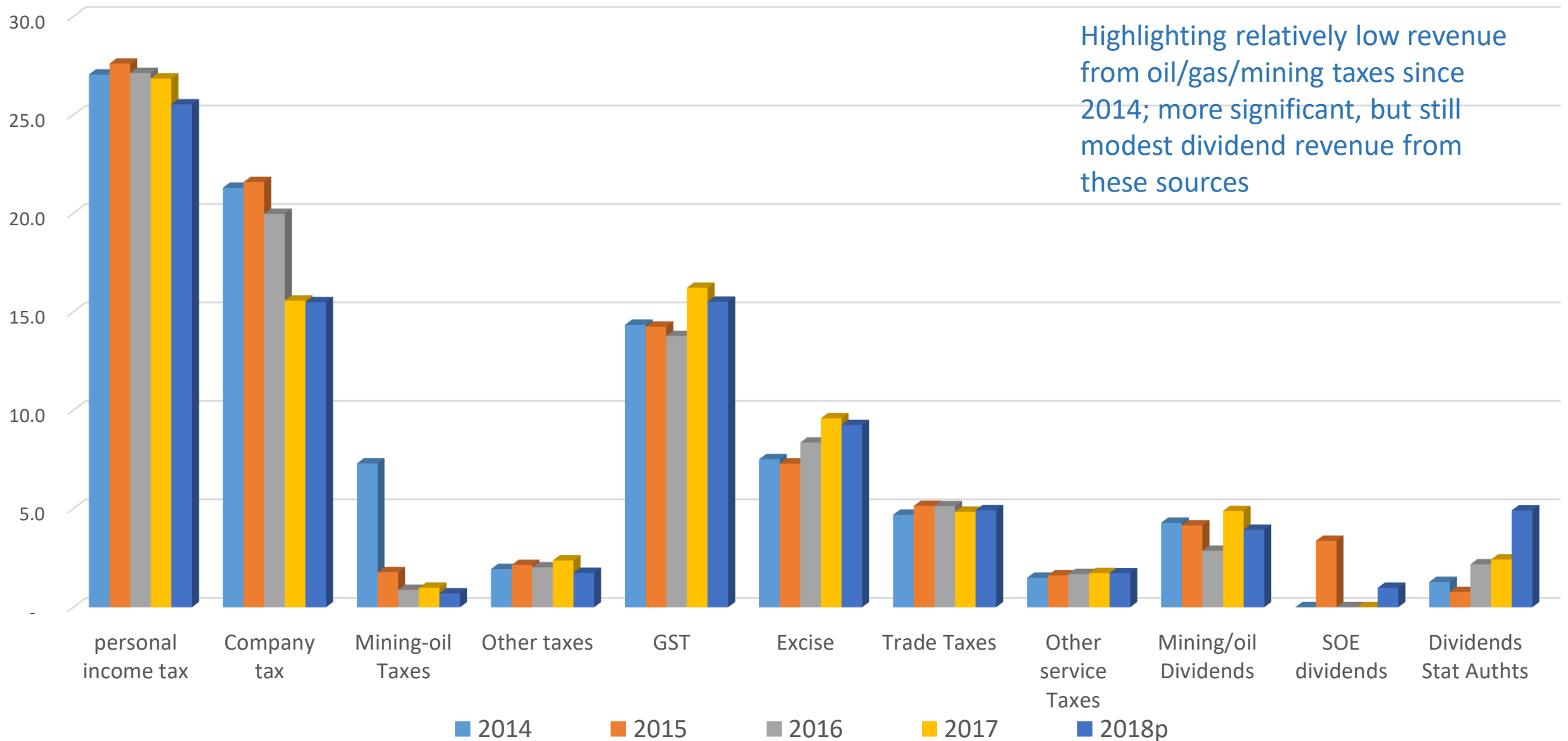
Relative contribution of revenue streams from the extractive industries 2016 (EITI Report 2016, E & Y)



So: the largest sector revenue in 2016 was from Group Tax, Dividends, Tax Credit and other sources, rather than corporate tax

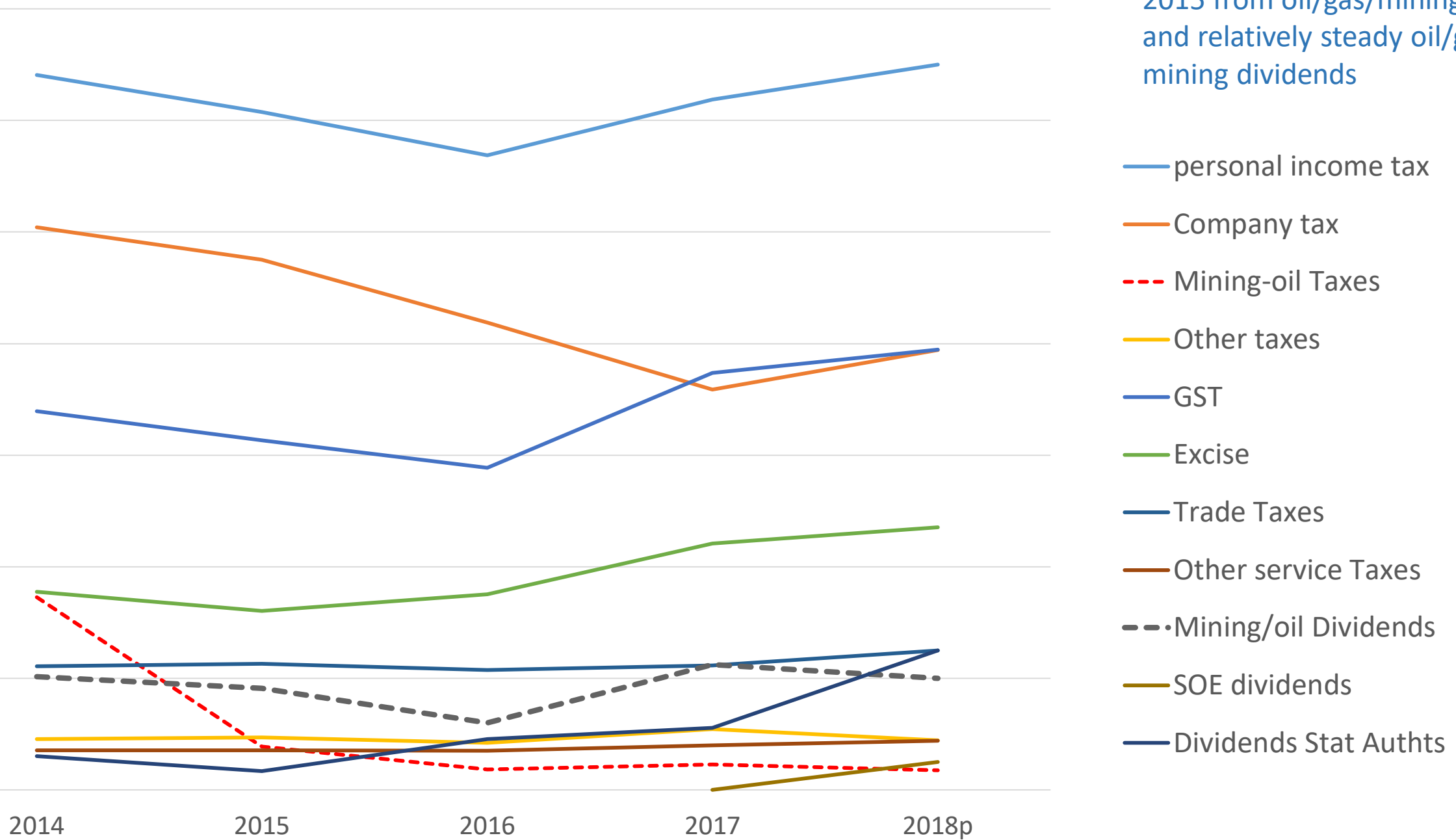
Source: PNG EITI Report for 2016

Portion of Total Revenue from Different Sources (percent - 2014-2018 Budget Projection)



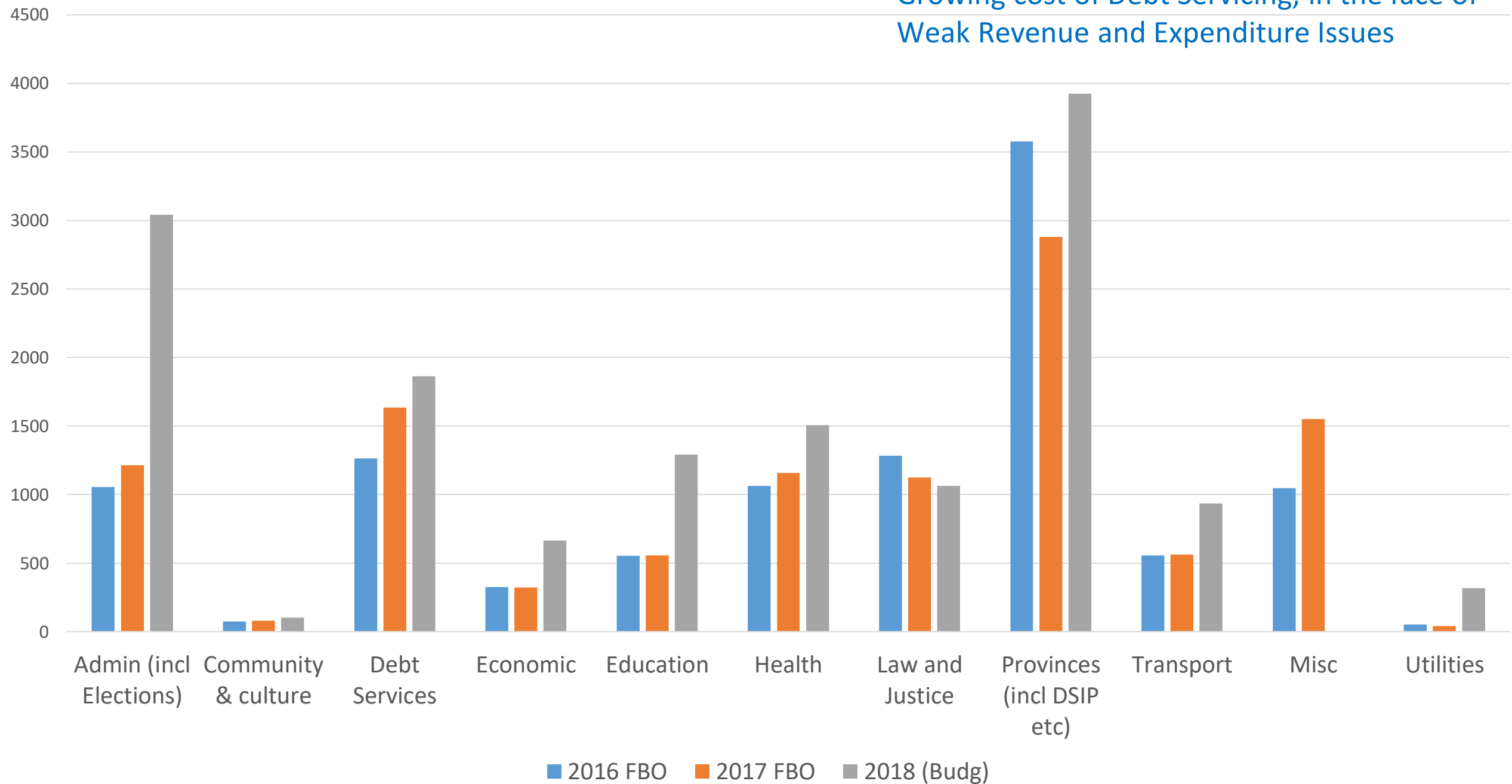
Revenue Sources 2014-2018 (2017 FBO and projected (Treasury))

Showing the major decline in 2015 from oil/gas/mining taxes and relatively steady oil/gas mining dividends



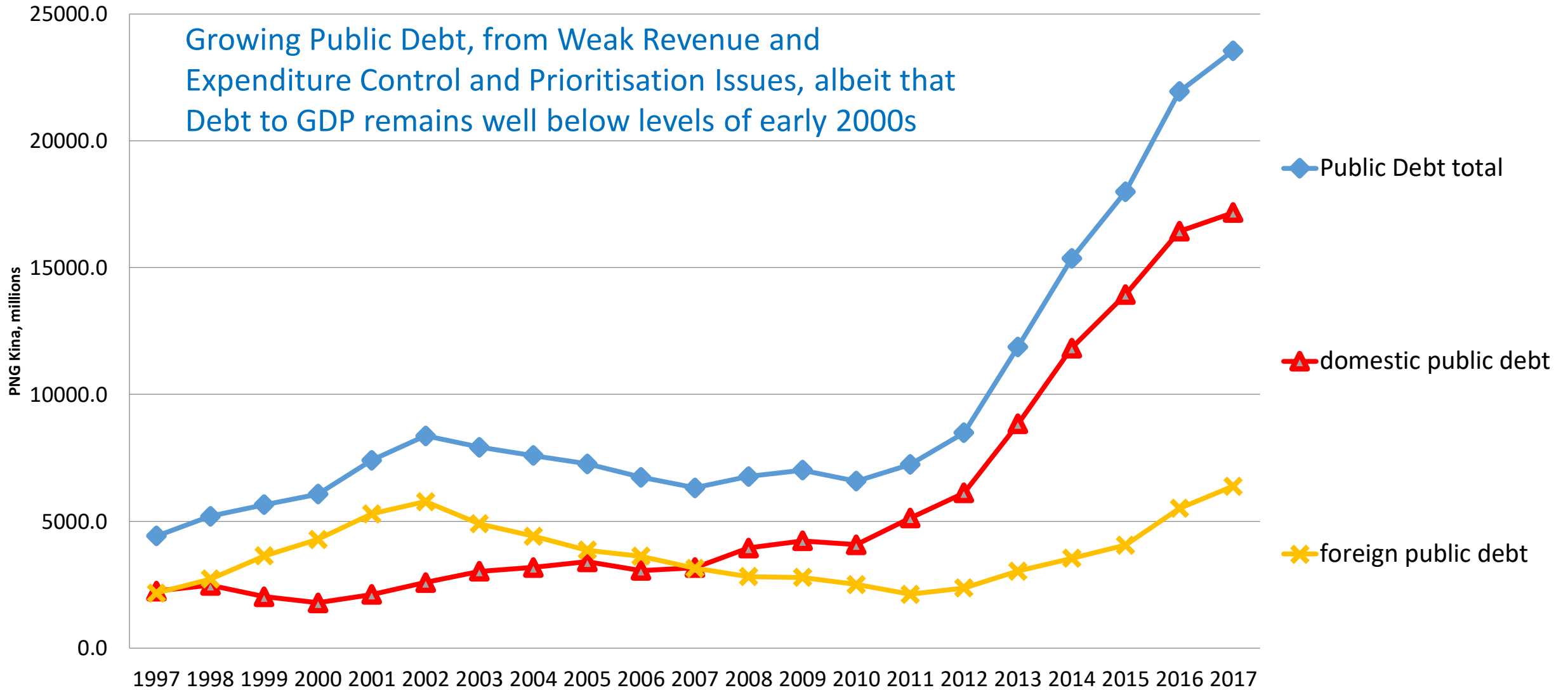
Expenditure by Sector 2016-2018 Budgets (kina mill)

Growing cost of Debt Servicing, in the face of Weak Revenue and Expenditure Issues



Total, Domestic and Foreign Public Debt 1997-2017 (kina, mill) (Treasury)

Growing Public Debt, from Weak Revenue and Expenditure Control and Prioritisation Issues, albeit that Debt to GDP remains well below levels of early 2000s



Issues:

- Major program of ongoing community/housing/livelihood support reqd, including infrastructure restoration (Tax Credit Scheme an efficient mechanism to assist, for approved projects); international, national, corporate and community engagement; Joint community-based contribution to solutions
- Earthquake has exacerbated social tensions/conflict and concerns over landowner identification/benefit sharing (especially performance by responsible State entities) but also corporate legitimacy, even though resource companies (some especially) are in front row with relief efforts etc. Local job creation required in restoration
- Adequate and relatively stable Revenue (resource rental) is required for the State (and other stakeholders). Unless the State has adequate, timely and reliable revenue it cannot realistically perform its crucial functions to the public, but also public goods needed also by investors
- Need for Trust and Engagement with government, private investors/operators and community from start of Project preparation (or review); (companies cannot hide behind definition of responsibilities, when the State clearly weak and faltering in the provinces): Realistic forecasts (by companies and government) and commitments, and then compliance with legal Requirements, and Transparency of negotiations, contracts etc. State requires access to more independent/professional advice re projects.
- Wider social engagement for corporate mandate, going beyond corporate social responsibilities, by mining/oil/gas companies, and need to generate skills and more formal and informal jobs & livelihoods especially in the earthquake and other affected communities

Disaster Preparedness and Management:

- PNG is on the Pacific Rim of Fire, and in the wet equatorial zone: it's invariably prone to natural disasters and needs to be both prepared, and capable of swift response
- Natural events cannot be predicted in terms of timing or extent, but the probability and severity can be assessed.. With some events (e.g. meteorological/climate) more predictable than others
- PNG needs to have national and provincial capacity, managed transparently and professionally, with suitable accountable funding, mobility, and not based upon drawing from already inadequate transport maintenance funds
- Effective early warning systems and support systems must be in place (using mobile phones services, short wave radio and trained networks on the ground: partnering with Churches/NGOs and Private Sector)
- Readiness to call in international support: that was done fairly promptly after the earthquake, but tardily with the 2015-16 drought and frost, when lives were lost unnecessarily from lack of capacity to delivery needed support to the remotest areas...this is a time for openness and not undue reticence
- Need to study and learn lessons from experience to improve capacity and apply for future inevitable events, on land, sea or air....

Thank you

