FVI Economic Score – Precise Dataset & Field Mapping and Formulas

This document lists exactly which dataset and fields to use for each Economic composite, with filters, joins, units, and formulas.

Global conventions (apply to all composites)

• Use a single year across all inputs (e.g., 2023). In WDI tables, the year column appears as “2023 [YR2023]”.

• Country scope: keep sovereign ISO■3 countries only (exclude WLD, regions/income groups).

• Joins: WDI uses Country Code (ISO3); trade uses reporterISO (ISO3). Maintain a single ISO3 list.

• Units: rents are %, divide by 100 when multiplying by US$; GDP/ElecVA are current US$; trade values are US$ (use FOB for exports).

ECONOMIC SCORE 1 — Global GDP Dependency – Coal Mining

Goal: Share of global GDP attributable to coal mining rents.

Datasets & fields

• **File:** P_Data_Extract_From_World_Development_Indicators (1).xlsx

  Series/Indicator: NY.GDP.COAL.RT.ZS (Coal rents, % of GDP)

  Fields: Series Code, Country Code, Country Name, 2023 [YR2023]

• **File:** API_NY.GDP.MKTP.CD_DS2_en_excel_v2_122372.xls

  Tab: Data

  Series/Indicator: NY.GDP.MKTP.CD (GDP, current US$)

  Fields: Country Code, Country Name, 2023

Filters / transforms

• Filter to sovereign ISO3 countries (exclude WLD/regions).

• CoalRentsFrac_c = [NY.GDP.COAL.RT.ZS]/100 for year 2023.

• GDP_USD_c from NY.GDP.MKTP.CD (year 2023).

• Global_GDP = SUM over countries of GDP_USD_c.

Formula (math)

```
EC1 = 100 * SUM_c(CoalRentsFrac_c * GDP_USD_c) / SUM_c(GDP_USD_c)
```

Excel-style (conceptual)

```
=100*SUMPRODUCT(CoalRentsPct_byCountry/100, GDP_byCountry) / SUM(GDP_byCountry)
```

ECONOMIC SCORE 1a — National GDP Share (Coal Mining)

Goal: Country-level dependence of GDP on coal mining rents.

Datasets & fields

• **File:** P_Data_Extract_From_World_Development_Indicators (1).xlsx

  Series/Indicator: NY.GDP.COAL.RT.ZS (Coal rents, % of GDP)

  Fields: Series Code, Country Code, Country Name, 2023 [YR2023]

Filters / transforms

• Filter to sovereign ISO3 countries.

• Use the value in '2023 [YR2023]' as percent points; if stored as fraction, multiply by 100.

Formula (math)

```
EC1a_c = CoalRentsPct_c (percent points)
```

Excel-style (conceptual)

```
=NY.GDP.COAL.RT.ZS[country, 2023]
```

ECONOMIC SCORE 2 — Global GDP Share (Coal■Fired Power)

Goal: Share of global GDP attributable to electricity sector value added attributable to coal.

Datasets & fields

• **File:** WDI extract (add the series to your existing file)

Series/Indicator: NV.IND.ELEC.CD (Electricity, gas & water value added, current US$)

Fields: Series Code, Country Code, 2023 [YR2023]

• **File:** WDI extract (add the series) or Ember/IEA

Series/Indicator: EG.ELC.COAL.ZS (Electricity production from coal sources, % of total)

Fields: Series Code, Country Code, 2023 [YR2023]

• **File:** API_NY.GDP.MKTP.CD_DS2_en_excel_v2_122372.xls

Tab: Data

Series/Indicator: NY.GDP.MKTP.CD (GDP, current US$)

Fields: Country Code, 2023

Filters / transforms

• Sovereign ISO3 countries only.

• Global_ElecVA = SUM_c(NV.IND.ELEC.CD_c).

• CoalShareFrac_c = EG.ELC.COAL.ZS_c / 100.

• Compute CoalShare_global as ElecVA-weighted average: SUM_c(ElecVA_c*CoalShareFrac_c) / SUM_c(ElecVA_c).

• Global_GDP = SUM_c(NY.GDP.MKTP.CD_c).

Formula (math)

```
EC2 = 100 * ( Global_ElecVA * CoalShare_global ) / Global_GDP
```

Excel-style (conceptual)

```
=100*(SUM(ElecVA_byCountry)*SUMPRODUCT(ElecVA_byCountry,CoalSharePct_byCountry/100)/SUM(ElecVA
_byCountry))/SUM(GDP_byCountry)
```

ECONOMIC SCORE 2a — National GDP Share (Coal■Fired Power)

Goal: Country-level share of GDP tied to coal■fired electricity via sector value added.

Datasets & fields

• **File:** WDI extract (add the series)

Series/Indicator: NV.IND.ELEC.CD (Electricity, gas & water value added, current US$)

Fields: Series Code, Country Code, 2023 [YR2023]

• **File:** WDI extract (add the series)

Series/Indicator: EG.ELC.COAL.ZS (% of electricity from coal)

Fields: Series Code, Country Code, 2023 [YR2023]

- **File:** API_NY.GDP.MKTP.CD_DS2_en_excel_v2_122372.xls

  Tab: Data

  Series/Indicator: NY.GDP.MKTP.CD (GDP, current US$)

  Fields: Country Code, 2023

Filters / transforms

- Sovereign ISO3 countries only.
- CoalShareFrac_c = EG.ELC.COAL.ZS_c / 100.

Formula (math)

```
EC2a_c = 100 * ( ElecVA_USD_c * CoalShareFrac_c ) / GDP_USD_c
```

Excel-style (conceptual)

```
=100*(NV.IND.ELEC.CD[c]*EG.ELC.COAL.ZS[c]/100) / NY.GDP.MKTP.CD[c]
```

ECONOMIC SCORE 3 — National Export Dependency (Coal)

Goal: Coal export value as % of total exports for each reporter country.

Datasets & fields

- **File:** TradeData_7_25_2025_0_51_17.csv

  Series/Indicator: HS codes: 2701 (coal), 2702 (lignite), 2704 (coke) — use prefix match on cmdCode

  Fields: reporterISO, reporterDesc, refYear, flowDesc, cmdCode, fobvalue (or primaryValue), partnerISO (optional)

Filters / transforms

- Filter: flowDesc='Export'; refYear=your chosen year (e.g., 2023).
- CoalExpUSD_c = SUM(fobvalue WHERE cmdCode LIKE '2701%' OR '2702%' OR '2704%').
- TotExpUSD_c = SUM(fobvalue WHERE all HS). Prefer summing all partners, not only 'W00'.
- Use FOB values consistently for exports.

Formula (math)

```
EC3_c = 100 * CoalExpUSD_c / TotExpUSD_c
```

Excel-style (conceptual)

```
=100*(SUMIFS(fobvalue, flowDesc,'Export', reporterISO,c, refYear,2023,
cmdCode,{2701*,2702*,2704*}) / SUMIFS(fobvalue, flowDesc,'Export', reporterISO,c,
refYear,2023))
```

SQL-like (conceptual)

```
WITH exp AS ( SELECT reporterISO, SUM(fobvalue) AS tot_exp FROM trade WHERE flowDesc='Export'
AND refYear=2023 GROUP BY reporterISO ), coal AS ( SELECT reporterISO, SUM(fobvalue) AS
coal_exp FROM trade WHERE flowDesc='Export' AND refYear=2023 AND (cmdCode LIKE '2701%%' OR
cmdCode LIKE '2702%%' OR cmdCode LIKE '2704%%') GROUP BY reporterISO ) SELECT c.reporterISO,
100.0 * c.coal_exp / e.tot_exp AS EC3_pct FROM coal c JOIN exp e USING (reporterISO);
```