# Unit 1.1: Competitive Markets

## Determinants of Demand

#### Income level

* Singapore median real household income grew by 4.3% in 2019 from $2,792 to $2,925

#### Complements

* Cereal and Milk

#### Substitutes

* Coke and Pepsi

#### Derived Demand

* Increase demand for cars would increase derived demand for steel

#### Taste and Preferences

* Increase: Harvard study revealed that moderate consumption of coffee had health benefits such as reduced risk of cardiovascular disease.
* Decrease: Fall in demand for plastic straws as a result of environmental movement encourage usage of metal straws

#### Population size

* Decrease: Population size decrease by 0.3% in 2020 in Singapore
* Increase: Population size expected to increase by 2.5 billion by 2050, demand for food to increase by 59-98%

#### Population Demographics

* Population Demographics: Elderly set to make up 50% of Singaporean population by 2050, leading to an increase in demand for healthcare products

#### Price Mechanism (Signalling and Incentive Functions):

* Reallocation of resources from strawberry farming to blackberry farming in Mexico in 2015

## Determinants of Supply

#### Cost of production

* 2018 Imposition of tariffs on steel imports from China increases cost of production for cars in the US

#### Joint Supply

* Beef and Leather

#### Competitive Supply

* Corn and Maize grow on the same limited land

#### Taxes

* Singapore 66% tax on cigarettes
* In 2017, Singapore’s fuel tax for 92 and 95 Octane fuel is at 42 cents per litre

#### Subsidies

* Singapore launched a new 30 million grant in 2020 to increase production of local fish, eggs and vegetables

#### Supply Shocks

* 2019 Drought in Australia cause supply of wheat to fall by 18%

# Unit 1.2: Elasticities

### PED

#### More than 1

* Manufactured goods with many substitutes like Coke/Pepsi or Asus/Dell Computers

#### Less than 1

* Necessities like staple food bread/rice or Niche market for luxury goods like Ferrari

### YED

#### More than 1

* Luxury goods like exotic holidays and luxury cars

#### Between 0 and 1

* Necessities like staple food: bread/rice

#### Less than 0

* Inferior goods like china imitation phones Goophone and Bluboo.

### XED

#### More than 1(Substitute)

* Pepsi and Coke price war in 2015. Coke’s new line of Coke Zero products allowed it to differentiate itself from Pepsi.

#### Approximately 0

* Fighter Jets and Wedding Rings

#### Less than 0 (Complement)

* Helmets and Motorcycles

### PES

#### More than 1

* Manufactured goods like Coke with short production time

#### Less than 1

* Supply of dairy milk is price inelastic since long time is needed to nurture cows. Closure of Restaurants due to COVID causes a fall in quantity demanded for milk and a fall in price of milk. Quantity supplied doesn’t change much resulting in an overproduction.

# Unit 1.3: Government Intervention

#### Indirect Taxes

* Singapore 66% tax on cigarettes
* Alcohol: Singapore has a tax of $88/L on alcohol

#### Subsidies

* Singapore launched a new 30 million grant in 2020 to increase local production of local fish, eggs and vegetables
* Singapore Workfare Income Supplement (WIS) Scheme subsidizes training courses

#### Price Floor

* Thai Rice price floor at 60% above market cap in 2011
  + Opportunity cost: Thailand has lost over $10 bn in just 16 months to finance the rice support scheme
* California increase minimum wage to $12/hr in 2019

#### Price Ceiling

* Catalonia rent control 10-20% above official reference index for properties less than 150 square meters
* Through its passage of the Fair Prices Act in 2014, the Venezuelan government aimed to tame shortages by banning profit margins over 30 percent and tightening price ceilings on basic goods. The aforementioned law has only aggravated Venezuela's shortage crisis and has put the country on the road to famine.

# Unit 1.4: Market Failure

## Common Access Resource

* Overfishing of the bluefin tuna in the Pacific Ocean has led to the decline in their population

#### Legislation

* Alaska region for National Oceanic and Atmospheric Administration (NOAA) ensures sustainable fishing in Alaska through a quota and permit system

#### Extension of property rights

* Hualapai Reservation in the Grand Canyon area in the USA

## Public Goods

* Lampposts (public infrastructure)
* National defense (service) has a high opportunity cost at with a S$15 billion military budget in Singapore

## PEP

* Training of workers
  + Third party spillover: More skilled personnel can be more productive and contribute more to society

#### Subsidies

* Singapore Workfare Income Supplement Scheme (WISS) subsidies 95% of course fees for employers who wish to send their low wage workers for training

#### Legislation

* .

#### Direct Provision

* Continuing education and training centers (CET) have been set up to train workers in Singapore

## PEC

* Vaccination
  + Third party spillover: unvaccinated people benefit since they are less likely to contract the disease.
* Education
  + Third party spillover: In the US, states with higher levels of educational attainment have lower crime rate than the national average. Uneducated people benefit from safer environment

#### Subsidies

* Hong Kong Childhood Influenza Vaccination Subsidy Scheme (CIVSS) where all children are entitled to HK$160 subsidy per dose of influenza vaccination
* Primary education is free in Singapore

#### Legislation

* Vaccination against polio is compulsory for all Singaporean newborns
* Basic primary education is compulsory in Singapore under the Compulsory Education Act. All Singaporean children are to complete 6 years of primary education

#### Direct Provision

* Singapore’s national childhood immunization scheme provides free vaccination

#### Education

* Singapore Health Promotion Board 2017 “Shoo, Flu!” vaccine campaign

## NEP

* Carbon emissions in consuming fossil fuels
  + Third party: rest of society suffer from air pollution

#### Taxes

* Singapore Carbon Tax of $5/ton on greenhouse gas emissions

#### Legislation

* China’s National Plan on air pollution which bans the building of new power plants near cities

#### Tradeable Permits

* EU Emissions Trading System

#### Alternatives

* China allocate $1.5 billion yuan or $214 million USD for solar projects in 2020

## NEC

* Cigarettes
  + Third party: Second-hand smoke causes numerous health problems
* Alcohol
  + Third party: Society. Alcohol consumption is often connected to irrational behaviors which lead to increased crime rate, drunk driving.

#### Taxes

* Mexico’s 10% tax on sugary drinks in 2014
* Singapore 66% tax on cigarettes

#### Legislation

* Singapore legal age for alcohol consumption is 18
* Singapore legal age for smoking is 20 in 2020 and will be raised to 21 in 2021

#### Education

* Singapore’s “I Quit” campaign allows ex-smokers to share about the harmful effects of smoking
* Let’s fight Diabetes campaign in Singapore discourage consumption of sugary drinks

# Unit 2.2: Aggregate Demand/Supply

## Determinants of Aggregate Demand

#### Consumer Spending

* Increase: China’s real consumption spending per person has grown 8% per year
* Decrease: US consumer spending shrank 33% in Q2 of 2020

#### Investment

* Increase: Singapore attracted $15.2b of investments in 2019, 39% more than 2018
* Decrease: Election of the unpredictable and radical Donald Trump caused a plunge in FDI in 2016.

#### Government Expenditure

* Increase: In 2008, US spent large amounts on infrastructure, including $30bn for building highways, $31bn to modernize federal buildings and other public infrastructure; $10bn to improve public transit and rail infrastructure
* Decrease: Donald Trump’s 2019 budget proposal includes a 40% cut in non-military discretionary spending including healthcare

#### Net exports

* Increase: In 2017, Singapore experienced rising demand for semiconductors, a large component of Singapore’s manufacturing sector which accounts for 20% of the GDP.
* Decrease: In July 2019, Singapore non-oil domestic exports (Nodx) fell 11.2%.

## Determinants of Aggregate Supply

#### Cost of Inputs

* Increase: Cost of Steel in US increase due to tariffs placed
* Decrease: US price of crude oil drop below 0 in 2020

#### Supply shocks

* Natural disasters: Drought in Australia 2019 resulted in supply shock in agricultural sector, expected to cut GDP by 0.5 to 0.75%

# Unit 2.3: Macroeconomic Objectives

## Economic Growth

#### Potential Growth

* Supply-side policies

#### Actual Growth

* Expansionary Fiscal/Monetary Policies

## Unemployment

### Structural Unemployment

#### Supply reasons

* Automation: Singapore’s advanced manufacturing sector prolific usage of industrial robots that displaces workers who are not trained in handling such machinery
* Firms relocate: Electronics has recently relocated from Singapore to China and India where there are lower labor costs

#### Demand reasons

* Change in Taste & Preferences: Decline of US Car industry to Japan
* Declining domestic import-competing sectors: US imports cheap steel from China leading to a decline in domestic steel industry

### Cyclical Unemployment

#### Lack of Aggregate demand

* US unemployment rate peak at 14% in 2020 due to COVID-19
* Unemployment in US rose to 10% in 2008 following the Great Financial Crisis

### Consequences

#### Social Problems

* In 2017, a study by the Institute of Policy Studies in Singapore found that Bukit Merah registered highest rate of unemployment, and this is correlated with highest rate of petty crime in the nation

#### Opportunity Costs

* In 2017, US paid over $25 billion in unemployment benefits

## Inflation

### Consequences

#### Hyperinflation

* Zimbabwe experienced hyperinflation of 79.6 billion % diverting investments to other more stable countries

#### Income inequality

* Rich with assets such as Donald Trump with multi-billion real-estate empire see increase in value of assets, while value of cash (that the poor have) falls

#### Balance of Payments

* In 2010, India experienced fall in export revenue due to 8.62% inflation

### Demand-pull inflation

#### Monetarist demand-pull Inflation

* 2003 US increase money supply, increased inflation by 3.3%

#### Real Demand-pull Inflation

* In 2008, US spent large amounts on infrastructure, including $30bn for building highways, $31bn to modernize federal buildings and other public infrastructure; $10bn to improve public transit and rail infrastructure

### Cost-push Inflation

#### Wage-cost-push inflation

* 2019 California minimum wage to $12/hr

#### Import-price-push inflation

* Increase in import prices: Singapore 2018 faced rising inflation due to rising oil prices
* Depreciation of currency: Turkey 25% imported inflation due to depreciation in Lira

#### Profit-push inflation

* Luxottica has been accused multiple times since 2014 of jacking up the price of spectacles, as the owner and designer of over 80% of eyewear brands

### Deflation

* During the 2008 Global Financial Crisis, the US inflation rate dipped below 0%

### Consequences

#### Deflationary Spiral

* Japan experienced persistent deflation in the past 10 years due to an aging population and low aggregate demand.

#### Unemployment

* Unemployment in the US rose to 10% in 2008 following the Global Financial Crisis

## Income inequality

### Causes of inequality

#### Difference in Ability

* Singapore abides by highly meritocratic principles, providing significantly more education and growth opportunities to the cognitive elite, such as world class universities, while the less academically able are forced to enter the Institute of Technical Education (ITE) and receive vocational and technical training

#### Difference in Wealth

* There is a growing tuition industry in Singapore, where rich families send their children for enrichment classes and extra-curricular lessons, further improving their ability to command wages

### Causes of Poverty

#### Absolute

* Farmers in Ethiopia specializing in coffee production; with lack of regular rainfall, frequent droughts, and poor infrastructure, they rely on low and fluctuating income which keeps them trapped in poverty

#### Relative

* Hong Kong has lack of subsidies and transfer payments, so it is difficult for many to face the rising cost of living and afford anything beyond bare necessities

### Measurement

#### Lorenz Curve and GINI Coefficient

* 2 countries with different gini coefficient

# Unit 2.4: Fiscal Policy

## Automatic Stabilizers

#### Transfer Payments

* Unemployment benefits in the US

#### Progressive taxes

* Singapore Progressive Wage Model
* Singapore added new income bracket in 2017, the marginal tax rate will be raised to 22%, for those earning $320,000 & above per annum.

## Expansionary fiscal policy

#### Increase in government spending

* In 2008, US spent large amounts on infrastructure, including $30bn for building highways, $31bn to modernize federal buildings and other public infrastructure; $10bn to improve public transit and rail

#### Reduction in income taxes

* In 2017, the US Tax Cuts and Jobs Act trimmed individual tax rates overall, lowering the top rate to 37% from 39.6%.

#### Reduction in corporate taxes

* As part of the Tax Cuts and Jobs Act of 2017 in the US, the corporate tax rate was lowered from 35% to 21%

## Contractionary fiscal policy

#### Reduction in government spending

* Donald Trump’s 2019 budget proposal includes a 40% cut from non-military discretionary spending including healthcare

#### Increase in income tax

* In 2017, Singapore raised progressive tax for the highest bracket of annual income above $320,000 from 20% to 22%

# Unit 2.5: Monetary Policy

#### Expansionary monetary policy

* In 2020, US central bank cut interest rates to 0%

#### Contractionary monetary policy

* In 2016, Nigeria’s Central Bank raised interest rate to 12% and increased reserve ratio to 22.5%
* US 2018 monetary policy raised 4 times

# Unit 2.6: Supply-side Policies

## Interventionist

#### Investment in Research and Development

* Research grants provided by NRF Singapore

#### Investment in Human Capital

* Singapore SkillsFuture scheme provides $500 credits to workers to learn new skills

#### Provision of Infrastructure

* Construction of the Downtown line links Northwest Singapore to the Central Business District, reducing travel times

#### Directly Supporting Businesses

* Singapore Smart Nation Initiative helps financial institutions expand into FinTech by providing consults and advise on legal, regulation and business-related matters

## Market-oriented

### Labor Market Reforms

#### Reduction of unemployment benefits

* In 2013, North Carolina cut maximum claimable duration from 70 weeks to 19 weeks, unemployment fell from 8.5% to 7%

#### Reduction of minimum wage

* Kentucky US reduce minimum wage from $10.10 to $7.25

### Policies to increase competition

#### Privatization

* Privatization of Singapore Telecommunications also known as Singtel in 1992

#### Deregulation

* Deregulation of energy sector in Singapore

#### Trade liberalization

* China joined the Information Technology Agreement (ITA) in 2015, eliminating IT import tariffs that led to rise in IT exports to become the largest exporter in the world

### Incentive-related policies

#### Lowering personal income tax

* In 2017, the US Tax Cuts and Jobs Act trimmed individual tax rates overall, lowering the top rate to 37% from 39.6%.

#### Lowering corporate tax

* As part of the Tax Cuts and Jobs Act of 2017 in the US, the corporate tax rate was lowered from 35% to 21%