Graph Compilation File Analysis

Data Sources:

Labor Productivity-
https://ourworldindata.org/grapher/labor-productivity-per-hour-pennworldtable?overlay=download-data

Healthcare Access and Quality
https://www.healthdata.org/research-analysis/library/healthcare-access-and-quality-index-based-mortality-causes-amenable?fbclid=IwY2xjawN3Cx1leHRuA2FlbQIxMABicmlkETFkUTdCUkRwZTFzdlVkMWdxAR6qsiL3aLkvrdikyzmqgmaruTbwwsgaAnECEEEv2kfYGxLLAtRIUe5MC9vWAw_aem_D7Q6w50ZXy6DKU0fNUkxmA

Control of Corruption
https://data.worldbank.org/indicator/CC.EST

Government Effectiveness
https://data.worldbank.org/indicator/GE.EST

Individuals using the Internet
https://data.worldbank.org/indicator/IT.NET.USER.ZS

FDI Inward Flow
https://unctadstat.unctad.org/datacentre/reportInfo/US.FdiFlowsStock

Government Expenditure on Education
https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS

Note: The 'Region' classification came from the worldbank's definition for 2026
https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups

Trend Analysis

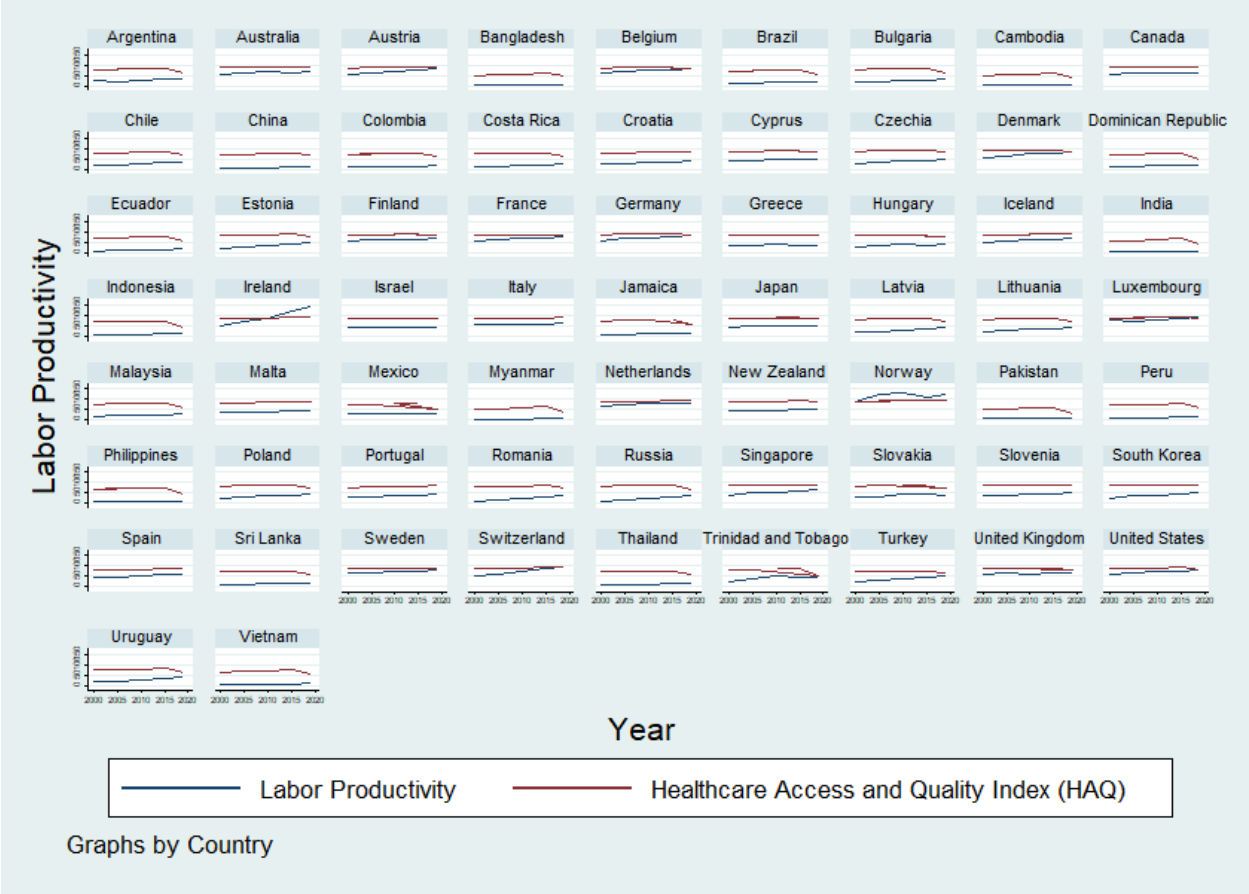

Figure 1: Trend Analysis of Labor Productivity Output per Hour Worked and Healthcare Access and Quality (HAQ) of Selected Countries 2000-2019

The image above shows the trend analysis between Labor Productivity Output per Hour Worked and Healthcare Access and Quality (HAQ) in selected countries. The said image and findings is only limited to the secondary data gathered that covers 2000, 2005, 2010, 2015, 2019 and runs through with Stata version 14 and the remaining countries after merging all data. This is to assess the data-trend before controlling for other factors that affect labor productivity.

The data above shows that labor productivity in terms of output per hour worked and healthcare access and quality per selected country differs from each other and have no constant pattern movement as time passes by.

Relationship Analysis

Figure 2: Global Relationship of Labor Productivity Output per Hour Worked and Healthcare Access and Quality (HAQ) Index

Exhibiting the global relationship of labor productivity output per hour worked and the independent variable healthcare access and quality index, the image above shows the reaction of both variables to one another. The said findings showed a pattern that indicates a strong positive relationship or association of the two variables. As healthcare access and quality increase, labor productivity tends to rise. This means that countries with better healthcare systems generally have more productive workforce.

One notable pattern that was observed from the data is the diminishing returns at higher levels. The curve appears to be steep at low healthcare access and quality levels and gradually flattens as healthcare access and quality increases. This reveals that when healthcare access is very poor, just a small improvement in healthcare access and quality produce large gains in productivity. In addition to that, at higher levels of healthcare access, additional improvements still raise productivity but at a slower rate.

Relationship by Region Analysis

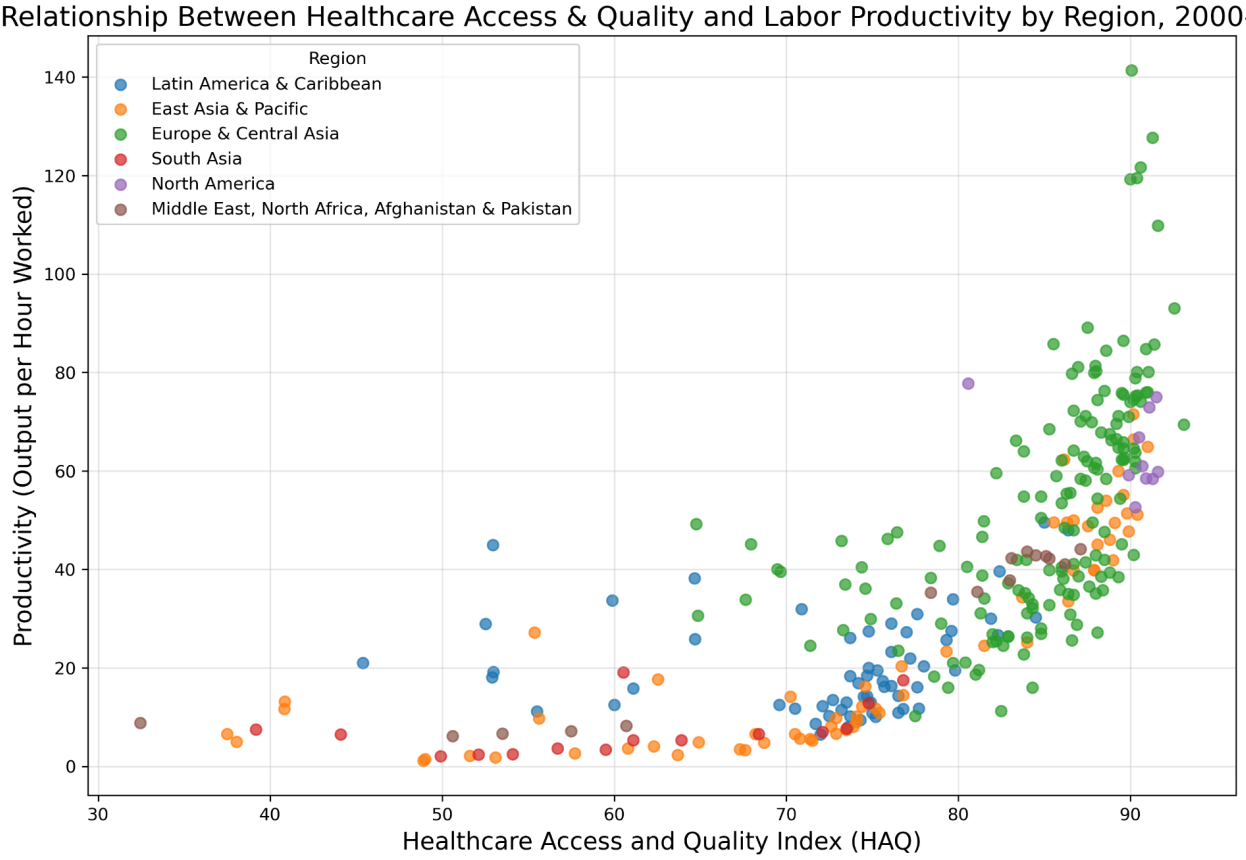

Figure 3: Global Relationship of Labor Productivity Output per Hour Worked and Healthcare Access and Quality Index (HAQ) per Region

These findings show the global relationship of Labor Productivity (Output per hour Worked) and Healthcare Access and Quality (HAQ) Index, with each point representing a country-year observation and each color representing a specific global region. Across all regions, labor productivity increases as HAQ increases. This indicates a consistent global pattern.

The data shows Europe and Central Asia (green) occupy both the highest level of labor productivity and healthcare access and quality. North America (purple), though has few observations, is located in high HAQ and labor productivity. Moreover, East Asia and Pacific (orange) are widespread in middle healthcare access and quality while having some high performers. In addition to that, Latin America and Caribbean (blue) shows positive relationships

but less steep rise than Europe as mostly are in mid-range healthcare access and quality but low to middle productivity. Partnering with that, South Asia (red) had generally low HAQ and labor productivity while the Middle East and North America (brown) had intermediate performance between South Asia and Latin America.

This data finds that no region shows high labor productivity with low healthcare quality and strengthens the thesis argument that healthcare access and quality is a fundamental determinant of labor productivity worldwide. .

Relationship by Income Group Analysis

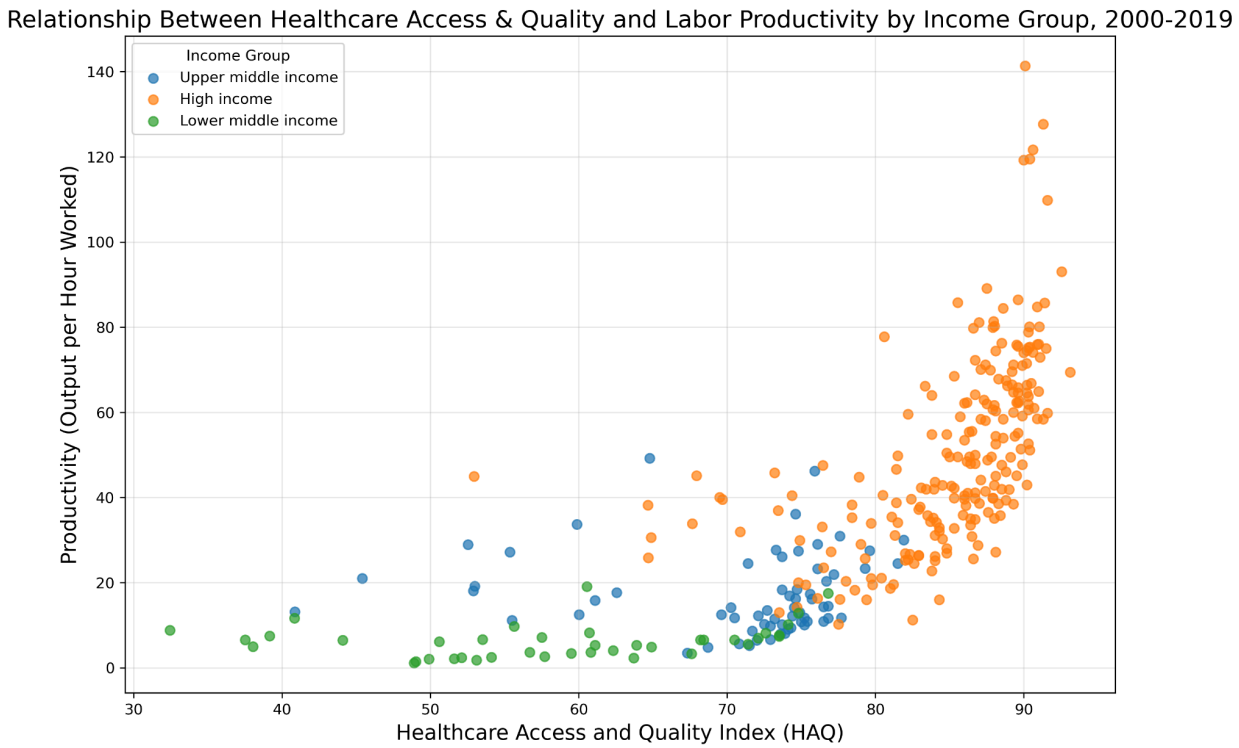

Figure 4: Global Relationship of Labor Productivity Output per Hour Worked and Healthcare Access and Quality (HAQ) Index per Income Group

The image above reveals that the High income (orange) group had the highest healthcare access and quality and access and labor productivity. The best explanation is, these

economies already have advanced industrial structures and skilled labor, amplifying the effect of good health.

On the other hand, Upper Middle Income countries (blue) had a noticeable upward slope, but less steep than high-income countries. This means that better health access still increases productivity but the returns are moderate. These economies are likely to benefit from improving healthcare access and quality however constraints in infrastructure, technology, and capital exist.

Moreover, Lower Middle Income (green) countries had lower productivity despite having variations on Healthcare Access and Quality. This indicates, even with improvements in healthcare, productivity stays low. This suggests structural barriers such as informal labor, limited capital, and skill gaps. Weak economic diversification is present and the baseline for productivity is low independently of healthcare.

This reveals that even at the same level of healthcare access and quality level, high-income countries achieve much higher productivity than middle-income countries. This implies health is a necessary factor, but not sufficient for labor productivity. Institutions, capital, education and technology also determine labor productivity.