

# Aging Population Thinking and Innovation

Nepal Team 1

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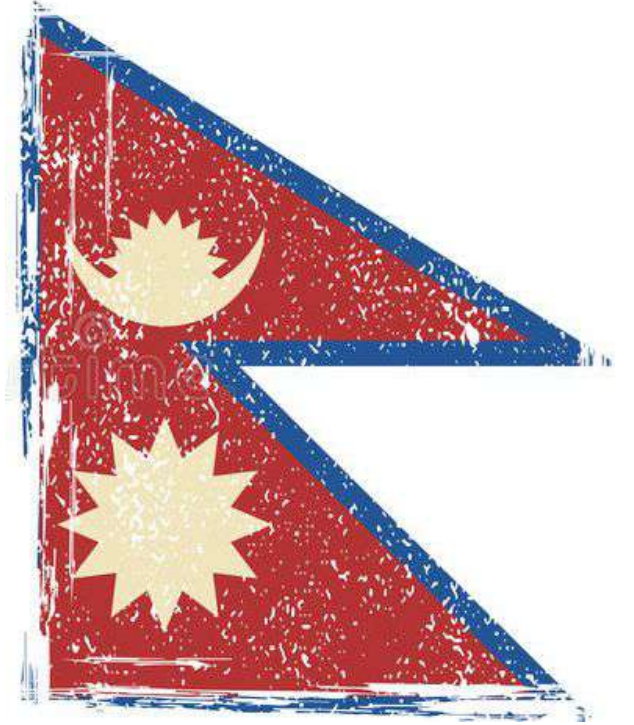
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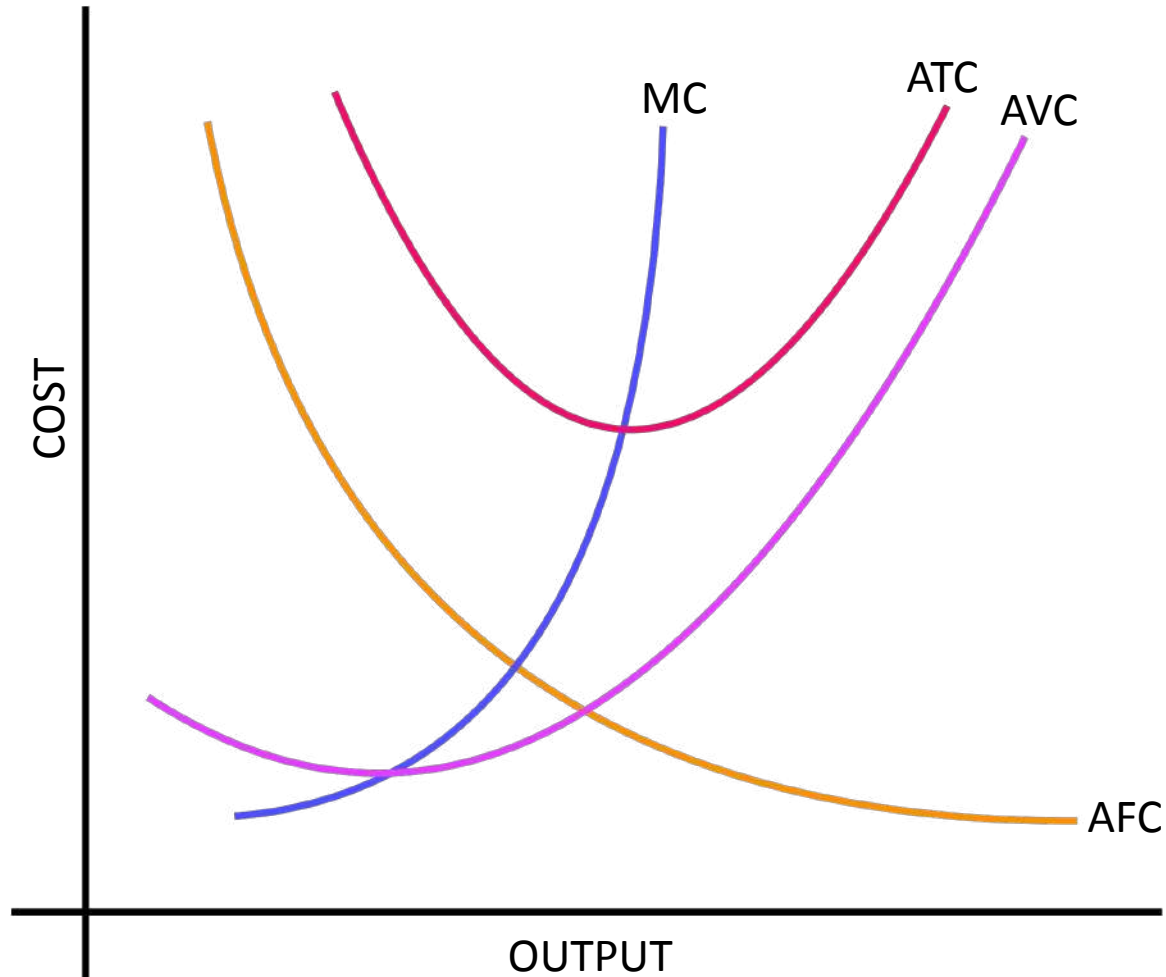
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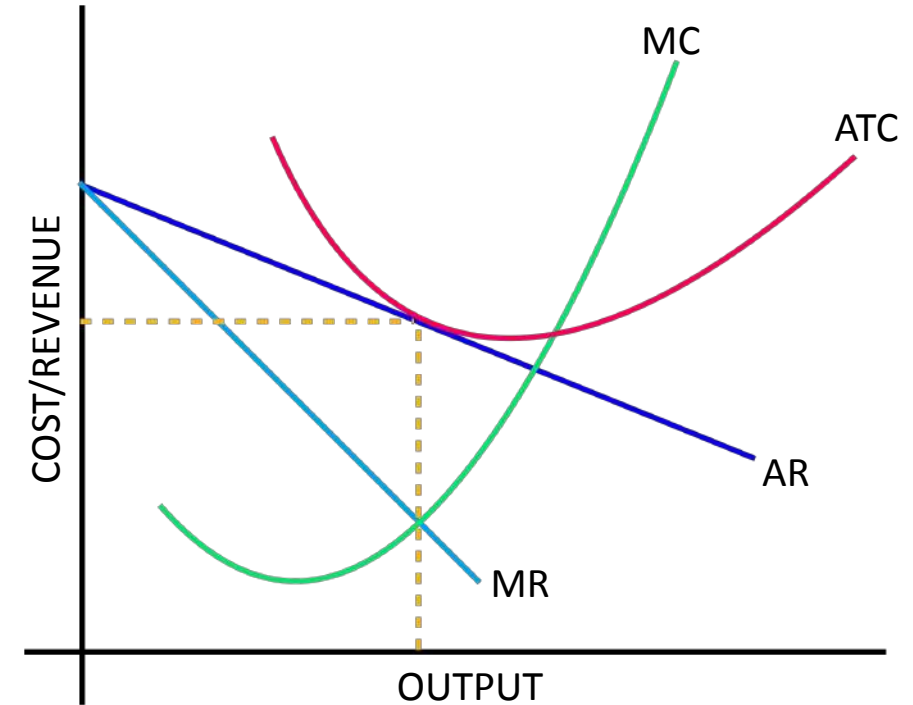
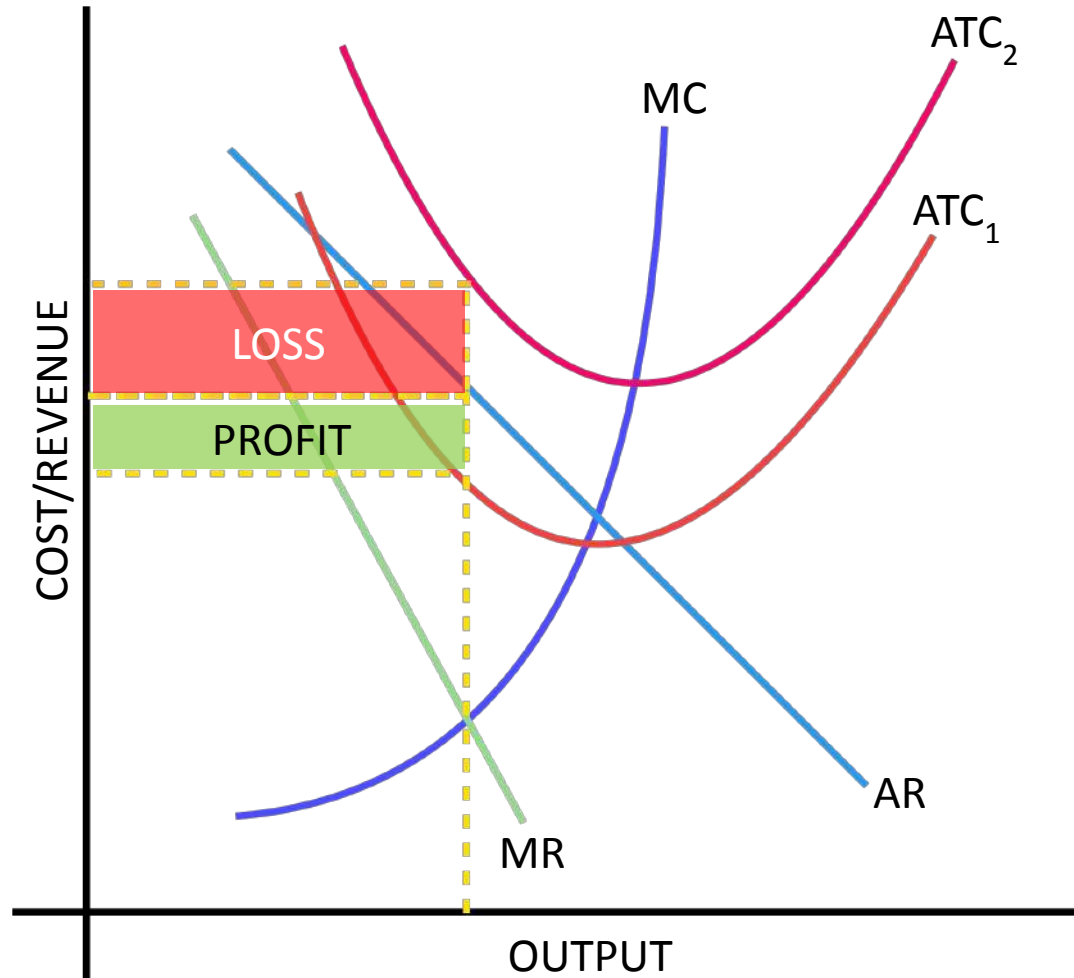


## Q1: MC, ATC, AFC, AVC. What decisions should Company W make in short and long term?



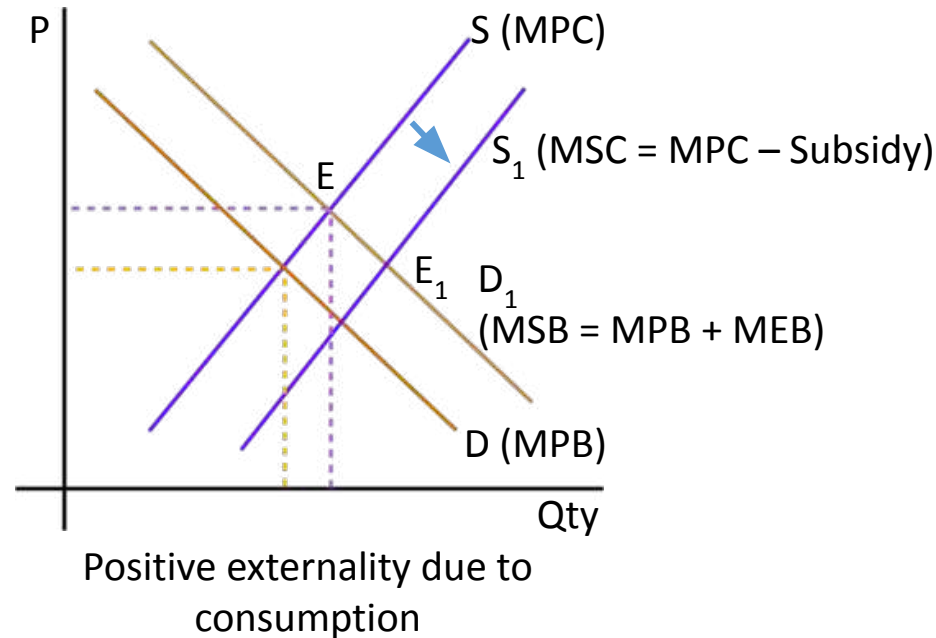
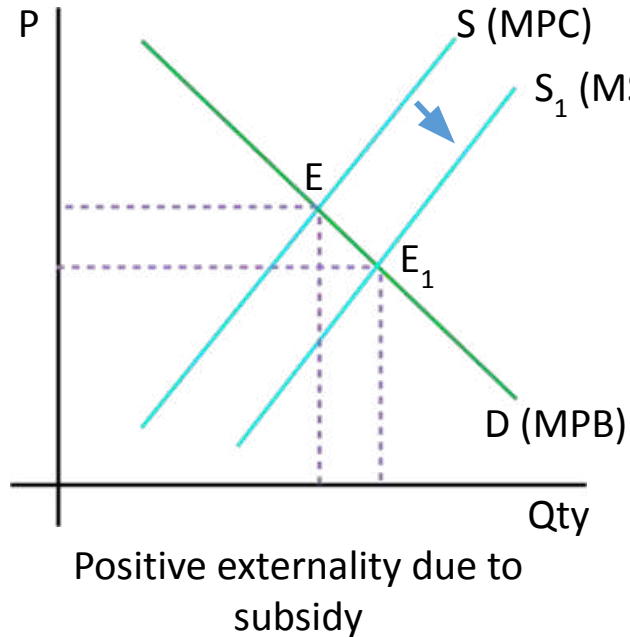
- Short-run decisions
  - Production at:  $MR = MC$
  - Promotion and Advertisement
  - Specialization
- Long-run decisions
  - Service Differentiation
  - Research and Development
  - Equity Finance

## Q2: Market Structure? Losses, profits, and long-run profits. Why will the firm stay?



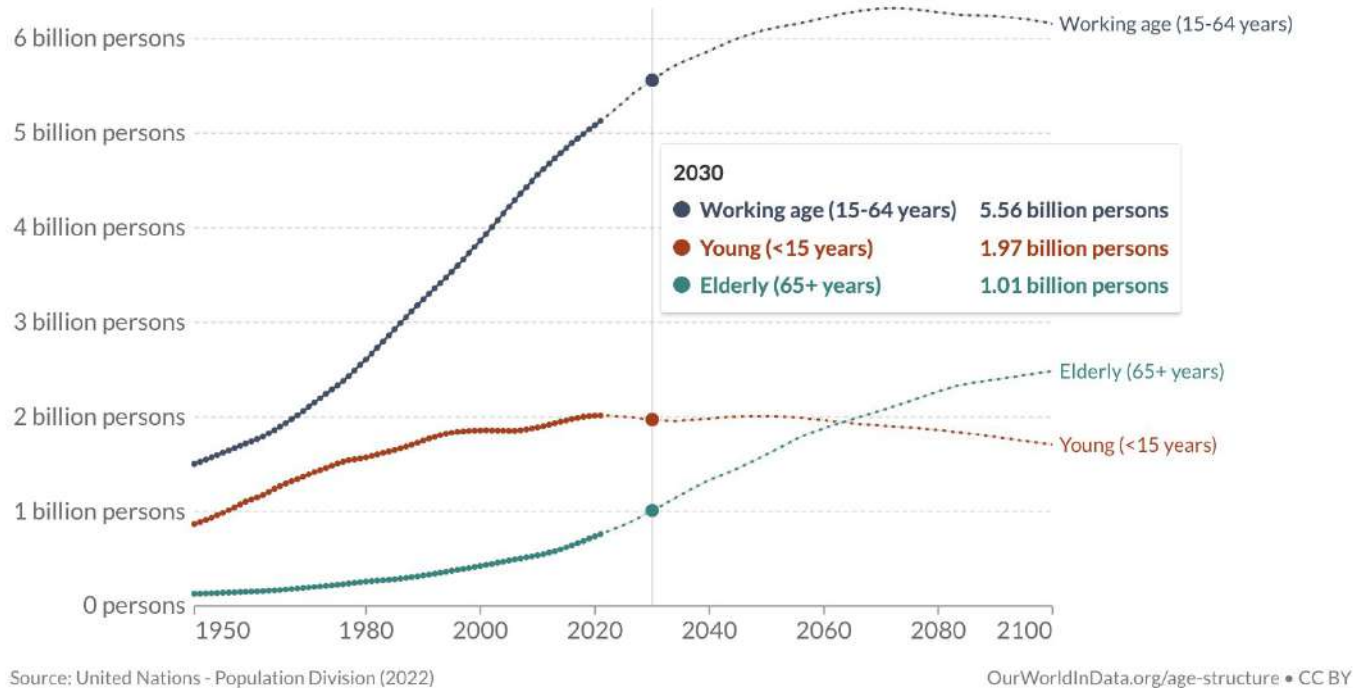
- A monopolistic market structure
- Breakeven condition:  $AR$  equals  $AC$
- Still enjoys accounting profit

### Q3: Nursing homes, type of good? Characteristics? Externality, its consequence, and it's solution



- Private Good
  - Excludability and Rivalry
- Results in positive externality
  - $MSB > MPB$
- Underallocation of merit goods
- Measures to solve the externality:
  - Nudging
  - Provision of Subsidy
  - Provision of Information

# Problem: Increase in elderly population is likely to overburden healthcare system with increase in the consumption of healthcare resources in long-term



- Theory of demographic transition is applicable
- Developed countries tend to have a lower fertility
- Mortality rates are low, birth control is easily accessible
- Children considered as economic drain
- Women have children late in life
- Workforce expected to fall by 8 million by 2030
- Increase in dependency ratio
- Younger population need to be overworked, giving them less time and making having children more and more unattractive
- Leads to decline of young and working people in contrast to increasing old; creating creates a viscous cycle

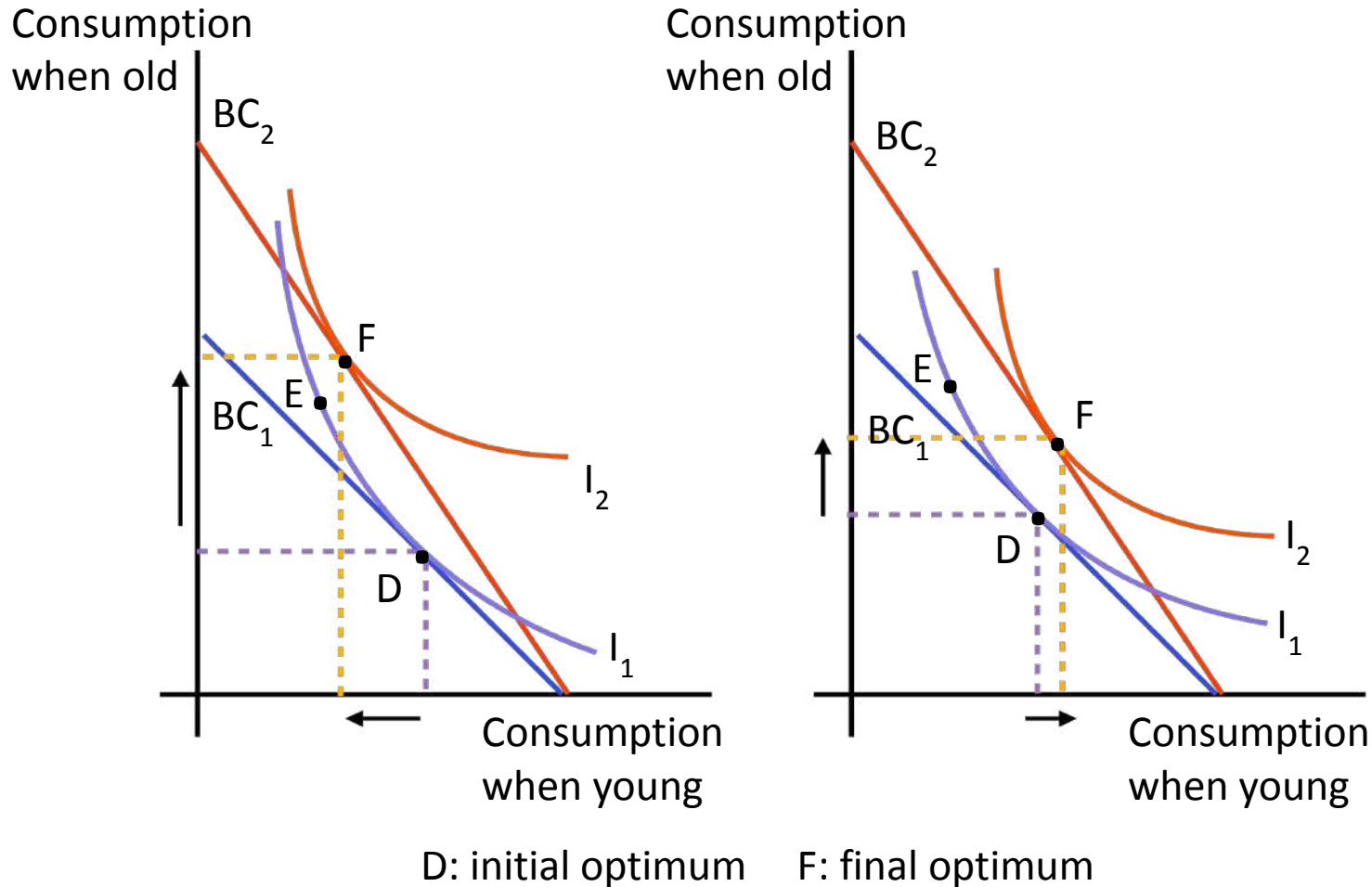
## Solution 1: Voluntary awareness of good health practices

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- Redesigning daily routine incorporating more physical activity and necessary supplements
- Developing a positive social well being
- Being focused on Healthy Aging
- Reducing the consumption of synthetic chemicals
- Consuming a balanced diet
- Keeping the mind active by engaging in social activities and learning new skills

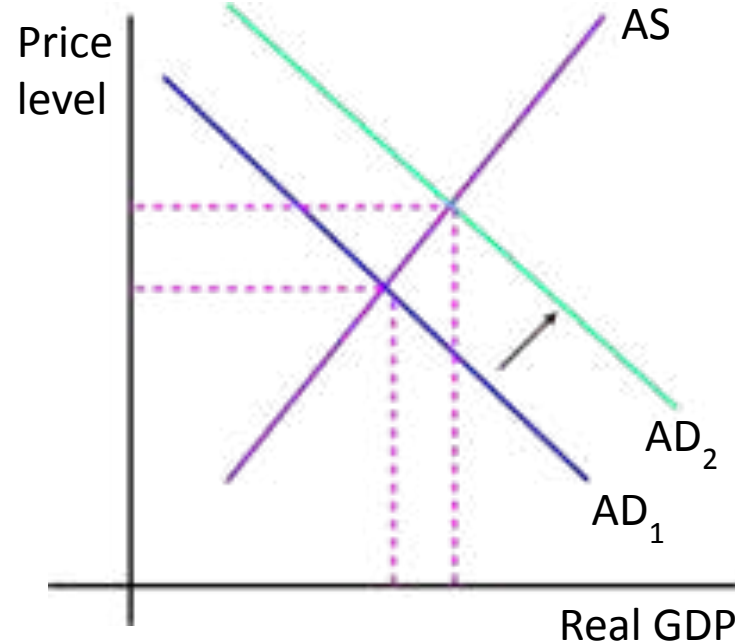
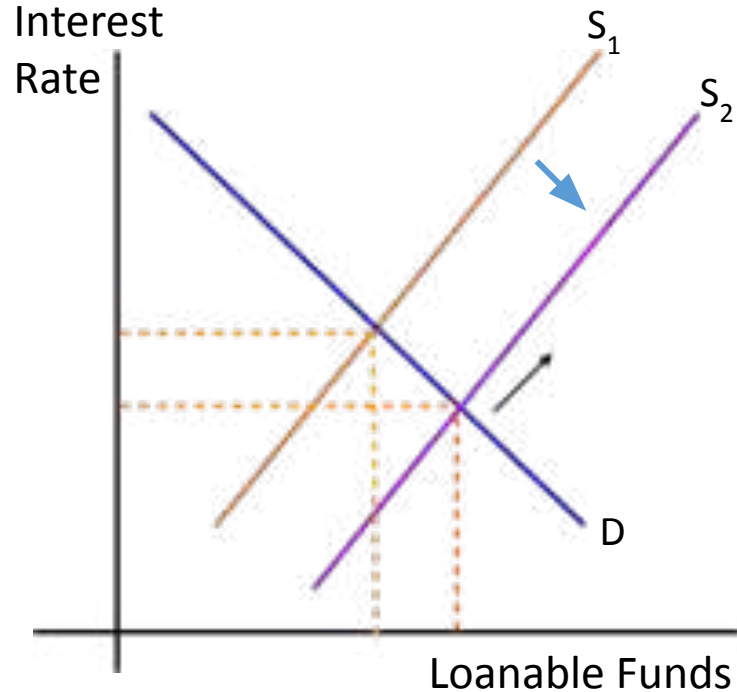
# Economic Theory: Theory of Consumer Choice



- Employers provide employer matching contributions.
- Contributing a certain amount of income to such retirement plans will lead to greater income to consume when old.
- More access to health services when old.
- Can be explained based on:
  - Substitution effect  
D to E
  - Income effect  
E to F



# Economic Theory: Aggregate Demand



- At macro level, this will increase the supply of loanable funds in the loanable funds market which will cause interest rates to fall down and hence as a result increases investment.
- The Increase in investment will increase the aggregatedemand at any given price level (right shift in AD curve) increasing the output.



## Solution 2: Company should invest in new technologies that aids productivity

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- **Introduction of Internet of Medical Things (IoMT)**

Collection of medical devices and applications communicating with health care information technology system via online computer networks.

The overall IoMT market is expected to grow from \$41 billion in 2017 to \$158 billion by 2022 (Deloitte survey).

The scope includes In-home IoMT, On-Body IoMT, Community IoMT and In-Hospital IoMT.

Government can subsidize such new innovations and create **incentive** for the producers.

## Solution 2: Telehealth services as an alternative

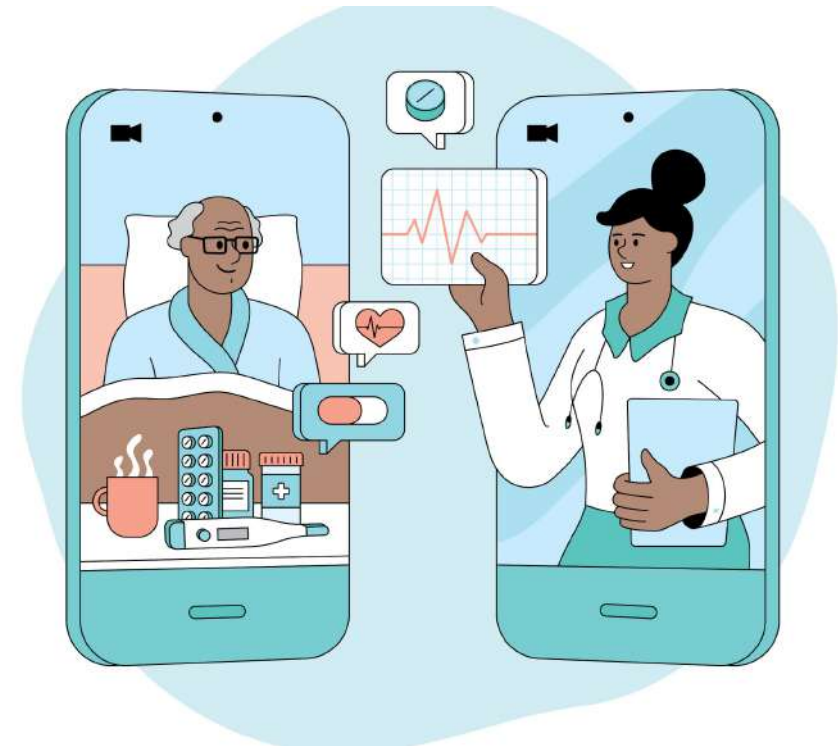
- **Telehealth services as an alternative**

Connecting with your health care provider online is a great way to get the health care you need from the comfort and safety of your own home.

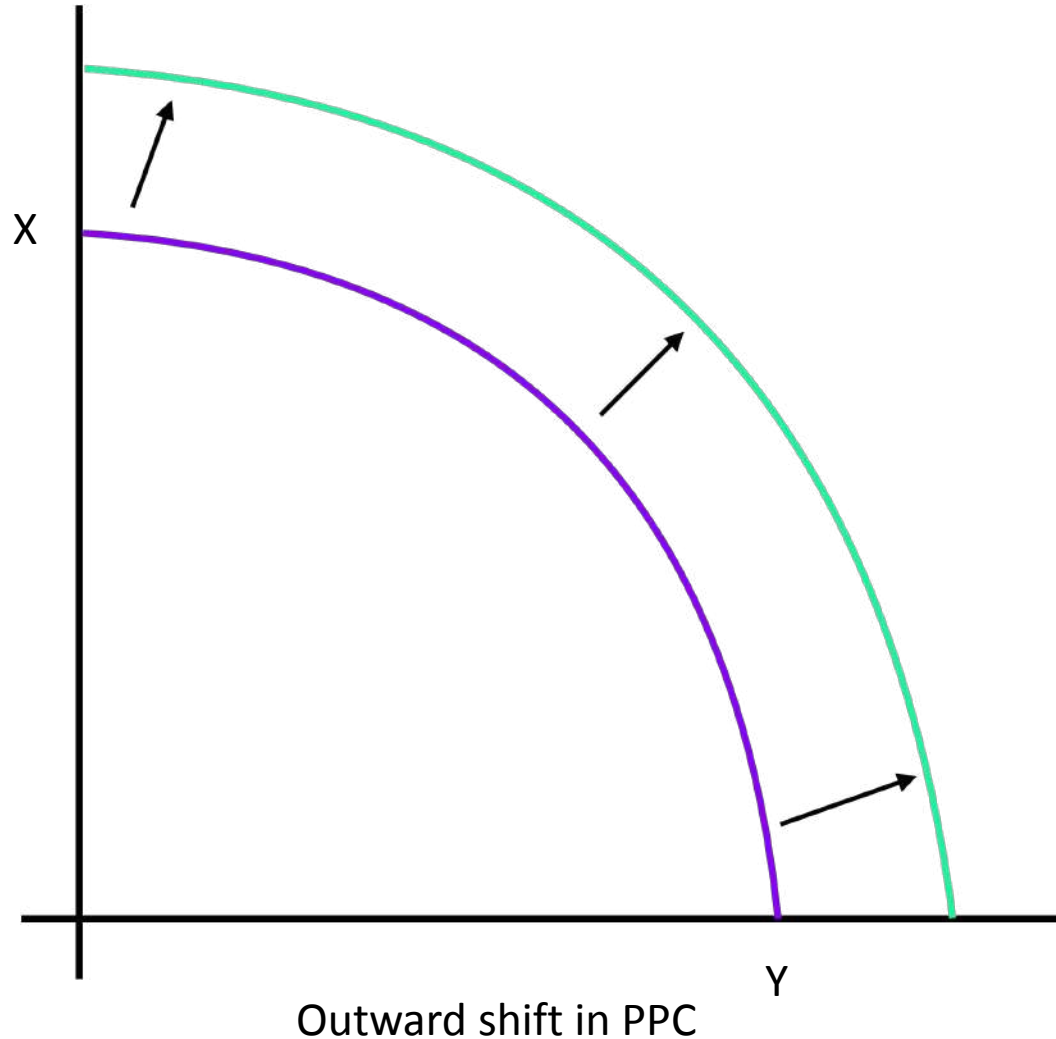
The global telehealth market size was valued at **USD 83.5 billion** in 2022 and is projected to expand at a compound annual growth rate (CAGR) of 24.0% from 2023 to 2030.

- **Frictionless financial transaction ecosystem**

Spend less on less on administrative spending and more on delivery of care. Here companies can build a frictionless financial transaction ecosystem that cuts administrative costs of health care

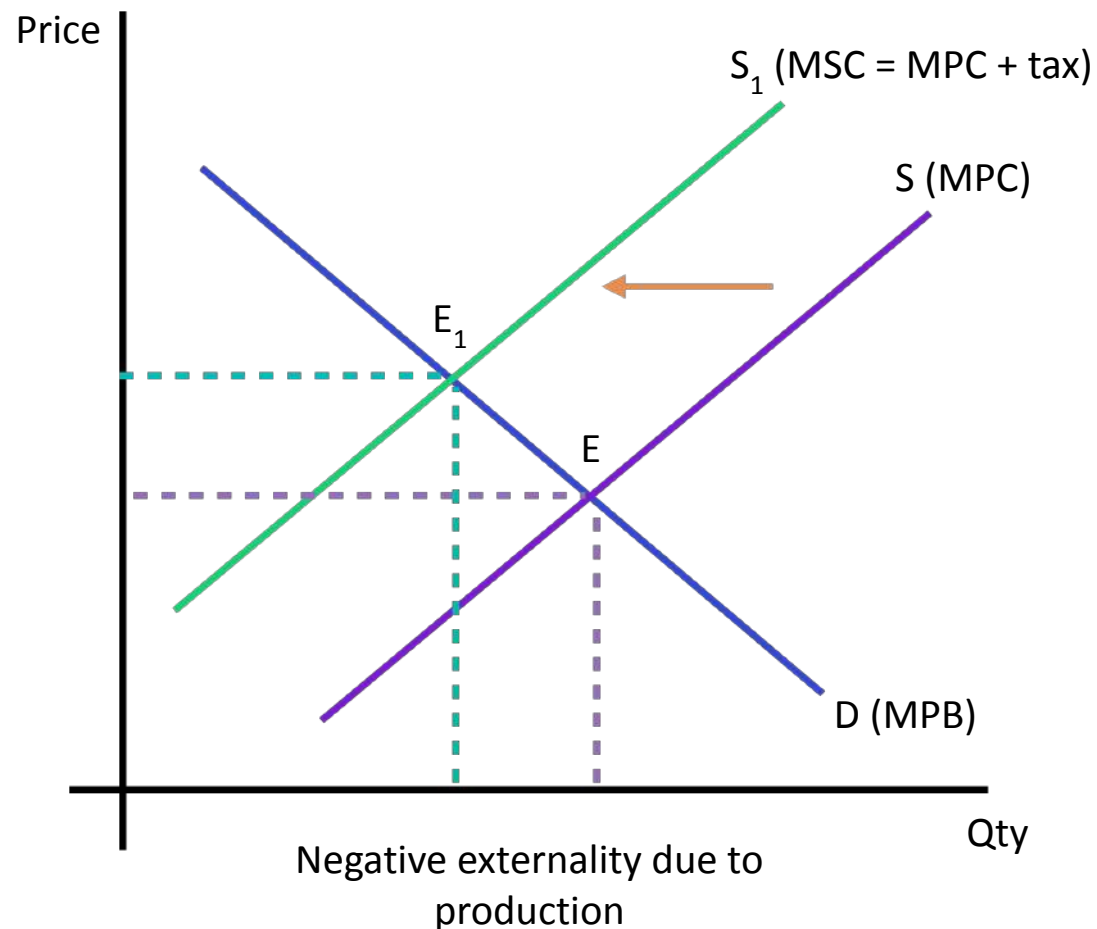


## Economic Theory: PPC Shift



- Technological investment boosts the productivity of healthcare delivery systems.
- New technologies installed the delivery systems are now more efficient and requires less human capital.

## Solution 3: Tax negative externalities that expose elderly population to disease and use the proceeds to fund and strengthen health care



- Negative externality exists when the services have additional cost to the third party.
- Air pollution can aggravate heart disease and stroke, lung diseases such as chronic obstructive pulmonary disease and asthma, and diabetes.
- Industry that produces pollution that expose risk of diseases to the elderly population should be taxed. (Internalizing the externality)
- The tax collected can be utilized by Government to fund and strengthen health care

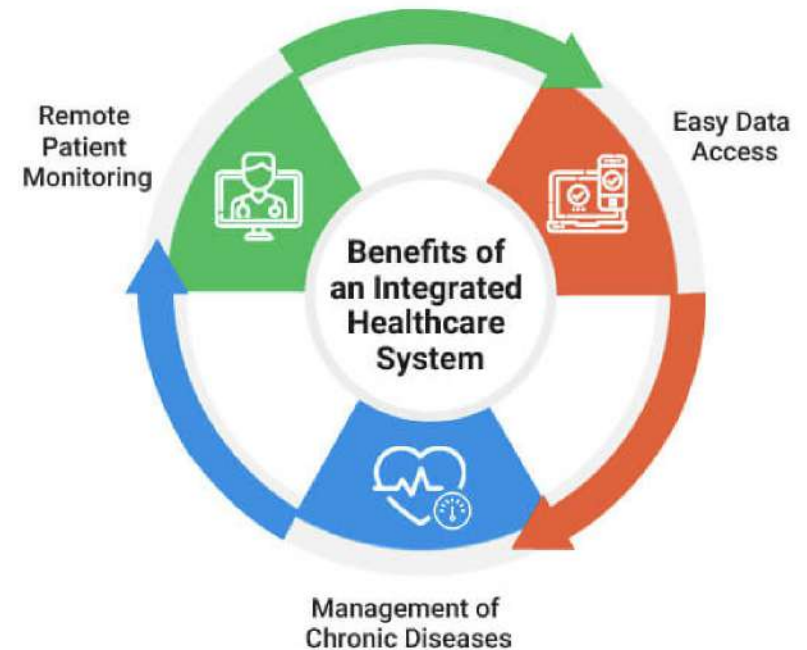
## Solution 3: Changing Traditional System to Integrated Health care

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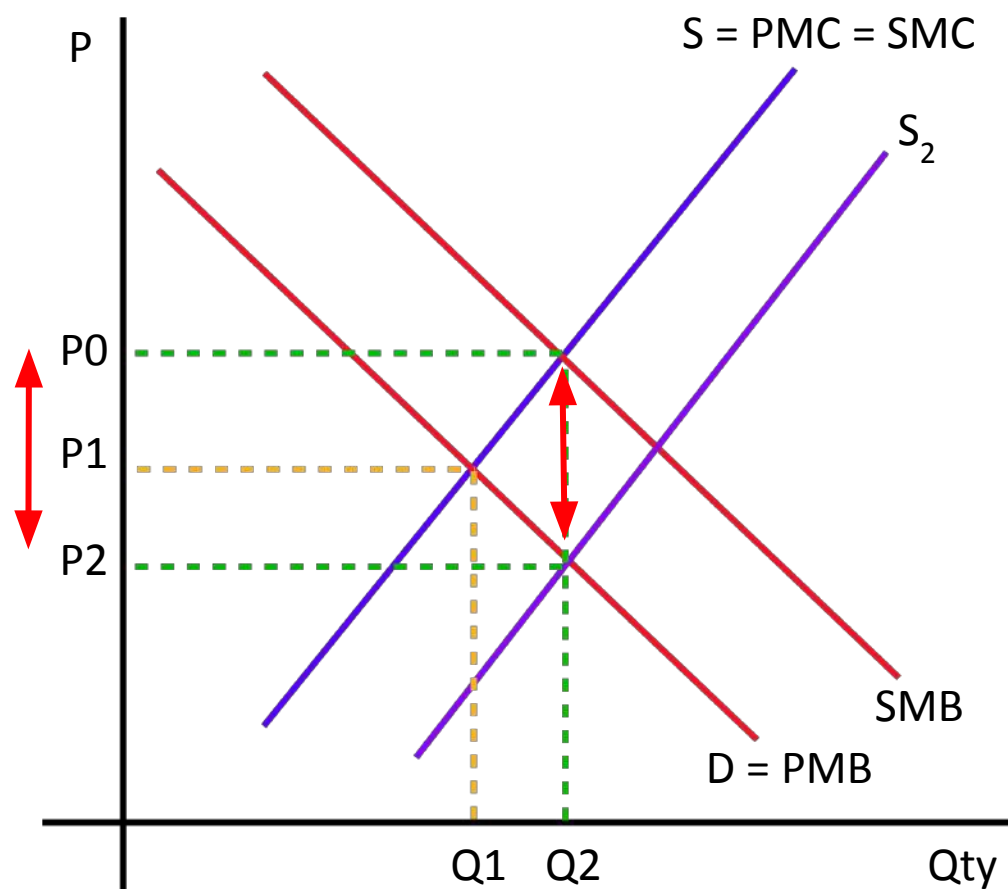
- Integrated approach focused on building and maintaining older people's physical and mental capacity.
- Assessment of the older person's goals and their capacity and their physical and social environments.
- This assessment enables health and social care professionals together with the older person and their caregivers to develop a care plan.

### It leads to:

- Your physical and mental health needs being addressed,
- Better collaboration between your health providers, and
- Less stress navigating the complicated health care system.



# Economy Theory: Externality



- A positive externality exists if a good or service has benefit to the third party
- Medical Education creates a positive externality:
  - Increases health awareness of individual
  - Sanitation and Awareness increases in society
- Subsidy =  $P0 - P2$
- The supply curve shifts to  $S_2$  and price falls from  $P1$  to  $P2$
- People will consume more; Quantity increases from  $Q1$  to  $Q2$
- The output ( $Q2$ ) is social efficient: because here Social marginal cost (SMC) = Social marginal benefit (SMB)

# Conclusion:

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- **Solution 1:** When individuals (employees) participate in employee matching contribution, it reduces government pressure to fund public health care services to aging population

## **Economic Theory: Theory of Consumer Choice**

- **Solution 2:** Company should invest in new technologies that aids productivity

## **Economic Theory: Production Possibility Curve**

- **Solution 3:** Tax negative externalities that expose elderly population to disease and use the proceeds to fund and strengthen health care

## **Economic Theory: Internalizing the externality**

## **Limitations of suggested solutions:**

- The protocols and security standards for these types of integrations change constantly which causes problem of compatibility.
- Standarization is hard to achieve in Integrated health care system with differences in system and format for storing data.

## **References:**

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