

# April 2016 consolidation

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This is the approved revision of this page, as well as being the most recent.

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## Contents

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New data

Affected modules

Energy

Oil

Gas

Socio-political

Bugs and issues

Notes

## New data

- **Education - Attainment - UNHDRO** - 3 series nonpreprocessor, pulled by Joel, vetted by Brandon

SeriesEdYearsAge25UNHDRO
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SeriesEDYearsFemaleAge25UNHDRO
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SeriesEDYearsMaleAge25UNHDRO
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- **Education - Expected years of schooling - UIS** - 2 new series (male and female disaggregated), non preprocessor - pulled by Brandon, vetted by Kristen

SeriesEdExpectedYearsofSchoolingFemale
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SeriesEdExpectedYearsofSchoolingMale
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- **Education - Vocation - UIS** - 6 series, non preprocessor - pulled by Brandon, vetted by Andrew

SeriesEdSecLowerVoc%AllFemale
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SeriesEdSecLowerVoc%AllMale
-----------------------------

SeriesEdSecLowerVoc%AllTotal
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SeriesEdSecUpperVoc%AllFemale
-------------------------------

SeriesEdSecUpperVoc%AllMale
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SeriesEdSecUpperVoc%AllTotal
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- **SocioPol - Global Gender Gap - WEF** - 1 series, nonpreprocessor - pulled by Joel, vetted by Brandon

- Changed "notes" from "BV; GE,JM" to "JM;BV"

SeriesGlobalGenderGap

- **Economy - Govt Outlays - OECD**- 1 series, preprocessor - pulled by Joel vetted by Kristen

- Changed notes to "JM;KK"

SeriesGovTotalOutlays%GDP

- **SocioPol - HDR** - 4 series, nonpreprocessor - pulled by Joel, vetted by Andrew

- Changed "notes" to "JS;AS"

SeriesGenIneqInd

SeriesHDI

SeriesHDIIneqAdj

SeriesPovMulDim

- **SocioPol - Doing Business - World Bank** - 24 series, nonpreprocessor - pulled by Kristen, vetted by Nenani

SeriesGovWBDoingBusConstructionPermitDays
SeriesGovWBDoingBusConstructionPermitProcedures
SeriesGovWBDoingBusContainerExportCostUSD
SeriesGovWBDoingBusContainerImportCostUSD
SeriesGovWBDoingBusContractEnforceDays
SeriesGovWBDoingBusCostClose
SeriesGovWBDoingBusCreditTransparency
SeriesGovWBDoingBusDirectorLiability
SeriesGovWBDoingBusDisclosureIndex
SeriesGovWBDoingBusExportDocumentationNeeded
SeriesGovWBDoingBusImportDays
SeriesGovWBDoingBusImportDocumentationNeeded
SeriesGovWBDoingBusinessCostofStarting
SeriesGovWBDoingBusinessProcedures
SeriesGovWBDoingBusinessPropRegDays
SeriesGovWBDoingBusinessRanking
SeriesGovWBDoingBusinessStartDays
SeriesGovWBDoingBusInvestorProtection
SeriesGovWBDoingBusLegalRightsStrengthIndex
SeriesGovWBDoingBusPropertyProceduresRequired
SeriesGovWBDoingBusShareholderSuits
SeriesGovWBDoingBusTaxHoursperPerson
SeriesGovWBDoingBusTimeClose
SeriesGovWBDoingBusTotalTaxRate

- **Energy - reserves and resources - BGR** - 17 series, (some) preprocessor - pulled by Brandon, vetted by Kristen

- From Steve: Changed "notes" column to include "BV" and "KK" because Brandon pulled and Kristen vetted.

- From Steve: Changed "Source" column for all from

- "BGR; "Reserves, Resources and Availability of Energy Resources 2012"

Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) in Hannover; Annual Report. Reserves, Resources and Availability of Energy Resources 2012" to

- "BGR; "Reserves, Resources and Availability of Energy Resources 2014" Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) in Hannover; Annual Report. Reserves, Resources and Availability of Energy Resources 2012,2013,2014"

SeriesEnCumProdGasBGR
SeriesEnCumProdOilBGR
SeriesEnReserCBMBGR
SeriesEnReserGasBGR
SeriesEnReserHeavyOilBGR
SeriesEnReserOilBGR
SeriesEnReserOilSandsBGR
SeriesEnReserShaleGasBGR
SeriesEnReserShaleOilBGR
SeriesEnResorCBMBGR
SeriesEnResorGasBGR
SeriesEnResorHeavyOilBGR
SeriesEnResorOilBGR
SeriesEnResorOilSandsBGR
SeriesEnResorShaleGasBGR
SeriesEnResorShaleOilBGR
SeriesEnResorTightGasBGR

- **Water - Irrigation - MY\_GEO\_HUB** - 1 series, non-preprocessor (yet), pulled by Joel, vetted by Brandon
  - There was a space in "Series LandlrAreaEquipSiebert" - removed space
  - Added "MY GEO HUB" to the source definition
  - Changed notes from "BV;JM" to "JM;BV"
  - Changed aggregation rule from "None" to "Sum"

SeriesLandlrAreaEquipSiebert

- **SocioPol - WGI** - 6 series, Pulled by Kanishka, vetted by Kristen

SeriesGovernanceEffect
SeriesGovernanceRegQual
SeriesGovWBGovMatCorrupt
SeriesGovWBGovMatPolStab
SeriesGovWBGovMatRuleLaw
SeriesGovWBGovMatVoiceAcct

## Affected modules

### Energy

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We updated oil, gas, and coal resources and reserves using the 2014 report from BGR.

# Oil

Largest percentage increases in oil production in Mongolia, Pakistan, and Niger (Figure 1).

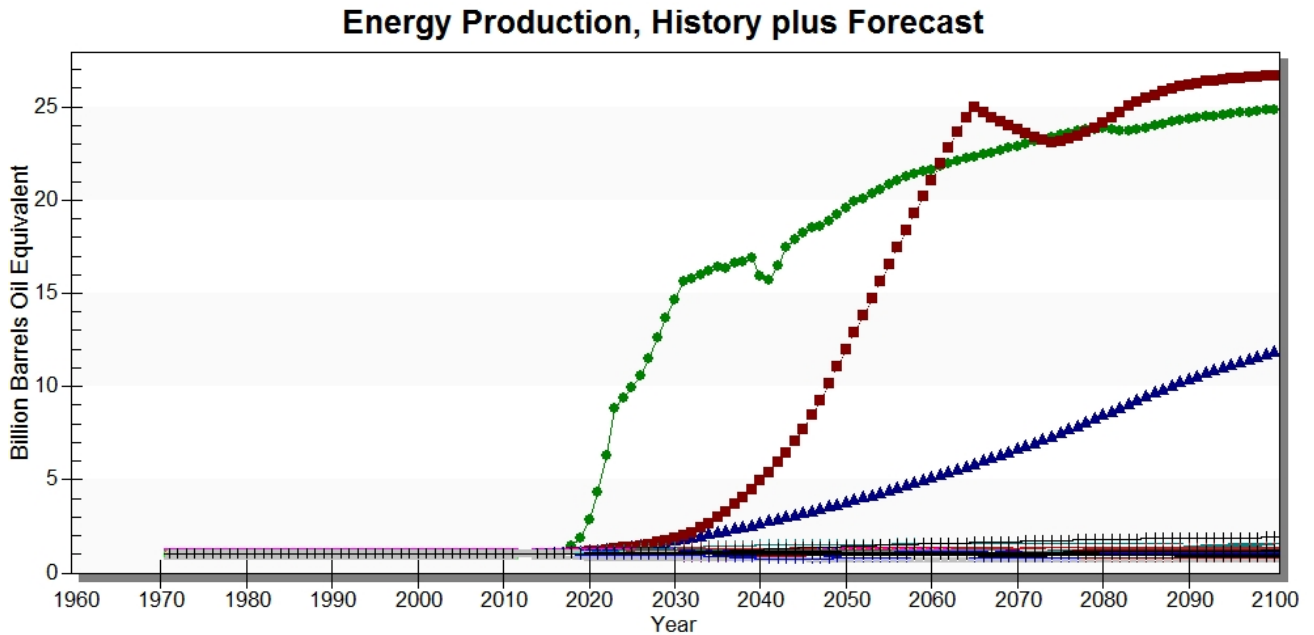


Figure 1: Increases in oil production (new Base Case over old (7.21) Base Case). Mongolia (green), Pakistan (red) and Niger (blue).

Mongolian oil resources increased from 52 Mt in 2011 to 1,048 in 2012. Mongolian oil reserves increased from 2 Mt in 2011 to 35 in 2012.

Pakistan oil resources increased from 188 Mt in 2011 to 1,422 in 2012. Pakistan's oil reserves increased from 34 Mt in 2012 to 47 in 2013.

Niger's oil resources increased from 30 Mt in 2012 to 50 Mt in 2013. Niger's oil reserves increased from 0 in 2011 to 20 Mt in 2013.

Global oil production decreases only slightly (Figure 2).

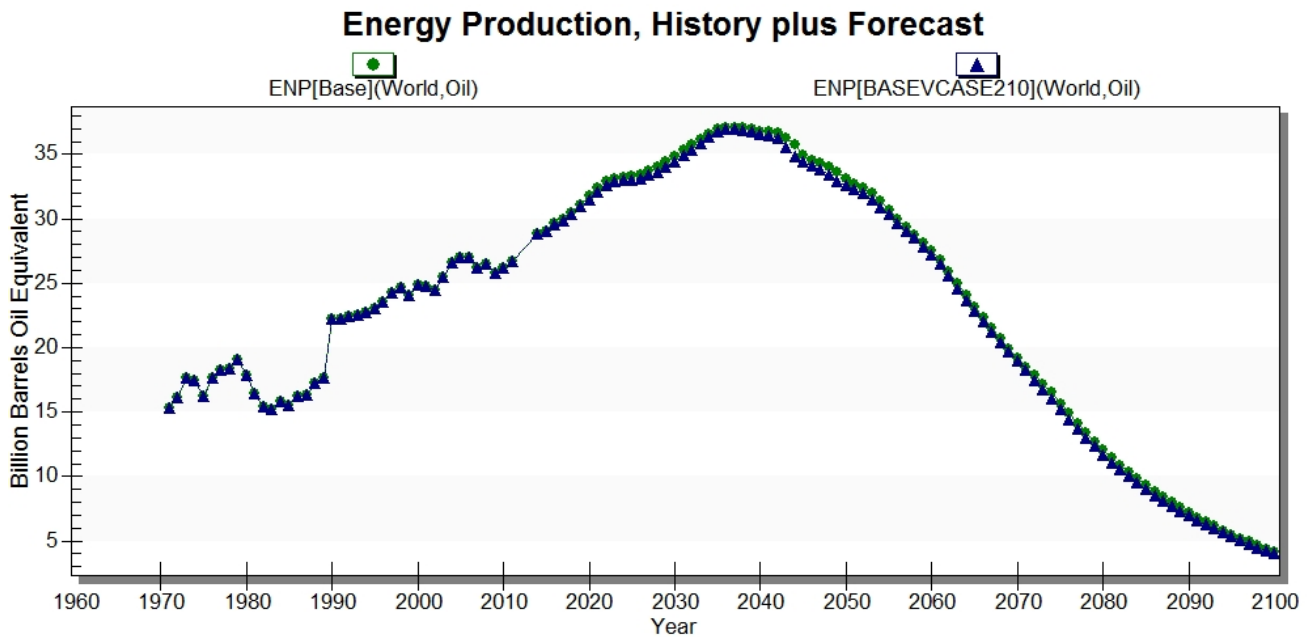


Figure 2: Global oil production in Base Case (7.21) and new Base Case.

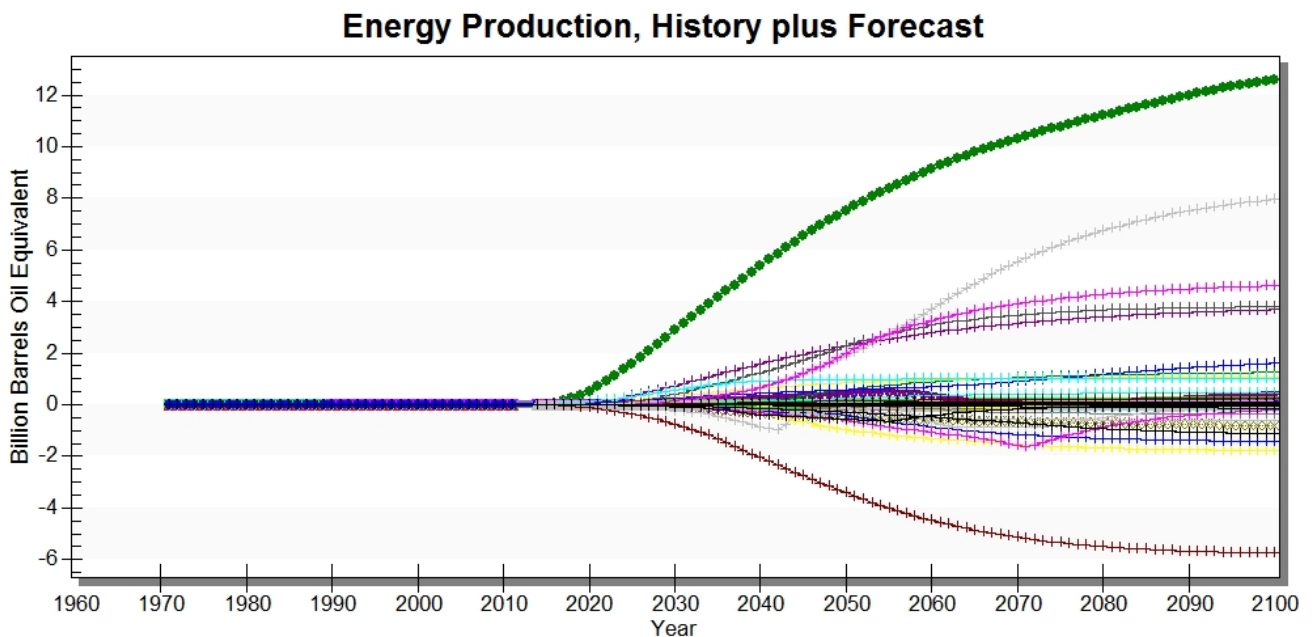


Figure 3: Changes in oil production (BBOE) by country, cumulative. The largest increase is in the US (green), followed by Pakistan (grey), and Russia (pink). The largest decrease is in China (brown).

In absolute terms, the largest increases occur in the US, Pakistan, and Russia (Figure 3). The largest decrease is in China. According to the BGR 2013 energy reserves and resources report:

*"The data on light tight oil resources in particular was improved further by a study by the US Energy Information Agency (EIA) which estimated the potential of non-conventional hydrocarbons. This led to a significant reduction in the resources carried by Venezuela and China, and an increase in the resources found in Russia and the USA."*

Oil resources in the US increased from 24,116 Mt in 2011 to 29,321 in 2012 and then to 30,826 in 2013. Oil reserves in the US increased from 4,463 Mt in 2011 to 4,764 in 2012 and 6,274 in 2013. As stated above, Pakistan's oil resources and reserves have increased

since 2011.

Russian oil resources increased from 38,948 Mt in 2011 to 46,669 in 2012 and then to 47,458 Mt in 2013. Likewise, Russian oil reserves increased from 11,868 Mt in 2012 to 12,657 in 2013.

China's oil resources were decreased from 59,146 Mt in 2011 to 23,083 Mt in 2012. This doesn't impact overall energy production for China all that much because over 80% of China's primary energy production is from coal and they have nearly 5.5 million Mt of hard coal resources.

## Gas

The largest proportional increase is in South Sudan. This is because we have estimated a value for South Sudan using the data point for "Sudan and South Sudan" in the BGR report and then disaggregating based on land area. See the BGR data page for more details on this methodology.

Global gas production increases after adding the new data (Figure 4).

The largest increases in absolute terms occur in Algeria (red) and USA (brown plus-signs). The largest decrease occurs in Norway (yellow) and Mexico (teal) (Figure 5).

Algerian gas resources increased from 17,818 BCM in 2011 to 31,224 in 2012 (no change from 2012 to 2013). This impacts GDP significantly since Algeria is such a large gas producer. Algeria's GDP is over 9 percent larger by the late 2060s with this new data included than in 7.21.

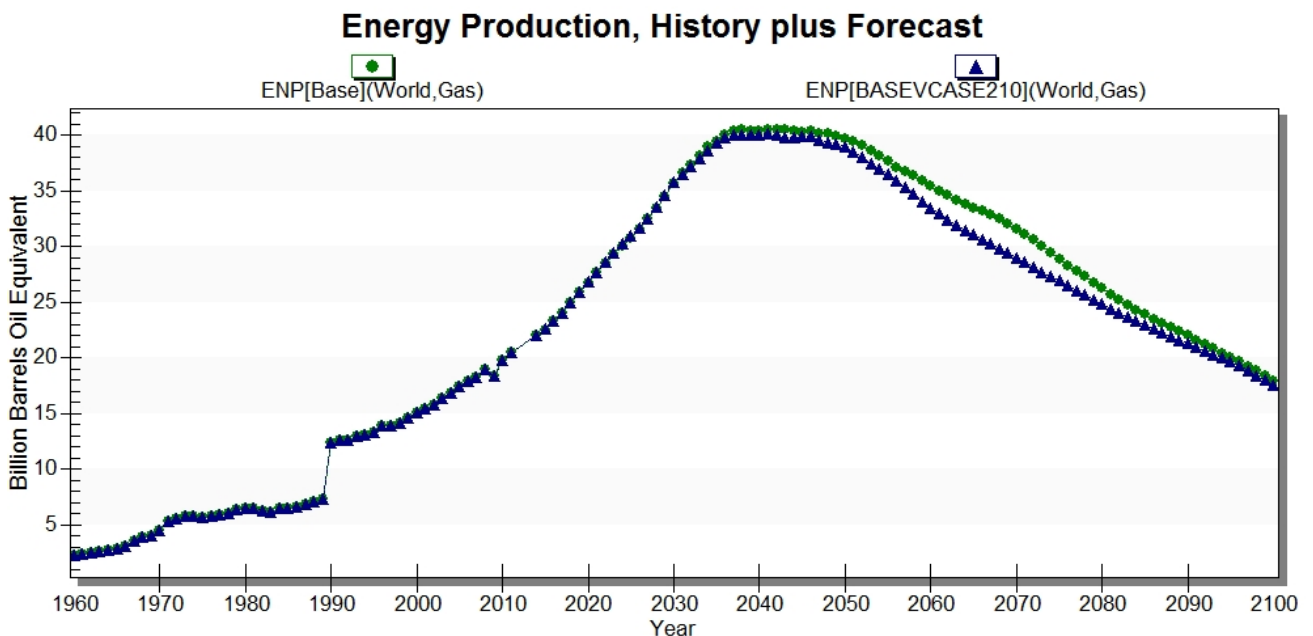


Figure 4: Global gas production in the Base Case (7.21) and after adding BGR resources and reserves data.

## Energy Production, History plus Forecast

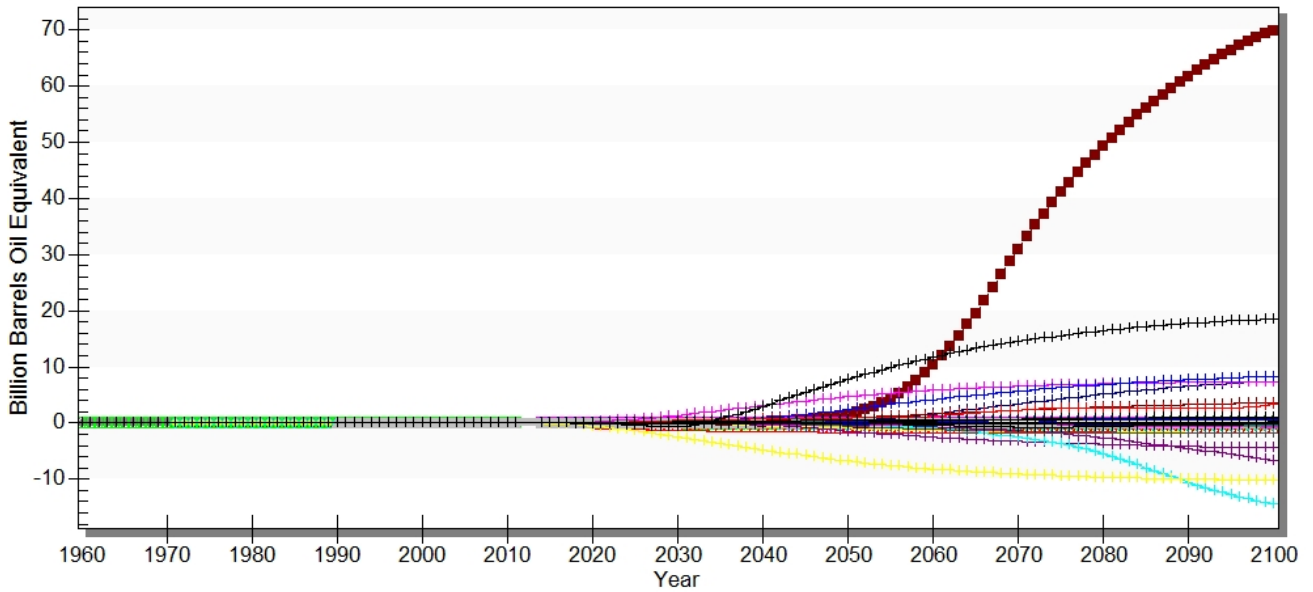


Figure 5: Changes in gas production in absolute BBOE (cumulative) in the Base Case of 7.21 compared to the new Base Case after adding new BGR data on resources and reserves.

## Socio-political

Data for governance effectiveness were updated to 2014. Previously, the data ended in 2012. The largest decrease occurs in Taiwan and the largest increase occurs in Fiji (Figure 6).

Likewise, data on government regulatory quality from the WGI was updated to 2014. The largest increases in regulatory quality were Myanmar and Vanuatu and the largest decreases were in Taiwan and

## Governance Effectiveness (WB), History and Forecast

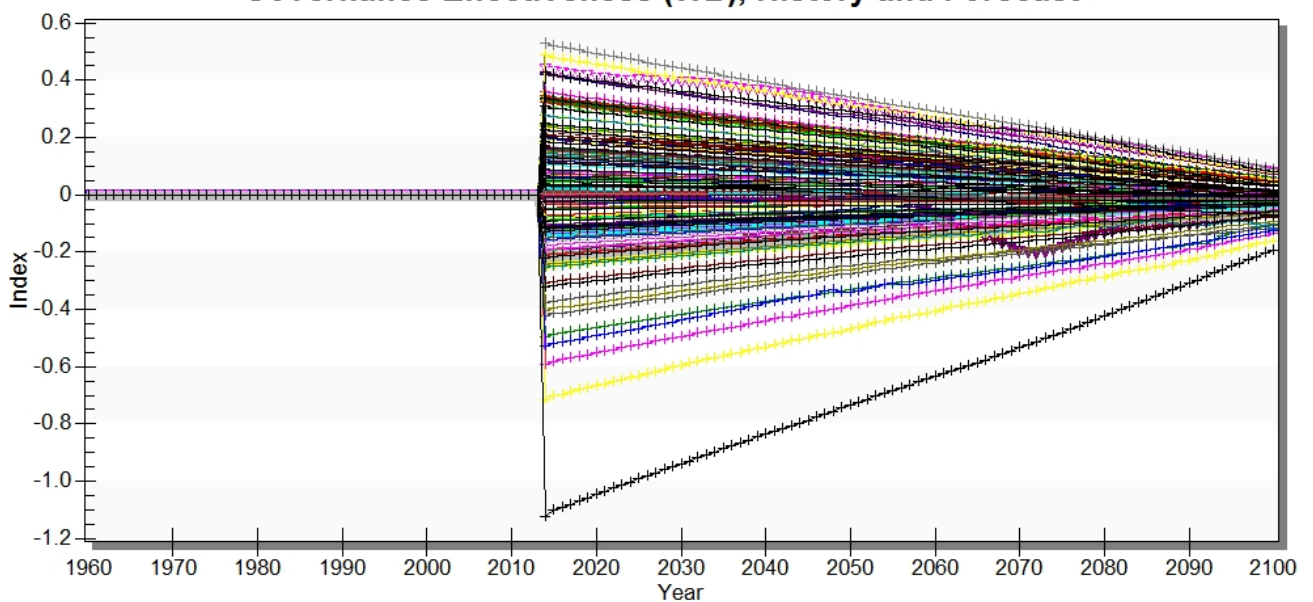


Figure 6: Changes in government effectiveness in the Base Case of 7.21 and after including the new WGI data.

d Libya (Figure 7).

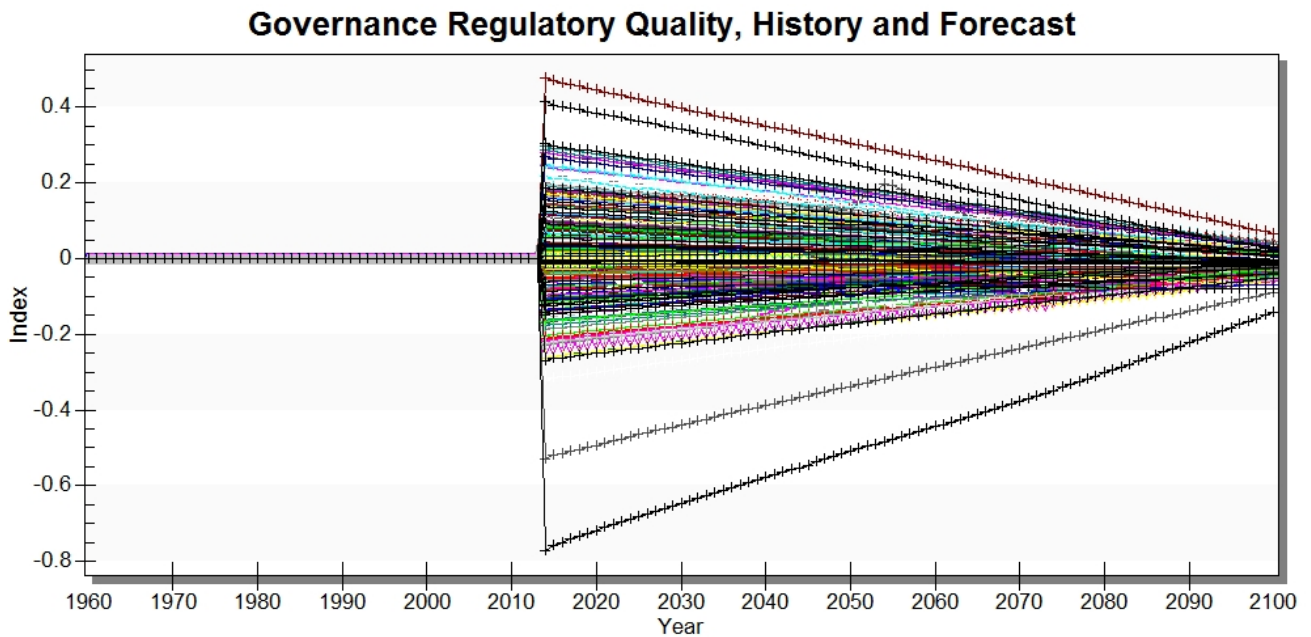


Figure 7: Changes in regulatory quality in the Base Case (7.21) and after adding new WGI data.

These are the only 2 preprocessor series that were updated from the WGI data.

Since both effectiveness and regulatory quality were decreased in Madagascar, natural gas production decreases in the new forecast relative to the Base Case. Since we forecast Madagascar to produce gas in the future, this directly affects their GDP. After adding these new data, GDP in Madagascar decreases by over 24% in 2100.

## Bugs and issues

These are largely Indonesia specific because Drew has gone through looking for problems with the model displays for Indonesia in preparation for the upcoming training.

- All fish dimensions seem to be missing formulas when trying to view "history and forecast"
- Many agricultural series have a gap in the data because the food balance sheets end in 2011/12 and the new base year is 2014.
- There is no historical analog (for Indonesia) for "population per hectare of crop land (urban)"
- Transient in 1998 in GDP (both MER and PPP) for Indonesia
- No historical analog for VADD of energy and materials for Indonesia
- VADD for Indonesia for all sectors jumps around
- Transient in initial year of HDI(new) for Indonesia
- Transient in initial year of MALNPOPP for Indonesia
- Transient in initial year of MalnPop for Indonesia
- Transient in initial year of GINIDOM for Indonesia
- No historical analog for government consumption by destination as a percent of GDP for



InfraOther for Indonesia

- No historical analog for GovRev%GDP for Indonesia
- Transient in initial year of INCOMELT200LN2005 for Indonesia
- Transients in initial year of primary intake in Indonesia
- Gaps in ENDEM because data not up-to-date
- No historical analog for reserve to production ratio for Indonesia for hydro
- **ICT mobile broadband initialized at zero**
- No historical analog for ICTCONSRPLUS for Indonesia
- Transients for initialized values of HIVRATE, AIDS death rate, and AIDSDTHS for Indonesia
- "Invalid dimension 2 parameters" for "HD Multivariate Report with Land" for Indonesia

## Notes

- Need coal resources and reserve data from BGR
- Need to address ICT mobile broadband initialization
- Need to update FAO food balance sheets to fill gaps in data now that 2014 is the base year

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