**Essay Question 3**

**China's rapid market reforms since 1978 had created a strong middle class and a burgeoning industrial sector. However, many lower income earners, mired in a polluted environment especially in the mining and industrial areas, are left behind economically.**

**(a) Explain how income inequality and pollution are causes of market failure. [10]**

Introduction

•Definition of market failures

Application: Identify the sources of market failure base on the above statement: the presence of income inequality and negative externalities (due to pollution generated from industrial production).

Main Body

**Explain why pollution (negative externality) will give rise to market failure**

* Define negative externalities
* Costs borne by third parties who are not directly involved in the production or consumption of a good.

Such costs are not taken into account in the price mechanism.

* In this case, external costs are generated as a result of pollution from industrial production
* In a free market producers pursuing their self interest of profit maximisation take into account only their own private costs and benefit. **Assume that the production concerned is of steel.** The private cost (PMC) will then comprise the cost of labour, raw material and capital equipment for producing steel. On the other hand, PMB to the firms is the revenue they receive from the sale of each unit of steel. In aim of profit maximization, the firms will produce at the level Qe where PMB = PMC.
* However, in the course of steel manufacturing, it pollutes the environment -> a third party or external cost has occurred. The deterioration of the environment and the negative health effects on people (e.g. respiratory problems, asthma attacks) not directly involved in the production of the steel is not taken into account by the price mechanism. It is in this sense that these spill over effects are external to the price mechanism.
* The total or true cost of production will thus be underestimated. It explains why SMC > PMC by the\* amount EMC (denoted by vertical distance FG> at every level of steel produced.
* As a result, steel is deemed to be over-produced from society's point of view. The level of steel produced that maximizes social welfare is Qse, where SMB .= SMC. It is here that what society values of the last unit of steel produced = what it costs to produce that unit of steel.
* Due to over-production of steel (and hence over-allocation of resources) – deadweight loss will occur as the society will pay for the cost of higher level of contamination of resources which will undermine the growth in the future.

As seen from the diagram, the original production equilibrium for the market of mining or resource production is at Qm without the consideration of negative externalities. The presence of negative externality will give rise to external cost that contributes to the divergence of MPC and MSC as the MSC constituted by MEC and MPC. As a result, the market equilibrium level of production at Qm will experience DWL (represented by the shaded portion) and there is over production since the production level at Qm is above the social equilibrium level at Qs where MSC=MPC+ MEC = MSB. Consequently, the industry experiences market failures as there is maximization of social benefit gain due to presence of welfare loss.

**Explain why income inequality is an example of market failure**

Market failure is not just caused by economic inefficiency. It can also be caused by income inequality. In a market / capitalist economy, the ability of individuals to consumer goods depends upon the income and wealth of the household.

Hence, a key problem with markets in the context of inequality is that the willingness and ability to pay differs from need. The market system will not respond to the needs and wants of those with insufficient economic votes to have any impact on market demand because what matters in a market-based system is effective demand for goods and services. Price mechanism helps to distribute the limited amount of goods produced to those who want them most which is reflected by their willingness to pay and backed by purchasing power.

Consequently, goods and services do not necessarily flow to those who need them the most, resulting in unsatisfactory (note! Not inefficient) allocation of resources. Need is defined as the minimum which is necessary for a person to survive as a human being, but of course what is minimum is debatable, one that requires value judgment.

Referring to the stimulus provided, the low-income earners are unable to afford basic necessities such as food, shelter or clothing. If healthcare is only provided by the private sector, the poor may not be able to afford medical care / treatment. Thus, it is a form of market failure as the maximized net social benefit gin is unevenly distributed where the lower income earners will not receive their fair shares of the distribution and thus, this is the absence of welfare maximization, a form of marker failures.

**Essay Question 3**

**China's rapid market reforms since 1978 had created a strong middle class and a burgeoning industrial sector. However, many lower income earners, mired in a polluted environment especially in the mining and industrial areas, are left behind economically.**

**(b) Discuss appropriate measures, if any, that the Chinese government could adopt to solve these problems. [15]**

Introduction

State and explain possible policies that the Chinese government can use to eliminate pollution

(negative externality):

Main Body

**Short term policies**

Taxes:

Explain how taxes address the market failure (with the use of diagram).

Imposition of taxes will lead to the rise in cost of production which will lead to the reduction in supply from SMC to SMC’ (PMC+tax) that will raise the price of goods from Po to P1. This will reduce the quantity demanded from Qm to Qs where social optimization of resource allocation is attained as there is DWL and maximization of net social benefit gain is attained as seen from the diagram.

Benefits:

* Many economists favour the tax solution to correct externalities because it still allows the market to operate. It also forces firms to take on board the full social costs of their actions.
* It is adjustable, depending on the magnitude of the EMC.
* By taxing firms for polluting, producers may be encouraged to find cleaner ways of producing output.
* The tax thus acts as an incentive over the long run to reduce pollution: the more a firm can reduce pollution, the more costs it can save.

Limitations / disadvantages:

* The main problem of using this method is that there is imperfect knowledge. The damage from pollution is extremely difficult to assess. It is also difficult to apportion blame. For example, the damage to lakes in China has been a major concern. However, just how serious that damage is and what are its monetary costs, are difficult to assess.
* An overestimation or underestimation of the size of the external cost would mean either a less than or more than social optimum level of output respectively.
* Other problems include the need for manpower to assess the tax. This imposes an additional burden on the government.

**Licensing**

To control the total amount of pollutant emissions, authorities will devise a license system for emitters of wastewater containing toxic or radioactive materials. Without the license, enterprises will be banned from discharging pollutants into water.

Evaluation:

* For smaller firms which are not able to afford the license, they will have to stop production completely. This may lead to retrenchment of the workers in that factory which may lead to additional burden for the government to provide financial aid to these workers. With the firm being out of production, it may also deprive the people in the area of the supply of the good.

**Rules and regulation: Penalty/Fines**

The government can impose severe penalty such as fines on factories which release toxic chemical wastes into river system. In a way, this will act as deterrence to the producers in contributing to water pollution in China.

Evaluation:

* Effective because it is a blunt weapon to discourage water pollution. However, there is no incentive to look for more environmentally friendly ways to produce the goods. - -
* The government has to employ supervisors to monitor or closely watch pollution emissions from industrial, farming and other sectors.
* This entails administrative costs. The government must weigh the costs and benefits to assess the effectiveness and desirability of this measure. If the benefits derived from successful implementation of measure i.e., cleaner rivers are greater than the costs incurred in channeling resources towards employing supervisors and conducting monitoring checks, then this measure should be adopted by the government.

Long term policies

* Using tax revenue earned from green taxes to subsidies / spur research in green tech (e.g. cleaner methods of production, using the same sort of fuel; or usage of dean energy such as bio fuels).

**State and explain possible policies that the Chinese government can use to reduce (not close) income inequality**

**Short term policies**

**Taxes:**

Describe and explain what is the tax structure or system China could use (assuming there wasn't one already in place)°-> progressive income tax (increase or put in place such a tax system).

Evaluation:

* May create disincentives to work with excessive progressivity.

**Income transfers:**

Income transfers are used by governments as a means of redistributing income or transferring income form one group in society to another group, for example from people in work to those who are retired or from relatively rich people to those who are in poverty. The justification for these transfers is to achieve fairness or equity in an economy. These transfers of income may also be fn the form of a cash benefit paid by the government to someone with a low income. Income transfers may also be used -to cover the unexpected loss of income when a person is not working due to illness or unemployment. These cash transfers include social security benefits, such as income support, a job seeker's allowance, or a state pension.

**Subsidies:**

Describe and explain what subsidies China could use: health and education subsidies, or subsidies on daily necessities such as food grains, fuel and utilities.

Evaluation:

* Not always claimed by those for whom they are designed (possible solution: means-tested, similar to the case in Singapore -> the proportion of fees subsidies depends on income levels)
* Expensive to administer
* Low take up rates due to bureaucracy and social stigma

**Job/Labour schemes and assistance:**

Minimum Wage Scheme: Describe and explain how such a scheme might help, with the use of appropriate DD-SS analysis.

Evaluation:

* Increase in unemployment due to higher cost of labour. Those who benefit are those who/are successfully retained employment.
* Black market -> retrenched workers willing to work for even lower wages, worse off than before the wage floor was implemented.

**Long term policies**

Free / heavily subsidized compulsory education (from pri to perhaps sec)

Undergrad Scholarships

Job training / skills upgrade

Conclusion

Where market failure exists, a government may choose to intervene from a variety of methods, each relevant for specific purposes and with different advantages, so as to ensure that resources are optimally allocated, and society welfare is maximized.