The essential function of the price mechanism is the smooth clearance of the available supply in a market. An economic good is a good whose supply is scarce in relation to demand.—Scarcity implying simply that the entire want of the society is not satisfied by the available supply. In view of the scarcity of the entire want of the society is scarce in relation to demand,—not satisfied by the available supply, buyers press against one another, and those who fail to offer the ruling price in the market go unsatisfied. Price thus measures the strength of excluded demand,—being determined by the degree of scarcity of supply relatively to the market demand. In a free price system, excess demand or excess supply are ruled out. Excess demand is a signal for a price rise, and excess supply is a signal for a price fall. Competition among buyers and sellers brings it about that a price is settled in the market at which demand is equated to the supply. The available supply is taken off the market by those buyers who are relatively stronger and are prepared to offer the ruling price; those who cannot afford to pay the ruling price go unsatisfied. The strength of the buyers as expressed in the market depends not merely upon the degree of willingness to have a good, but also upon the capacity to pay for it.

The price at which demand is equated to the supply is called by economists the normal price. In a free market, demand and supply forces can be relied on to secure the establishment of a normal price and to ensure the smooth disposal of a commodity. Each has the right to bid his own price for the commodity that he wants, and if the price offered satisfies the seller, the deal is finished with out more ado. On the other hand, however intense the need that he may feel for a commodity, it remains unsatisfied unless it is backed by the power to pay a price which will satisfy the seller. The free price system is thus a delicate mechanism through which are avoided all kinds of manoeuvrings that would otherwise appear in society as a result of the pressure of demand upon scarce supply.

Yet there is just one limitation of the free price system, however satisfactory it might be in respect of the smooth delivery of goods. The system caters to the wants of stronger members of the society at the expense of its weaker members. And since this strength expresses itself, partly at any rate, in terms of the capacity to pay, the distribution of a good, as it takes place through the market mechanism, turns out to be in accordance with the relative 'income' of the citizens rather than in accordance with their relative needs. And in a society which is characterised by large inequalities of income, this limitation proves a serious limitation.

This is the sanction for price control. If the normal price is found too high for the poorer section of the community and if it is felt that they should also be allowed to have a share of the available supply of a commodity, the State comes forward and fixes a legal maximum for the market price. A price below 'normal' is fixed and sellers are coerced into accepting what is deemed to be the maximum allowable, consistently with the demand coming from the relatively poor. A price fixed below normal does bring the controlled good within the reach of the hitherto unsatisfied buyers, although in doing so, it deprives the stronger buyers of a share that would, in the absence of control, belong to them. If the control is judiciously and effectively administered, it may under certain circumstances lead to a more desirable distribution of the available supply.

There is, however, one aspect of the matter which must not be lost sight of. The limitation of the free price system that we have mentioned—arises out of large inequalities of income. It is because of this inequality that the normal price fails to satisfy the general need of the society to the extent deemed desirable. Now, if this problem of inequality can be tackled directly, through taxes and subsidies, or through other measures of general income control, the case for price control surely disappears. If the income ratio between different groups in the society is brought down to the level that is considered desirable, the free price system surely comes into its own. In principle, indeed, this is a surer way of achieving the objective that we have in view. Whereas an overall income control relieves the State of the necessity of looking into individual markets, the principle of price control, since it relates to individual markets, requires a wider and a more extended supervision, its nature depending upon the character of the market and the number of commodities to be controlled.

What happens if the price of a commodity is fixed by the State at a level below what it would be under the free play of the forces of demand and supply? A state of 'excess demand' is created; sellers offer to sell a quantity which falls short of that which the buyers are willing to buy at the given price. The market thus experiences 'shortage' which is to be distinguished from 'scarcity' prospect. For, whereas 'scarcity' denotes merely that some demand is excluded because the buyers cannot afford to pay the ruling price, 'shortage' indicates that even those buyers who are willing to pay a price acceptable to the
The Theory Of Black Market Prices

A. K. Das Gupta

The essential function of the price mechanism is the smooth clearance of the available supply in a market. An economic good is a good whose supply is scarce in relation to demand,—'scarcity' implying simply that the entire want of the society is not satisfied by the available supply. In view of the scarcity of supply, buyers press against one another, and those who fail to offer the ruling price in the market go unsatisfied. Price thus measures the strength of excluded demand, -being determined by the degree of scarcity of supply relatively to the market demand. In a free price system, excess demand or excess supply are ruled out. Excess demand is a signal for a price rise, and excess supply a signal for a price fall. Competition among buyers and sellers brings it about that a price is settled in the market at which demand is equated to the supply. The available supply is taken off the market by those buyers who are relatively stronger and are prepared to offer the ruling price; those who cannot afford to pay the ruling price go unsatisfied. The strength of the buyers as expressed in the market depends not merely upon the degree of willingness to have a good, but also upon the capacity to pay for it.

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sellers may have to go unsatisfied. Scarcity is ubiquitous in the exchange economy; the fact that a price is to be paid at all is an indication that scarcity exists. Shortage, on the other hand, is the outcome of an artificial control which puts a brake on supply but at the same time releases a demand which otherwise would remain subdued.

How is this short supply distributed among the intending buyers? Does it go to those who come first, or to those who are physically stronger and can push others out of the market? Obviously any such processes would frustrate the object of price control. The technique of rationing is thus the essential corollary of a system of price control. The controlling authority undertakes to arrange a distribution of whatever supply is available at the legal price among the intending buyers according to their relative needs. This obviously means that, although people 'at the bottom of the scale' get a part of their demand satisfied, those at the upper end of the scale are asked to accept a ration smaller than what, with their stronger purchasing power, they could secure in a free market by bidding up prices. Here, therefore, are buyers eager to pay higher prices for an extra supply and sellers equally eager to switch on to the stronger market if only such a market can be created. Thus the emergence of the so-called 'black market' is the inevitable consequence of price control and rationing. Because there are buyers prepared to buy at higher prices more than their ration coupons allow, and because there are sellers to whom the commercial code rather than the law of the land is supreme, and who are therefore anxious to sell their good to the highest bidder, an area tends inevitably to develop over which transactions take place at prices higher than the legal maximum,—its extent depending upon the degree of supervision exercised by the state towards the enforcement of law.

How are black market prices determined? Do they tend to be lower than the normal price as it would be in a free market? What tends to be the output of a commodity that finds its way into black markets? Does it exceed, or fall short of the normal output? This is a new field of enquiry which has opened up in the wake of war and post-war price controls and rationing. For, since these controls have been introduced, black markets have been a common phenomenon almost everywhere.

Not enough has yet been done, it appears, by our economists to analyse the affairs of the black markets. We have had a lot of discussion concerning the difficulties arising from the heterogeneity of products within the same industry, differences in the costs of different firms, vagueness of the needs of consumers, etc. We have also been told about the possible failure of price control measures in view of the illegal transactions that 'shortages' would inevitably call forth. But the actual operations of the black markets, inspite of their wide prevalence, have been left practically alone. But not entirely. Apart from a few Journal articles to which the present writer could not have access, Kenneth E. Boulding's Economic Analysis contains an ingenious theory of black market prices, although even here, as the present paper purports to show, the matter has been presented in too simplistic a fashion and the essential character of the phenomenon has been lost sight of.

The following diagram is the basis of Boulding's analysis. D and S represent the normal demand and supply curves as they would be in the absence of control. PN would then be the normal price, and ON the amount bought and sold. If, now, OR is fixed by the State to be the maximum price at which buying and selling are legally allowed, the quantity supplied comes down to RT and the quantity demanded goes up to RV. To relieve the congestion of demand, the commodity is rationed. But since the available supply in the legal market is only RT, many willing buyers go unsatisfied, and an illegal market develops. What are the demand and supply conditions in this illegal market?

Here is Boulding's own story:
"We can postulate a 'black market supply curve', TSB lying to the left of the normal supply curve TS. As operations in the black market involve a certain risk above what would be necessary in a free market, suppliers are not to be found willing to supply as much at each price in the black market as would be done in the free market; in other words, because of the higher costs it now takes a higher price to call forth any given quantity than it did before. The higher the costs of black market operation, the steeper will TSB rise. We can similarly postulate a black market demand curve, TD. Even at the legal maximum price (OR) we may suppose that not all potential buyers are willing to buy in the black market, so that the quantity demanded in the black market at the price OR is not the total unsatisfied demand quantity, TV, but a smaller quantity TD. Then the black market price is $P_N$, and the quantity bought and sold in the black market is $TK$, being the total quantity in the legal and the black market combined, and $RT$ the quantity in the legal market. It is further argued that in case "there are no penalties of any kind, legal or moral, attached to purchases in the black market, the black market demand curve will be the same as the normal demand curve, $DP$, so that, with TSB as the black market supply curve, the black market price will be as high as $P_N$. On the other hand, if suppliers are unmolested and penalties are placed only on black market buyers, the black market price will be as low as $P_{TV}$.

K. Boulding derives the following conclusions from his analysis of the black market:

First, the black market price may be less than the normal price as it would be in a free market; $P_{TV}$, as the diagram shows, is less than $PN$. Secondly, the average price in the legal and the black market together is likely to be less than the normal price, so that "even if a black market develops as a result of price control the resulting average price is less than that which would have obtained in a perfectly free market." And thirdly, the more rigorous are the measures taken against the black market buyers the lower is the black market price, and the larger the penalties placed on sellers, the higher is the black market price,—the inference from this being that "other things being equal, it would be better to penalize the buyers rather than the sellers in the black market, the housewife rather than the grocer."

While the above analysis raises certain interesting issues, the manner in which the problem is handled leaves room for further reflection. In general, the extension of demand and supply curves, such as is done, to cover the black market area is not only logically untenable but is also misleading in its implications. To an examination of this we shall now turn.

In the first place, it is wrong to take the unobstructed black market demand curve to be just an extension of the original $D$—curve. It must be remembered that, according to hypothesis, the legal supply, $RT$, is sold at the controlled price, OR, and is thus open to buyers within the range $PV$ equally with the buyers belonging to the upper range. If, then, a part of the amount sold in the legal market is taken away by buyers lying below the range $RT$, the demand curve in the black market, in the absence of penalties, gets shifted above $DP$. The stronger buyers within the range $RT$, with part of their demand unsatisfied, assert themselves in the black market and offer a price which is higher than is shown in the original demand curve. Neglecting obstacles to demand, therefore, the point $T_1$ invariably lies vertically above the $D$—curve.

As regards the black market supply curve, if risks attend black market selling, this curve should lie above the $S$—curve over its whole length, the distance between the two curves depending upon the marginal risk-cost associated with increasing sales in the black market. If the marginal risk-cost remains constant; the two curves will be parallel. If, on the other hand, as is more likely, the sellers are afraid that extension of sales in the black market will involve wider publicity and increasing risk of detection, the distance between the two curves will grow wider as they move to the right. In any case, the initial point on the black market supply curve will be vertically above $T$. Further, the amount sold in the legal market will depend not only upon average cost, as is assumed in the diagram, but also upon the degree of restriction that is placed upon black market selling. $RT$ is certainly the maximum amount that can be sold at the controlled price, OR. Yet it may not be the actual amount released in the open market at that price, since the black markets would promise a higher return. To what extent output which could profitably be sold in the legal market would nevertheless disappear into the dark area will depend upon the rigour with which black market dealings are treated.

Thirdly,—and this is by far the most important point about the whole matter,—the so-called black market is a bundle of isolated transactions which, strictly speaking, do not form a market at all. The illegal character of the transactions naturally precludes the possibility that degree of inter-communication between buyers and sellers which makes for a perfect market with a uniform price. By its very nature, the black market, such as it is, is at best an imperfect institution in which individual buyers and sellers are, so to say, paired, and separate prices tend to evolve in respect of the same commodity,—the level in each case depending upon the relative strength of the parties. To talk of the black market price, determined at the point of intersection between the black market demand and supply curves, is thus illegitimate. Indeed the theory that is relevant here is rather that of imperfect market and discrimination, and the technique that is appropriate is that of marginal revenue and marginal
cost. The intersection between the black market demand and supply curves may point to a minimum price at which a parcel of product might be sold profitably, due account being taken of the risks of such sales; it does not indicate the average price at which the black market output is actually sold. Thus even if the black market supply curve cuts the black market demand curve at \( P_1 \) (as shown in the diagram), the amount bought and sold in the area will not be necessarily \( ON_1 \), nor will the average price be necessarily \( P_2N_1 \). Since some degree of discrimination will be possible, the average revenue curve will surely lie above \( TDB \).

What does all this lead to? How are our generalisations concerning black markets affected by these considerations?

In the first place, since the black market area is dominated by stronger buyers and since, in the absence of inter-communication, sellers, strengthened by the fact of shortage, are in a position to apply discrimination to their advantage, the average prices within the black market area (which, according to our hypothesis, exceeds the marginal demand price) tends to be higher than the normal price as it would be in a free market. The reverse may happen only if very high penalties are placed upon black market buyers.

Secondly, the average price in the legal and the black markets taken together, depending, as it does, upon the level of controlled price, the level of black market prices and the area covered by illegal transactions relatively to the open market, may easily exceed the normal free market price. This tendency becomes all the more likely if control over black market dealings is slackened, for, in that case, a larger proportion of the aggregate output goes into the black market area. Thus an act of concession to black market sellers, while it may bring down black market prices as such, is altogether not certain in its effect on average price in the combined area, when account is taken of its repercussion on the volume of output available for the 'open' area.

Thirdly, since, if the law is to be taken at all seriously, the objective of policy must be to stop black market dealings, or, at any rate, to reduce their area to the minimum, it is a matter of indifference whether buyers or sellers or both are chosen for punishment in respect of these dealings. For it is just a question of keeping the demand curve below the supply curve in the black market region. And this of course can be done either by pushing down the demand curve through penalties on buyers or by pushing up the supply curve through penalties on sellers. Either of these operations, if carried on successfully, would serve the purpose equally well. It is for the State to decide which would be more convenient and more effective from the administrative point of view.

Lastly,—given the black market supply curve, the higher the penalties placed on illegal buying the lower surely is the average of prices, but the smaller also is the output sold in the black market. If, then, consumers' surplus is taken to be the criterion of gain to consumers, then give them income in kind. But do not throw the baby out with the bath water by suspending the market or by fixing prices below the market equilibrium. That way lies frustration and much economic waste.**

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