

GHP 557: LAB 1

Health Systems Innovations Lab: Health System Performance Visualization Tool

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Why labs in GHP 557?

- Feedback
- Review assignments
- Inputs on final report
- Practice final presentation
- Systems thinking
- Fun exercises
- Community-building

Session overview

- Overview of lab
- Logistics
- Workbook review
- Purpose of tool
 - Key concepts in relation to the health systems framework
 - Application
 - How to use the tool in 10 steps
 - Illustrative case: Hospital admissions for Hypertension in G7 Nations
 - Class example

Logistics (I)

- **Office hours** – use Canvas to reserve appointments
- **Group formation** – use QR code to submit name of group lead
- **Syllabus review** – use this week to review syllabus and clarify any items with TFs
- **Assignment review** – review assignments, clarify any items, and develop monthly plan to budget time for assignments
- **Readings** – reading list is mandatory and will be discussed in class. Additional reading is for interest

Logistics (II)

- **Attendance** – all classes are mandatory; inform TFs if you anticipate being absent
- **Workbook** – use workbook to complete and prepare for class exercises. Workbooks will be graded for completeness
- **Class exercises** – prepare for class exercises using workbook
- **Guest speakers** – review guest speaker list and prepare to engage
- **Picture consent form** – complete consent form for class photo

Workbook

- Navigate to Canvas and open workbook
- ‘Group work and discussion’ -- Review in-class exercises before class and discuss with your group
- Prepare to discuss in class and identify an individual who will present to the class
- Make notes
- You may wish to print or use a digital copy

Purpose of the health systems analysis tool

- Identify suitable *indicators* to measure system performance
- Develop *conceptual clarity* regarding the various health system components and sub-components
- Explore how health systems *differ* in relation to context, functions, outputs, objectives and how these variables impact system outcomes
- Promote a comparative method and generation of hypotheses to explain differences in the performance of health systems

Application and use of tool

The tool will be used throughout the course to complete assignments:

- Tasks – 12 weekly exercises
- Short Answer Questions -- 4 'end-of-block' exercises
- Capstone Project – benchmarking in relation to peer nations

A 'primer' on health systems

Health system components analyzed in the tool

I. Context

II: Functions

III: Outputs

IV: Objectives

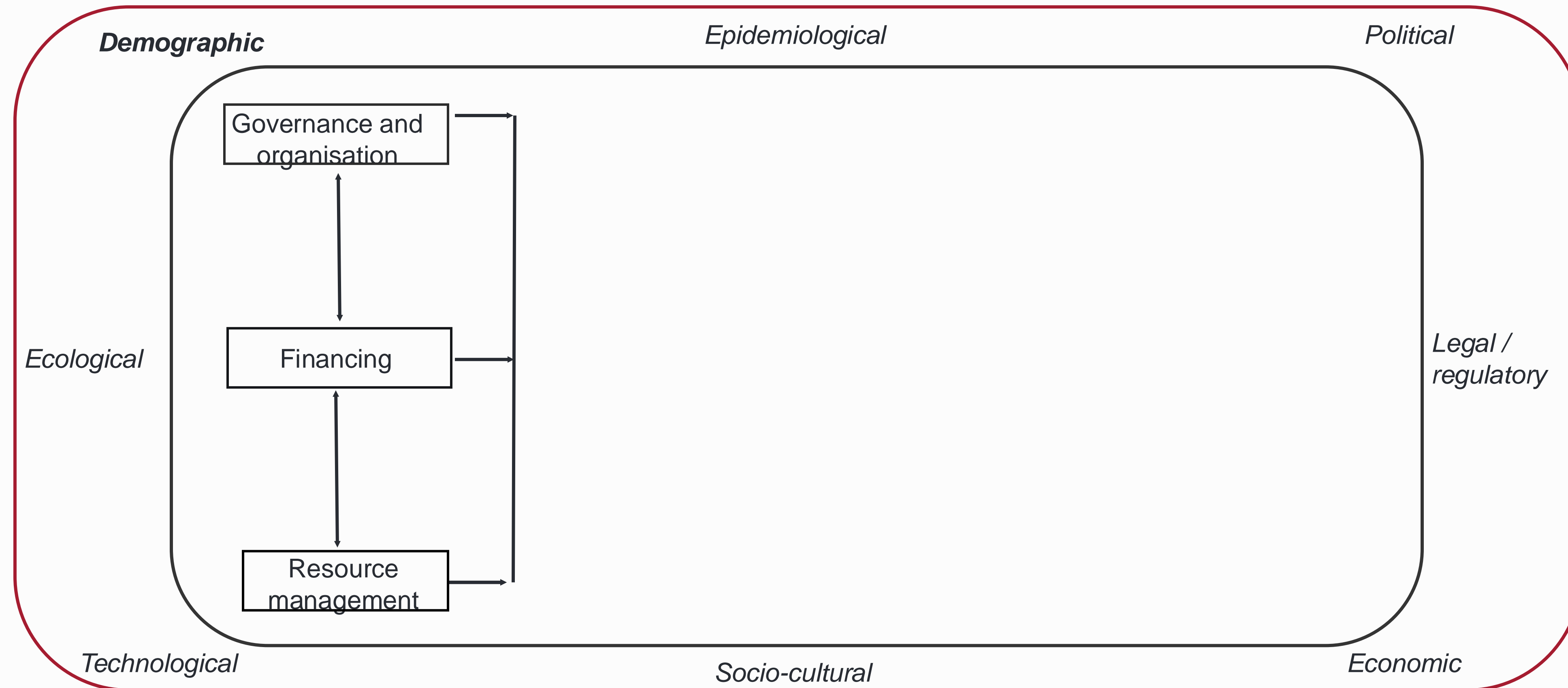
V: Outcomes

Health Systems Analysis Framework: Context



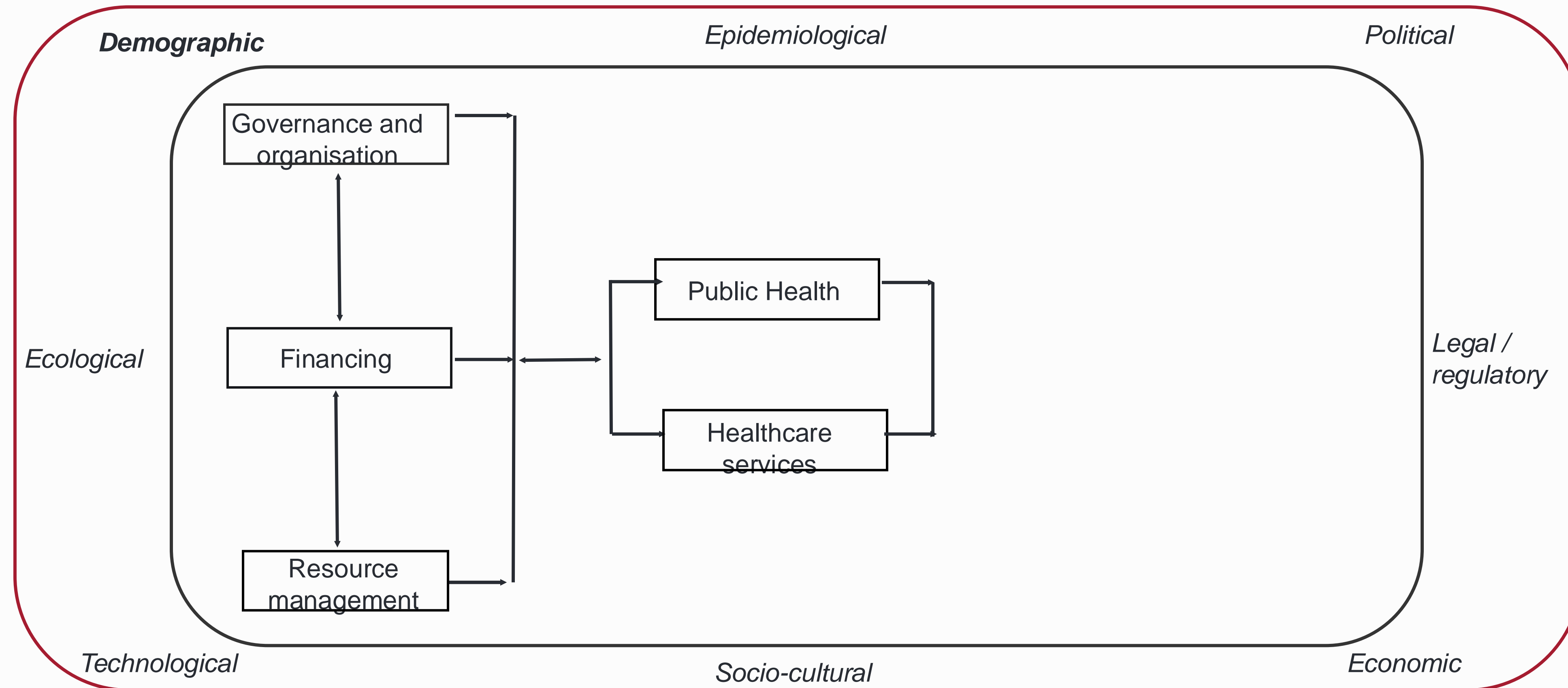
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Health Systems Analysis Framework: Functions



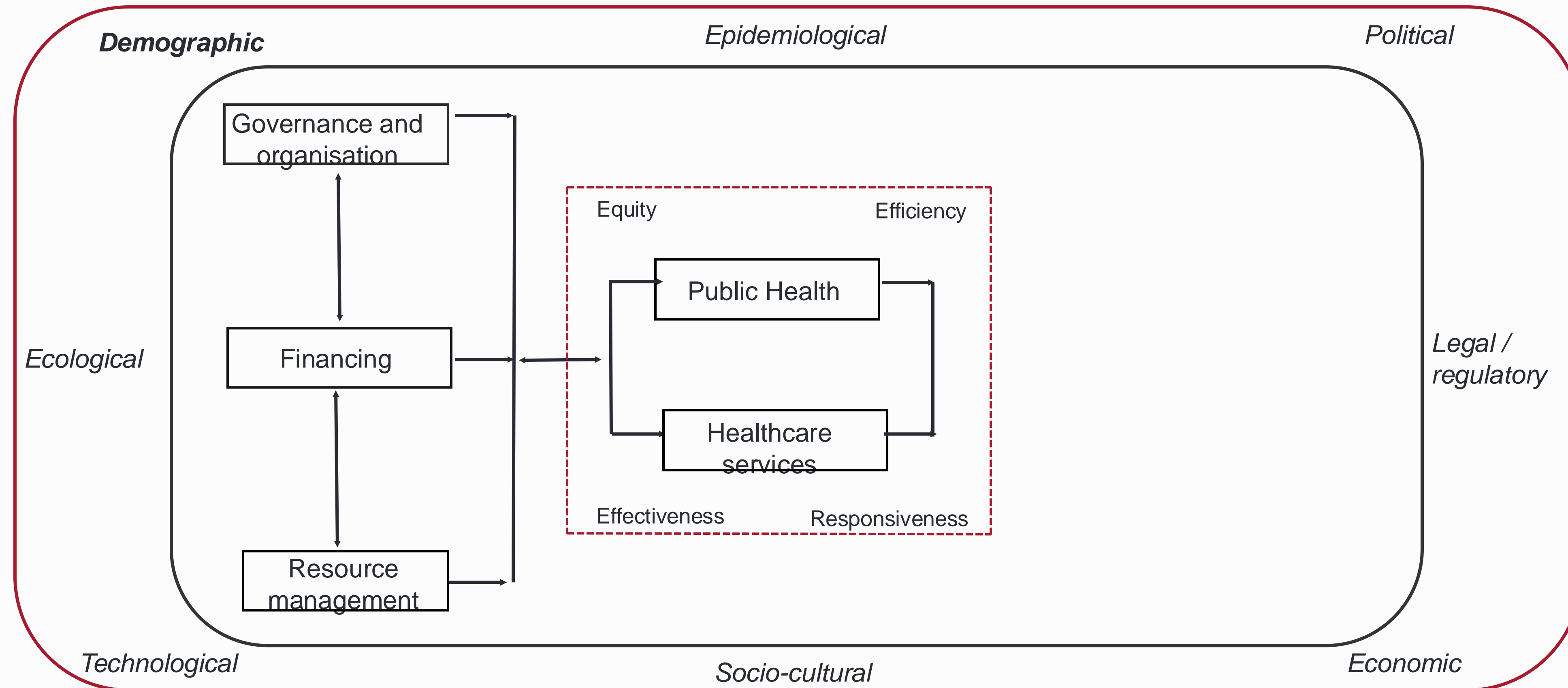
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Health Systems Analysis Framework: Outputs



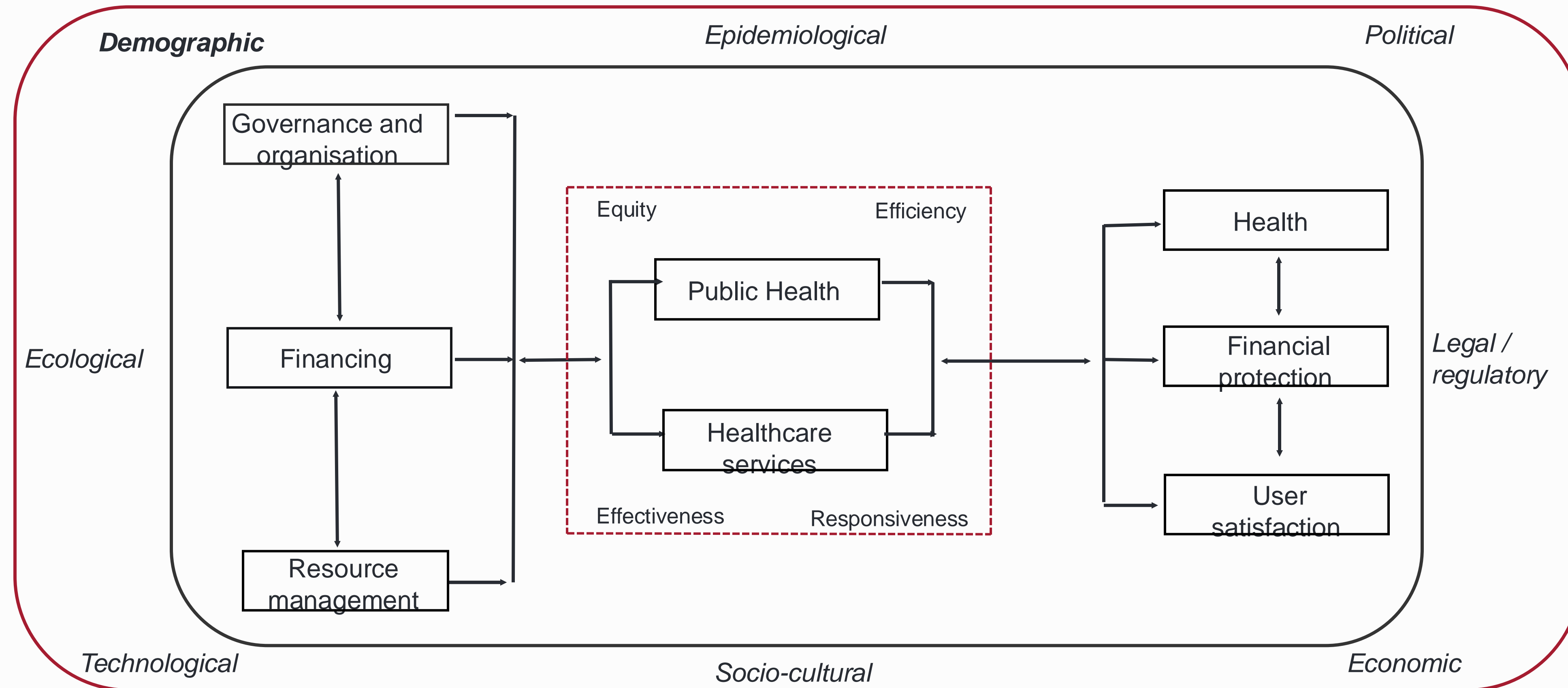
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Health Systems Analysis Framework: Objectives



Source: Atun et al. Lancet 2013, Atun and Moore 2021

Health Systems Analysis Framework: Goals



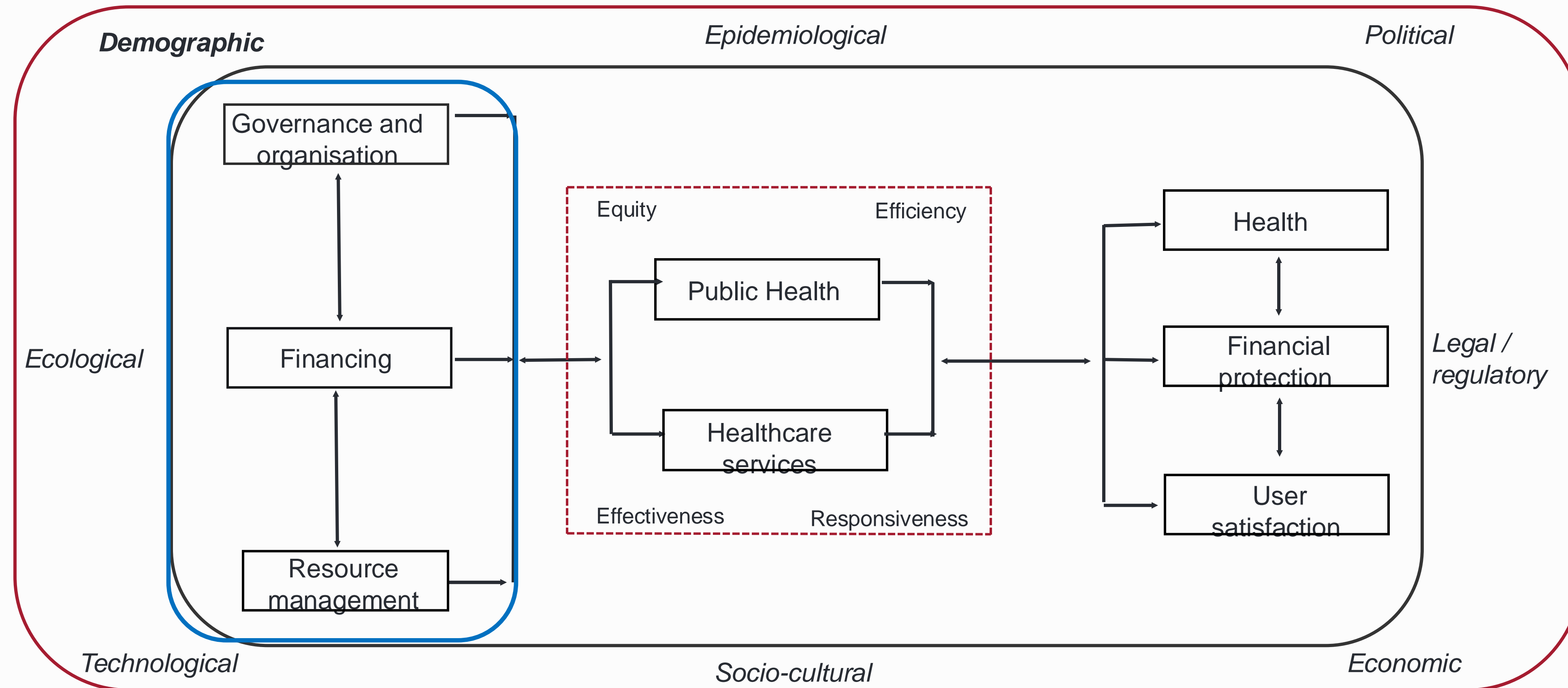
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Component (I): Context

The 8 forces ‘external’ to the health system that impact system performance and create opportunities and threats for innovation and reform

Sub-component	Description
Demographic	Population dynamics – growth and structure
Epidemiological	Trends in disease risk, morbidity and mortality
Political	Political economy, political institutions, citizen engagement & mobilization, political decisions
Legal	National laws, regulatory institutions, international agreements
Economic	Economic growth, favorability of economic environment
Sociocultural	Public attitudes and beliefs related to health, social mores, lifestyles
Ecological	Human and urban ecology, physical environment
Technological	Technologies for health and health technologies

Health Systems Analysis Framework



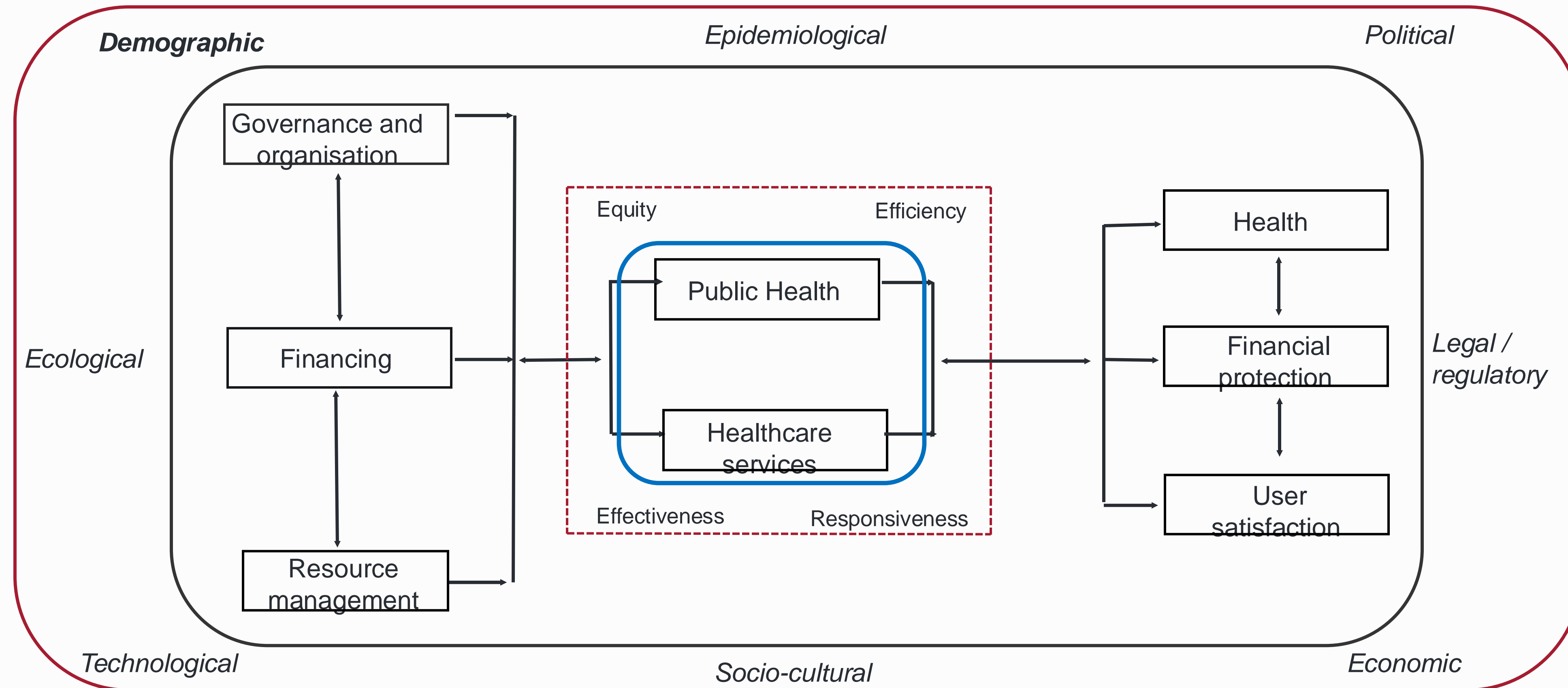
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Component (II): Functions

The ‘inputs’ that policymakers modify to create change in health system outputs, attain policy objectives, and achieve outcomes

Sub-component	Description
Governance and Organization	The structural and functional organization of the health system, including among others, the (I) role of major institutions (e.g., Ministry of Health), (II) extent of decentralization, (III) scope of regulation vs competition, and (IV) degree of public and private sector involvement
Financing	The generation and application of funding for the health system, including, among others, (I) sources, (II) pooling, (III) channeling, (IV) allocation, and (V) payment
Resource Management	The generation and deployment of resources in health systems, including, among others: (I) capital investments and infrastructure, (II) human resources and knowledge generation, (III) diagnostics (IV) medications, (V) consumables and supplies, (VI) data systems, and (VII) supply chain management

Health Systems Analysis Framework



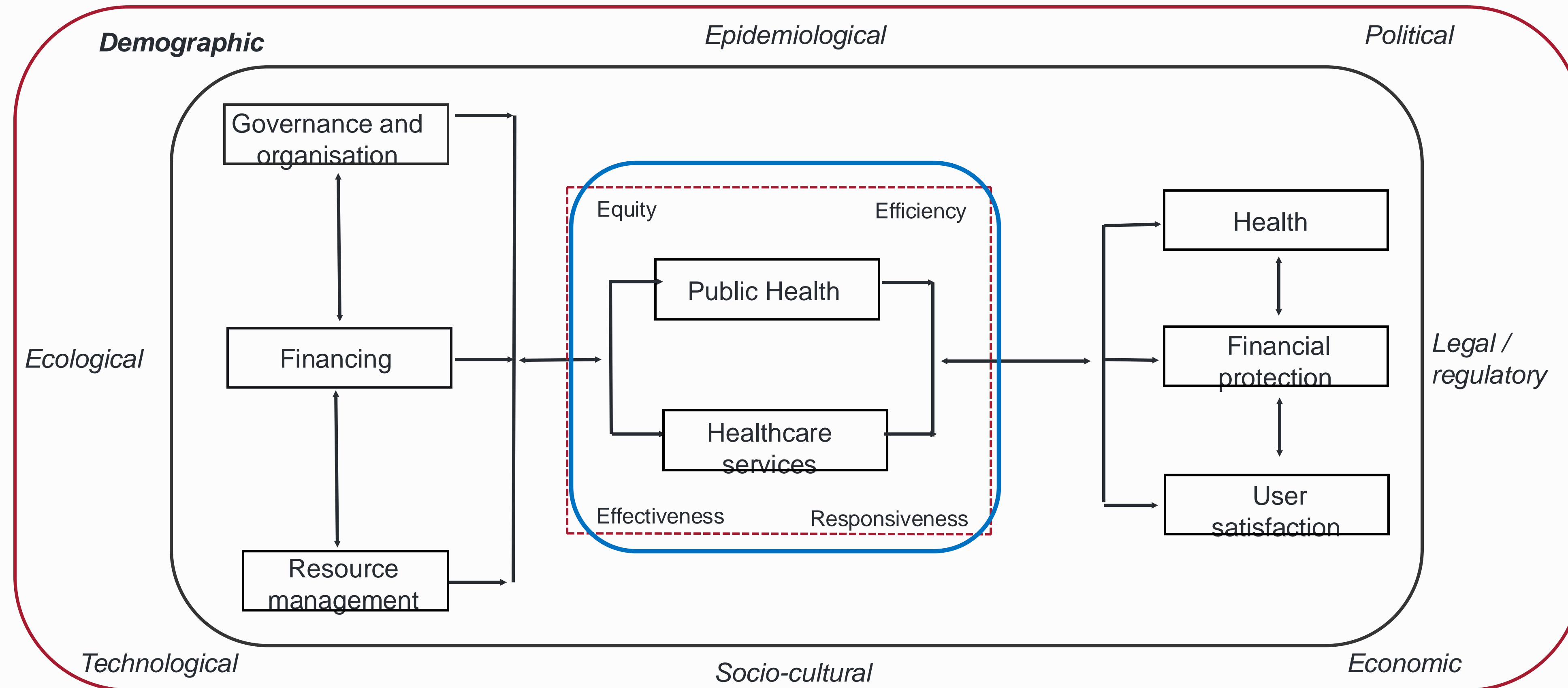
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Component (III): Outputs

*The **health services that are produced** by health systems designed to improve health at both the individual and population level in a nation*

Sub-component	Description
Personal healthcare services	Encompass medical services that are delivered by health providers to patients in their home, communities, primary healthcare and hospitals
Public health services	Entails a broad range of services that focus on improving population level health and wellness through interventions that focus on health protection, promotion, and prevention

Health Systems Analysis Framework



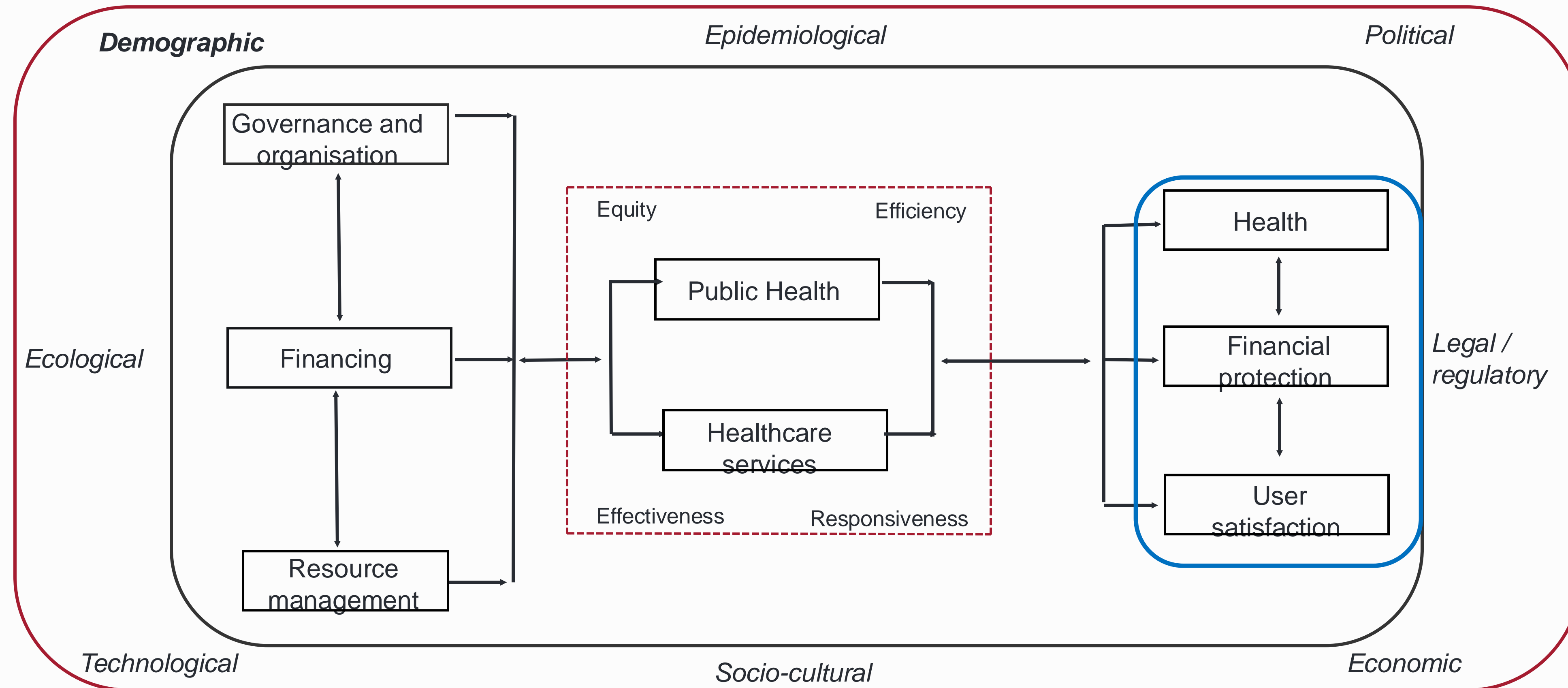
Source: Atun et al. Lancet 2013, Atun and Moore 2021

Component (IV): Objectives

The four ‘value’ enhancing elements of health services delivered by the health system to improve outcomes and achieve results

Sub-component	Description
Effectiveness	“Provision of the right services” – extent to which desired outcomes are produced when a proven cost-effective intervention is delivered
Efficiency	“Provision of the services in the right way” – production of the maximum goods and services for a given amount of resource
Equity	“Provision of services in a fair way” – access to health services and subsequent outcomes for different segments of a population
Responsiveness	“Provision of services to meet user needs” – provision of services that meet the expectations of users

Health Systems Analysis Framework



Source: Atun et al. Lancet 2013, Atun and Moore 2021

Component (V): Outcomes

The ultimate goals and results produced by health systems at the national level

Sub-component	Description
Health	The level and distribution of health, mortality, burden of disease, and specific population outcomes
Financial Risk Protection	The extent of financial risk protection for the population or specific sub-groups when accessing health services produced by the health system
User Satisfaction	The degree to which users (citizens, patients and healthcare workers) are satisfied with their health system

The Health Systems Visualization Tool

How to use the tool: 10 steps

1. Using a desktop web browser, open the tool in [Tableau Public](#)
2. Select 1 of the 5 components: (I) context, (II) functions, (III) objectives, (IV) outputs, (V) outcomes
3. Select a subcomponent (e.g., with Context, select one of the factors [Demographic, Economic, Epidemiological, Sociocultural in this dataset]; with Functions, select Financing or Resource Management; with Objectives, select 1 of the 4 sub-components: (I) effectiveness, (II) efficiency, (III) equity, (IV) responsiveness; with Outputs select Individual Health Services or Public Health Services, and; with Outcomes, select Health or Financial Risk Protection [the data available in this dataset]
4. Select a variable
5. Select a measure
6. Select a country, countries of interest (e.g., G7), or “all”
7. View results
8. Use slider to modify years for results provided
9. Use country panel to highlight specific countries of interest
10. Analyze the performance of health systems

Example: Hospital admission for Hypertension in G7 Nations

Step 1: Open tool using Tableau Public

[Use a desktop web brozer to access the Health Systems Innovation Lab: Health Systems Performance Analysis Tool](#)

Step 2: Select a component

HSIL_HSP_OECD

Component

☐ Context

☐ Functions

☐ Outputs

☒ Objectives

☐ Outcomes

Sub-component

☒ Effectiveness

☐ Efficiency

☐ Equity

☐ Responsiveness

Variable

Hypertension

Measure

Hospital Admissions pe...

Country

☐ (All)

☐ Australia

☒ Austria

☐ Belgium

☐ Canada

☐ Chile

☐ Colombia

☐ Costa Rica

☐ Czech Republic

☐ Denmark

☐ Estonia

☐ Finland

☐ France

☐ Germany

☐ Hungary

☐ Iceland

☐ Ireland

☐ Israel

☐ Italy

Year

2000

2022

Country

Step 3: Select a sub-component

HSIL_HSP_OECD

Component

- ☐ Context
- ☐ Functions
- ☐ Outputs
- ☒ Objectives
- ☐ Outcomes

Sub-component

- ☒ Effectiveness
- ☐ Efficiency
- ☐ Equity
- ☐ Responsiveness

Variable

Hypertension

Measure

Hospital Admissions pe...

Country

- ☐ (All)
- ☐ Australia
- ☐ Belgium
- ☐ Canada
- ☐ Chile
- ☐ Colombia
- ☐ Costa Rica
- ☐ Czech Republic
- ☐ Denmark
- ☐ Estonia
- ☐ Finland
- ☐ France
- ☐ Germany
- ☐ Hungary
- ☐ Iceland
- ☐ Ireland
- ☐ Israel
- ☐ Italy

Year

2000 2022

Country

Step 4: Select a variable

HSIL_HSP_OECD

Component

☐ Context

☐ Functions

☐ Outputs

☒ Objectives

☐ Outcomes

Sub-component

☒ Effectiveness

☐ Efficiency

☐ Equity

☐ Responsiveness

Variable

Hypertension

Measure

Hospital Admissions pe...

Country

☐ (All)

☐ Australia

☐ Belgium

☐ Canada

☐ Chile

☐ Colombia

☐ Costa Rica

☐ Czech Republic

☐ Denmark

☐ Estonia

☐ Finland

☐ France

☐ Germany

☐ Hungary

☐ Iceland

☐ Ireland

☐ Israel

☐ Italy

Year

2000

2022

Country

Step 5: Select a measure

HSIL_HSP_OECD

Component

☐ Context

☐ Functions

☐ Outputs

☒ Objectives

☐ Outcomes

Sub-component

☒ Effectiveness

☐ Efficiency

☐ Equity

☐ Responsiveness

Variable

Hypertension

Measure

Hospital Admissions pe...

Country

☐ (All)

☐ Australia

☒ Austria

☐ Belgium

☐ Canada

☐ Chile

☐ Colombia

☐ Costa Rica

☐ Czech Republic

☐ Denmark

☐ Estonia

☐ Finland

☐ France

☐ Germany

☐ Hungary

☐ Iceland

☐ Ireland

☐ Israel

☐ Italy

Year

2000

2022

Country

Step 6: Select countries of interest

HSIL_HSP_OECD

Component

☐ Context

☐ Functions

☐ Outputs

☒ Objectives

☐ Outcomes

Sub-component

☒ Effectiveness

☐ Efficiency

☐ Equity

☐ Responsiveness

Variable

Hypertension

Measure

Hospital Admissions pe...

Country

☐ (All)

☐ Australia

☐ Belgium

☐ Canada

☐ Chile

☐ Colombia

☐ Costa Rica

☐ Czech Republic

☐ Denmark

☐ Estonia

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☐ France

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☐ Hungary

☐ Iceland

☐ Ireland

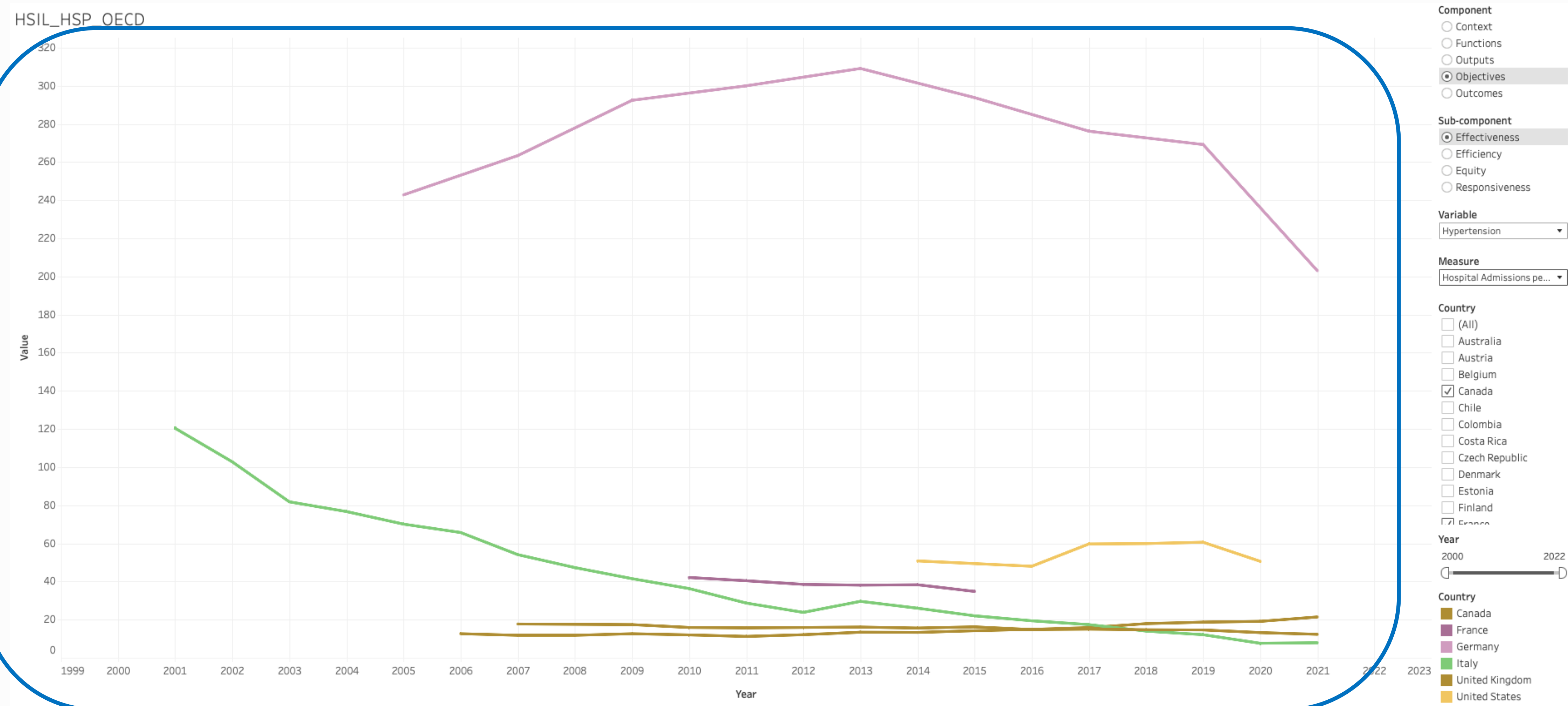
☐ Israel

Year

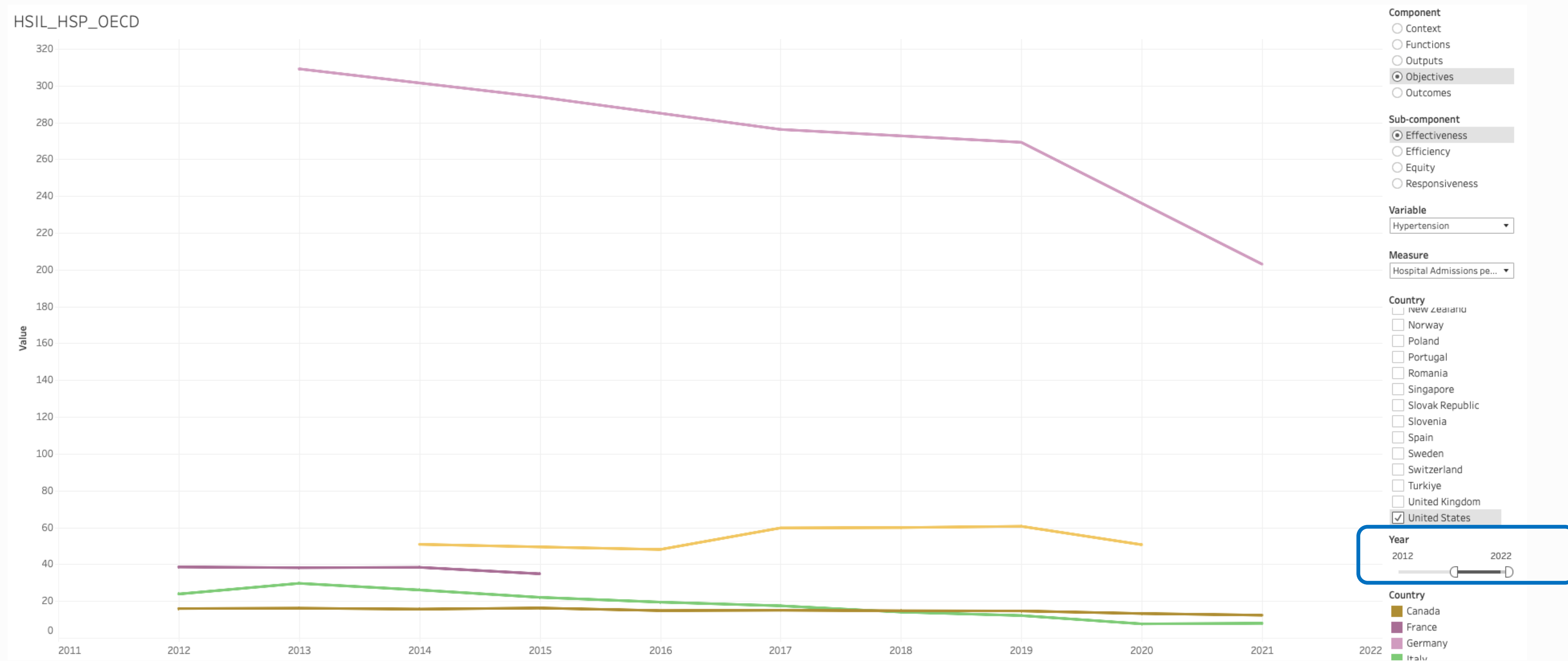
2000 2022

Country

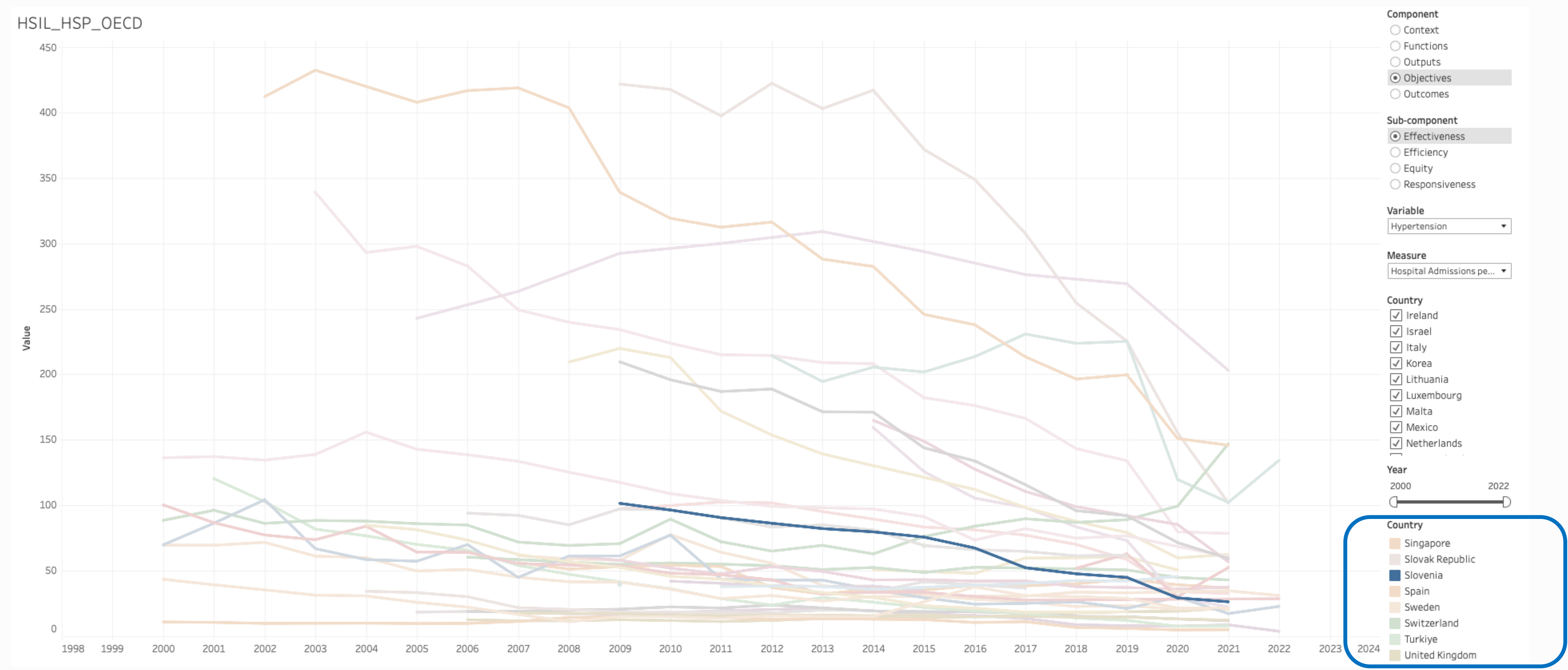
Step 7: View results



Step 8: Use slider to modify years for results provided

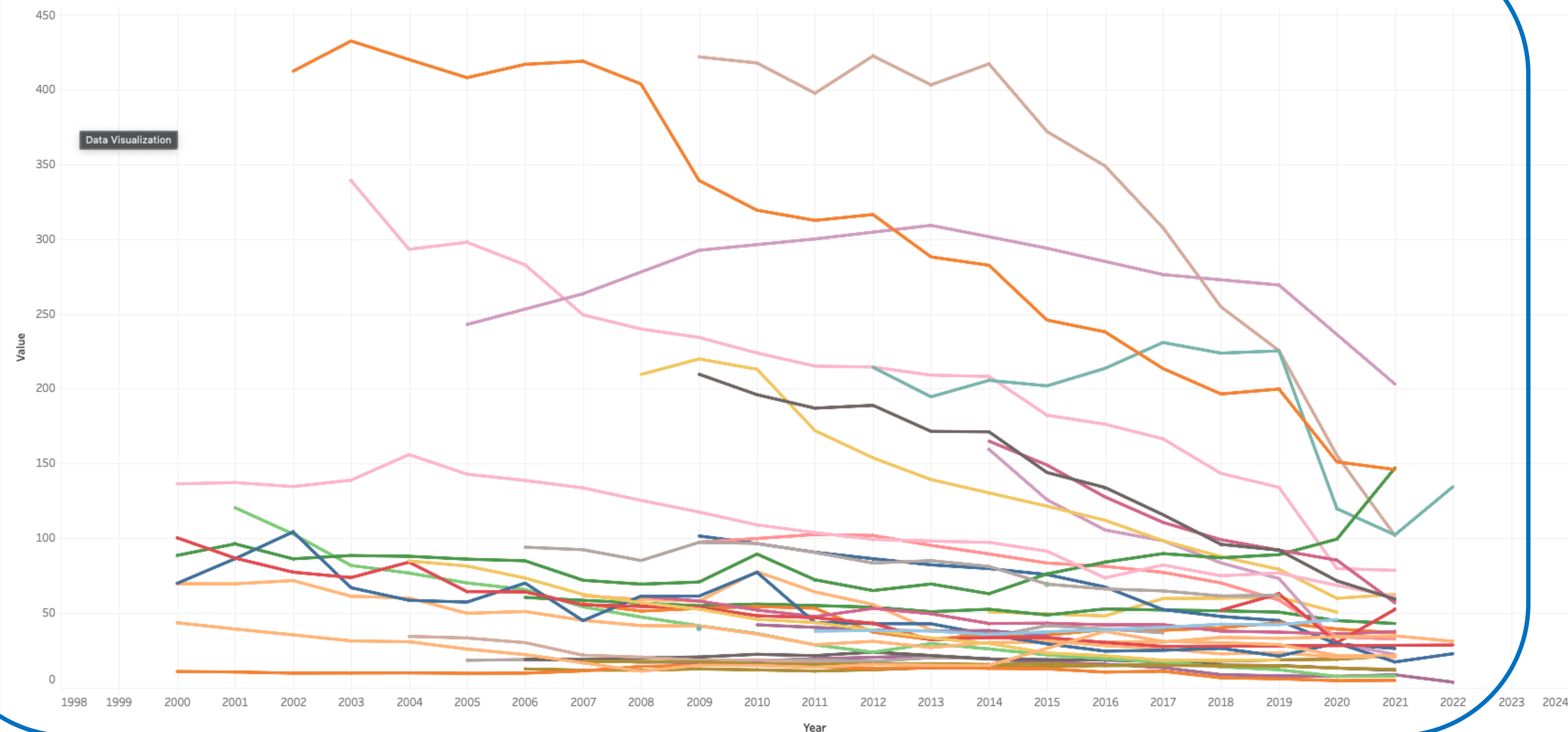


Step 9: Use country panel to highlight specific countries of interest



Step 10: Analyze the performance of health systems

HSIL_HSP_OECD



Example – you try!

Use the tool to:

- Plot number of cataract surgeries (total procedures per 100,000 people) in G20 nations performed on an outpatient basis
- Discuss in your groups
- Identify 1 reason that could explain variation across countries
- Identify 1 response countries could pursue to increase outpatient cataract surgeries