

# The economics of Cyprus GeSY (GHS)



By Elias Mallis  
Senior Economic Officer  
Directorate of Economic Policy and EU Affairs  
Economic Policy Unit  
Ministry of Finance

# Contents

1. Introduction
2. Gesy principles
3. Gesy financing channels
4. “Health”... a public good?
5. Microeconomic elasticity analysis
6. Microeconomic foundations of the health market (and Gesy)
7. Current risks
8. Gesy financial and fiscal sustainability
9. Concluding remarks

# Introduction

- The introduction of a new healthcare scheme in Cyprus has been discussed over the last 40 years.
- The big discussion focused on the type the health system would take.
- Single, Multiple, Mixed payer scheme.
- Single-payer healthcare scheme is a type of universal healthcare in which the costs of essential healthcare for all residents are covered by a single public system. In Cyprus this is the Health Insurance Organization (HIO) established by law as a monopsony of healthcare services.
- Multiple-payer scheme refers to a health system that is financed through more than a single entity, one of which may include government and there is no monopsony in terms of buying healthcare services.
- Mixed payer scheme combines both types.

## Introduction (2)

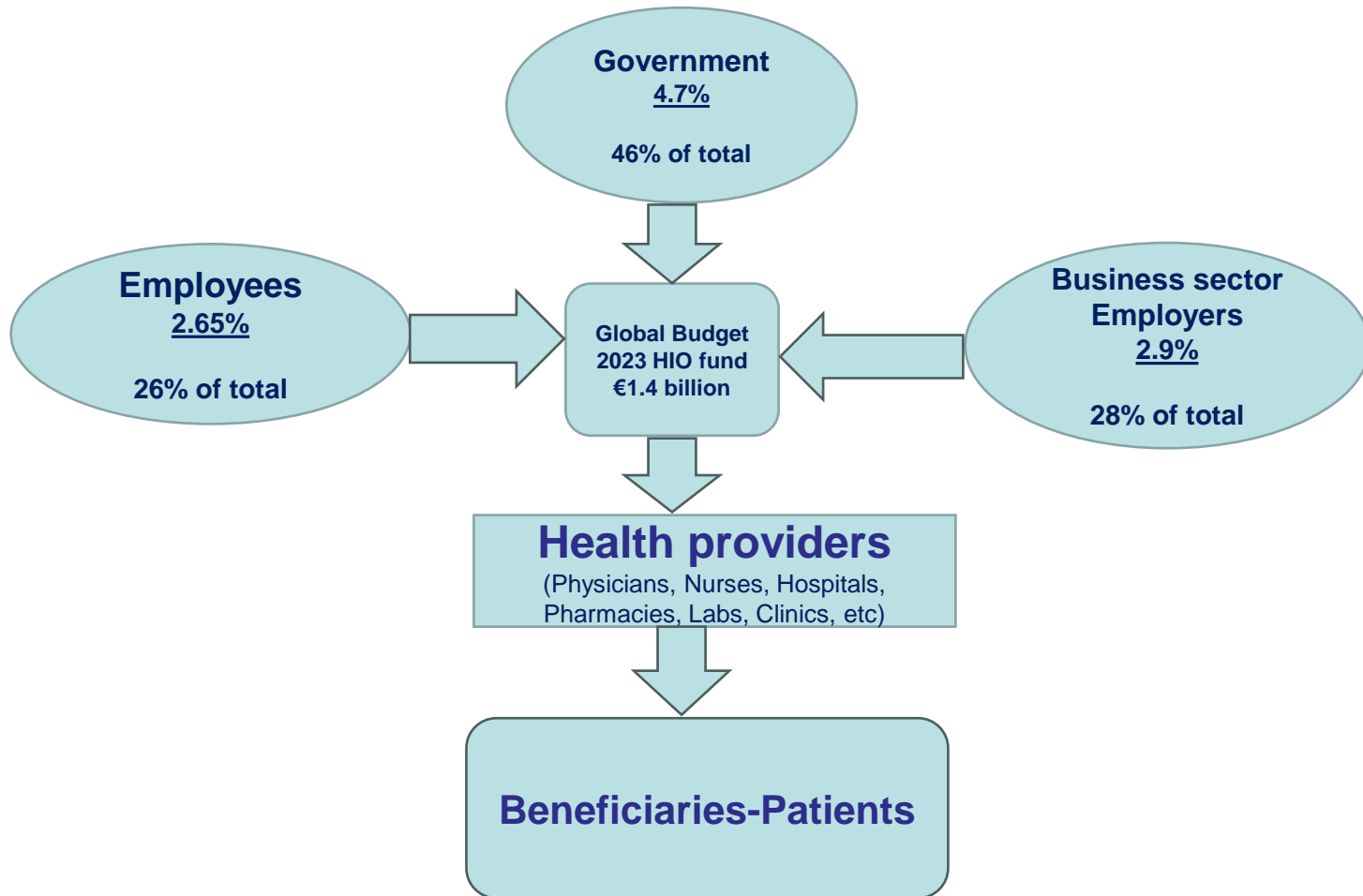
- The major difference of single with multiple payer is that the latter is based on the ability of beneficiaries to pay, whereas in the single payer scheme the beneficiary pays a standard fee and enjoys universal health coverage according to the health system's special provisions.
- The Cyprus government decided to introduce a single payer scheme and the Health Insurance Organization (HIO) is the unique entity responsible by law to administer the HIO Fund.
- As you might know gesy was introduced in phases starting from 1/6/2019 with the outpatient services and one year later the inpatient services entered.
- Currently, gesy is at a stage of full development in terms of health providers' entrance and healthcare provision.

# Gesy principles

- The basic principles of Gesy are the following:
  - Equal access independently of a person's financial state.
  - Free choice of health provider.
  - Universal and integrated healthcare provision and coverage to avoid catastrophic health expenses.
  - Provision of quality healthcare services at a universal level.
  - Solidarity wherein healthy population finances non healthy population and more rich population contributes to the benefit of less rich population.

# Gesy financing channels

## Gesy financing blueprint



# “Health” ... a public good?

- The health goods/services are provided by both the public and the private sector.
- However, some particularities existing in the Health Market (HM) cause market failures, thus there is a big divergence from the perfect competition paradigm where producers supply goods when the Marginal cost equals the price of the commodity and the consumer sovereignty occurs once they can buy the good at its lowest price, where  $P = MR = MC$  .

# “Health” ... a public good?

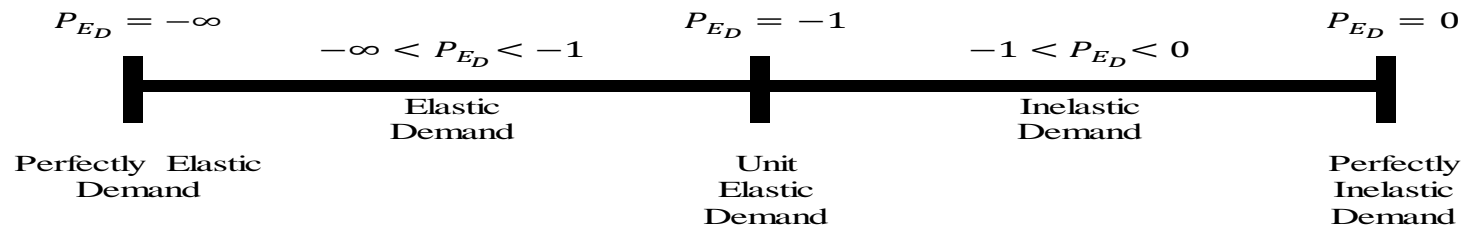
- Public goods among others maintain some characteristics such as:
  - indivisible, i.e. you can't cut it in pieces,
  - non excludable i.e. if possible all patients should be treated, a public road is used by all citizens and
  - nonrivalrous i.e. health services can be consumed by people but their supply is not affected by these people's consumption.
- These market failures make “health” to be more like a public rather than a private good.
- Other examples of public goods are education, defense, social welfare etc.



# Microeconomic elasticity analysis

## Price Elasticity of Demand

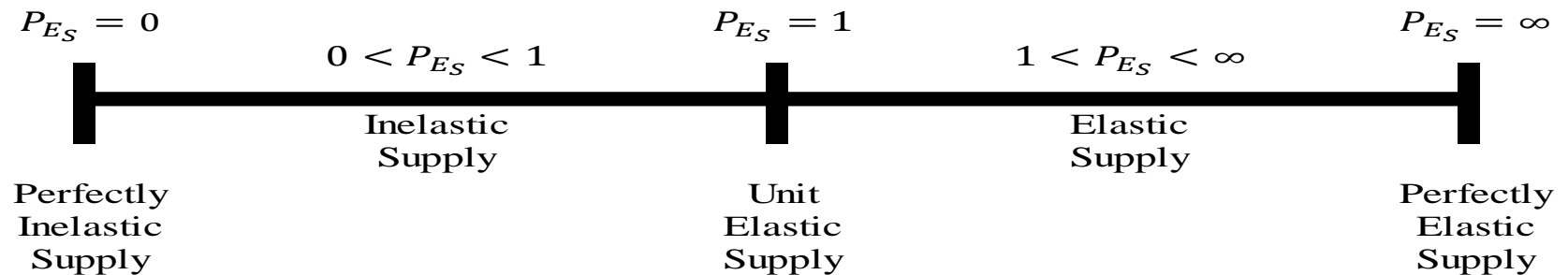
Because of the **law of demand**, price elasticity of demand takes a **negative value**. It takes values from  **$-\infty$  to 0**.



# Microeconomic elasticity analysis

## Price Elasticity of Supply

Because of the law of supply, price elasticity of supply takes a positive value. It takes values from  $\infty$  to 0.



**In absolute terms:**

**Perfectly elastic demand (supply) is a horizontal (vertical) line**

**Perfectly inelastic (elastic) demand (supply) is a vertical (horizontal) line**

**A unitary demand (supply) curve is a 45 degree negatively sloped line (positively sloped line).**

**A 45° line means that the % change of price is equal to the % change of quantity.**

## Microeconomic foundations of the health market

- Health goods and services are necessities and this determines the behavior of consumers (patients) and producers (health providers).
- As a necessity its price elasticity of demand is price inelastic i.e. between -1 and 0 and the law of demand holds.
- Recent estimations bring it to around -0.17, so it is relatively inelastic.
- As a product it hasn't got many substitutes confirming the value of its price elasticity of demand being low.
- The price elasticity of supply of health services is low too and it is positive and the law of supply holds. It is estimated to +0.57.
- Low price elasticity of supply is attributed to specialization factors related to the health sector, such as physicians, medicines, medical technology, not many substitutes of providers etc.

## Microeconomic foundations of the health market

- What happens when demand is inelastic?
- Inelasticity of demand means that demand remains relatively constant when price changes (necessities, number of substitutes).
- What happens when supply is inelastic?
- Inelasticity of supply means that there is a scarcity in the availability of production inputs, it needs time to adjust production process and there are technological constraints.

# Microeconomic foundations of the health market and Gesy



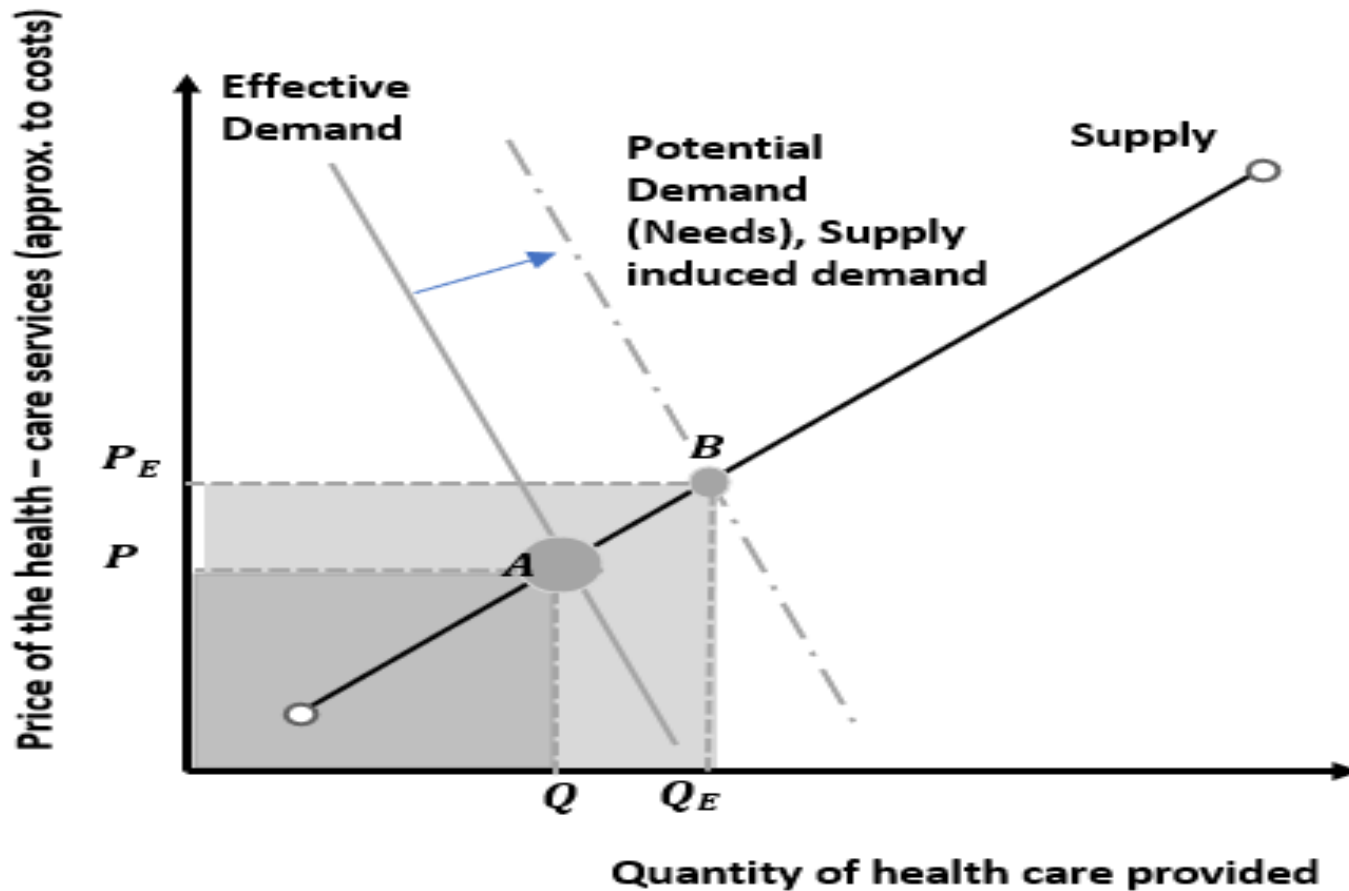
- In the next graph under a comparative static setup, the introduction of Gesy caused an increase in the demand of health services causing the rightward shift of effective (real) demand.
- In the health market due to information asymmetry existing between patients with providers, the latter can use this information advantage to their benefit by raising health care needs.
  - The asymmetry stems from the fact that the provider (supplier) has an information advantage against the patient (consumer).
  - The same happens for instance with cars when your car needs repair. The engineer has an information advantage against the car's owner.

- More needs lead the effective demand to shift out to the potential (supply induced demand) (SID) (ΠΡΟΚΛΗΤΗ ΖΗΤΗΣΗ) that is highly associated with unmet medical needs by patients or low know-how of engineering in the car's example.
- The new equilibrium price is higher by  $(P_E - P)$  and the equilibrium quantity is higher by  $(Q_E - Q)$ , at point B from point A.
- The additional equilibrium output is equal to  $(P_E \times Q_E) - (P \times Q)$  equals to additional turnover of the health provider.
- In health economics, supply induced demand can be defined as the amount of demand that exists beyond what would have occurred in a market in which patients are fully informed, i.e. arises when information asymmetry is evident.

# Microeconomic foundations of the health market and Gesy



## Diagrammatical analysis before Gesy enters



# Microeconomic foundations of the health market and Gesy

- Due to information asymmetry in the health market, other types of behavior come in, such as moral hazard and adverse selection.
- Moral hazard is the change in health behavior and consumption of health services because of insurance coverage. In case you know you are health insured you may change your behavior and seek more health care services (insurance effect).
- Adverse selection in health occurs when a person waits until he knows he is sick and in need of health care before applying for a health insurance policy in order to avoid paying a higher premium.
- These kind of behaviors occur in the health market due to asymmetric information that change the decision making of both, providers and patients.
- This is the reason of diverging from the perfect competition paradigm and defines the existence of a Supply Induced Demand curve.

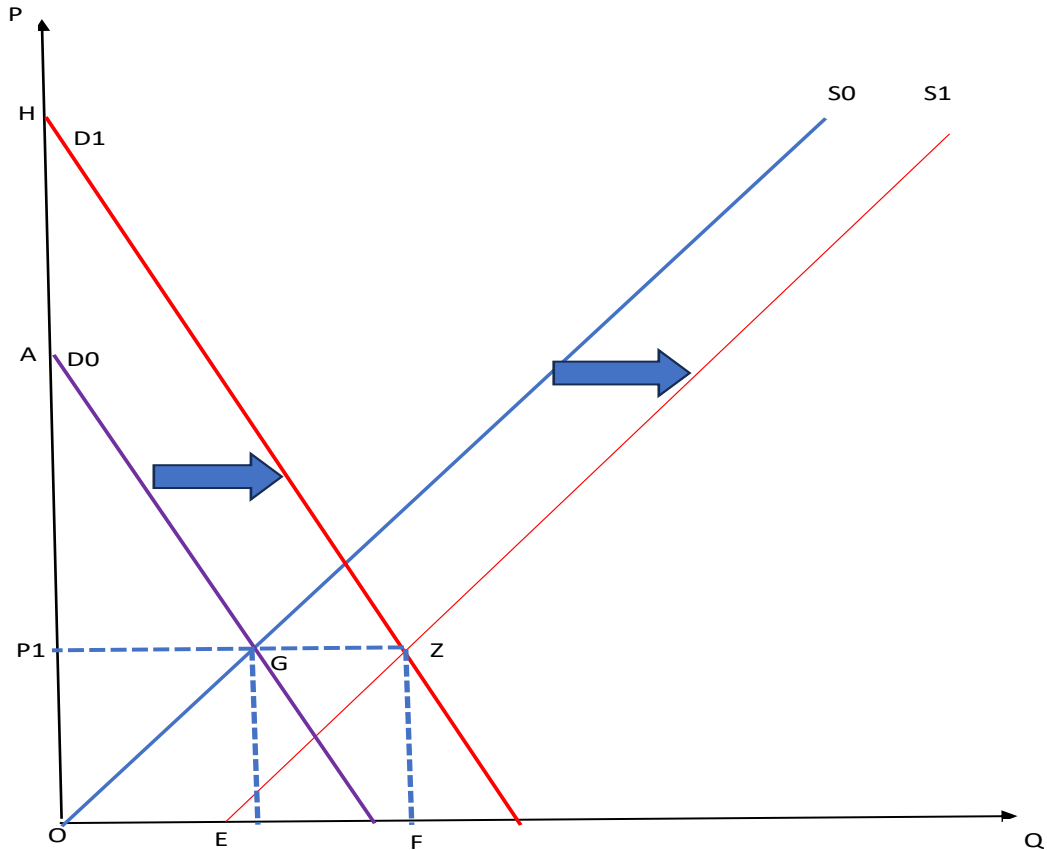


# Microeconomic foundations of the health market and Gesy

- Under Gesy environment the Demand curve moved upwards while Supply shifted rightwards as presented in the next graph indicating an increase of both curves, meaning more supply and demand of health goods and services.
- The initial equilibrium point is at point G and the final equilibrium point as depicted is at point Z.
- In real data, the Statistical Service estimated that the overall and the average percentage change of health prices during 2020-2022 have been maintained at relatively stable level as shown in the graph.
- In reality the percentage change of some health products' prices increased and some others decreased but overall on average the percentage change remained constant.
- The graph exhibits that both patients and providers were both better off after Gesy introduction and that at equilibrium point Z, the consumer and the producer surplus are positive.
- Bear in mind that the payoffs of the rising output is divided and allocated into all health care segments in the corresponding markets; e.g. family doctors market, specialists market, pharma market, labs market, physio market, hospital's market etc.

# Microeconomic foundations of the health market and Gesy

## Consumer and producer surplus analysis & current state of play



# Microeconomic foundations of the health market and Gesy

## Consumer and producer surplus analysis & current state of play

- The final consumer surplus is higher than the initial; patients are better off:

$$(P1H)(P1Z)/2 > \frac{(P1G)(P1A)}{2}$$

- The final producer surplus is higher than the initial; thus providers are better off:

$$\frac{((P1G)+(GZ)+(OE))(OP1)}{2} > \frac{(P1G)(OP1)}{2}$$

- Comparing the final patients' with providers' surplus the result is ambiguous due to the relative elasticities values, the 45<sup>0</sup> line and the fixed price.
- In the long run, a more macro analysis is required and other analysis is needed, such as, game theory models and more strategic decision making where market power plays a vital role.

$$\frac{(P1G + GZ)(P1A + AH)}{2} \begin{matrix} \geq \\ < \end{matrix} \frac{((P1G)+(GZ)+(OE))(OP1)}{2}$$

# Current risks of Gesy

- 1) Abuse and/or misuse of the system (controls, medical audit, quality criteria associated with reimbursement methods, enhance internal controls and audit mechanisms, better control of the inpatient care, the IT coding system, increase penalties).
- 2) Patients queuing up to see a specialist.
- 3) New high-technology in medicine is costly and HIO's aim should be to manage effectively Gesy finances in order to serve the patients in accountable and efficient manner.
- 4) It needs a robust capacity planning once oversupply is observed in most healthcare segments causing downward pressures on prices leading providers willing to negotiate higher global budgets for the next year.
- 5) The above causes pressures on public finances through complementary budgets.
- 6) HIO should provide incentives to providers for merging and investing to high-cost technology deal with oversupply.
- 7) Reimbursement of hospitals remain a big challenge but new method has recently been incorporated relatively well.
- 8) Medical audit is needed to restrict effectively the misuse of the system.

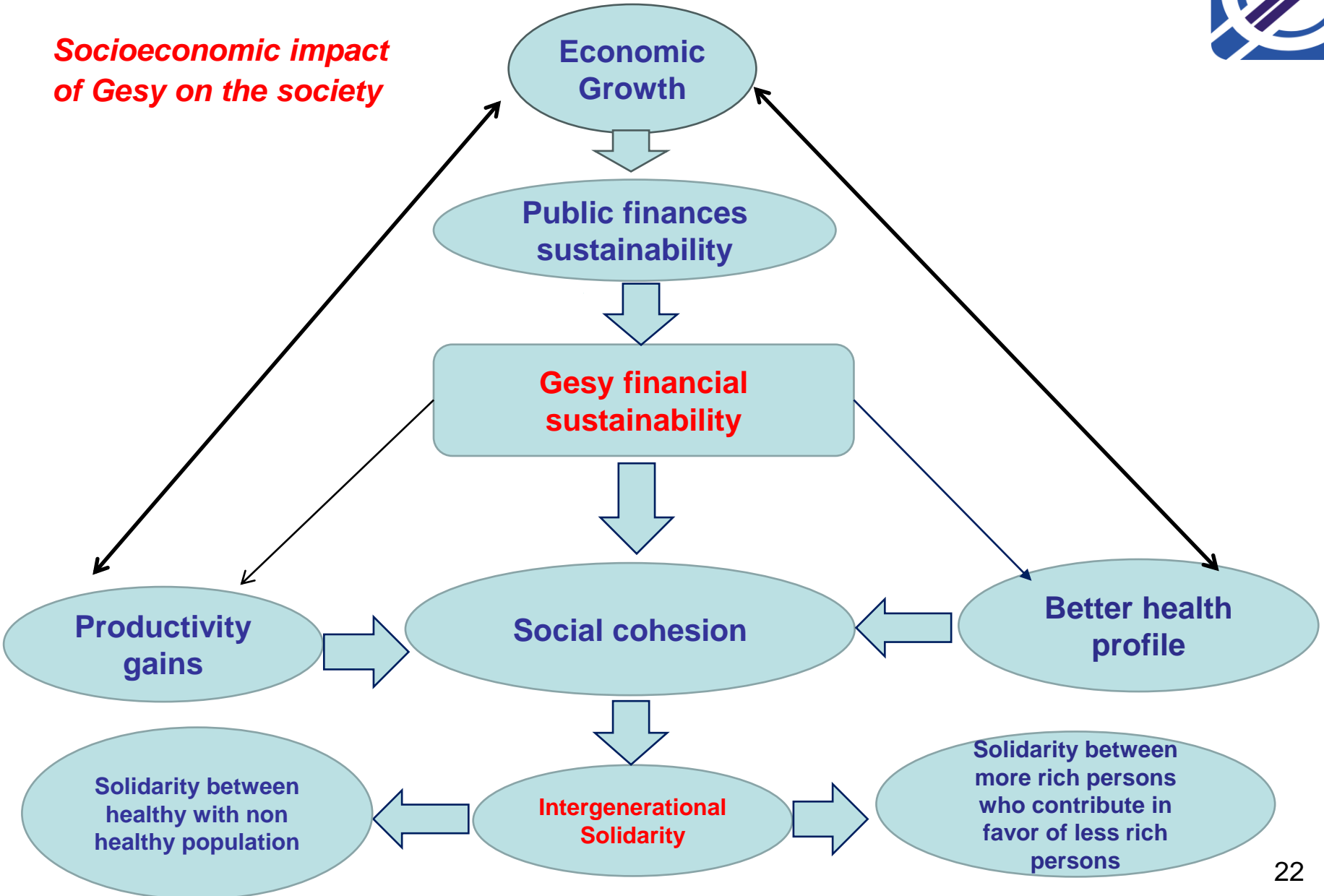
## Gesy financial and fiscal sustainability

- Maintaining fiscal sustainability is imperative to retain public finances viability, through which health expenditure adjustment could keep Gesy sound in the long run.
- The public sector contribution to Gesy is nearly 50% of total Gesy contributions; that renders the public sector the biggest contributor.
- Under Gesy environment one way to preserve sustainability is via a GDP growth rate rule;
  - Such rule could be adjusting health expenditure without causing unnecessary financial instability in public finances, based always upon the health needs of the society
  - Such rule could also retain health prices at a moderate level and ensure long run health financial sustainability
  - This rule could be flexible enough and adjust accordingly to meet the health needs of the society (e.g. innovative medicines and medical technology).

# Gesy financial and fiscal sustainability



*Socioeconomic impact  
of Gesy on the society*



## Concluding remarks

- Gesy top priority should be the efficient service of citizens legally residing in Cyprus by providing quality health care services at reasonable and affordable prices.
- Gesy financial sustainability however, can be more easily sustained if health prices are retained relatively stable and HIO can keep on achieving high utilization rates without at the same time reducing the quality of the services provided.
- Without public finances sustainability Gesy could find itself under severe risks in both monetary and implementation terms.
- Henceforth, any unnecessary political decisions endangers the risk of derailment of Gesy sustainability and thus, the decision making process should be pursuing facts, best practices and avoid strict populist intervention causing pointless spending.
- In the end, gesy could serve its role, if and only if, finds itself at a stage to pursuing technological and medical challenges efficiently for the benefit of the Cypriot citizen.

**Thank you for your attention!**