

# ***REVEALED PREFERENCE HYPOTHESIS***



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# INTRODUCTION

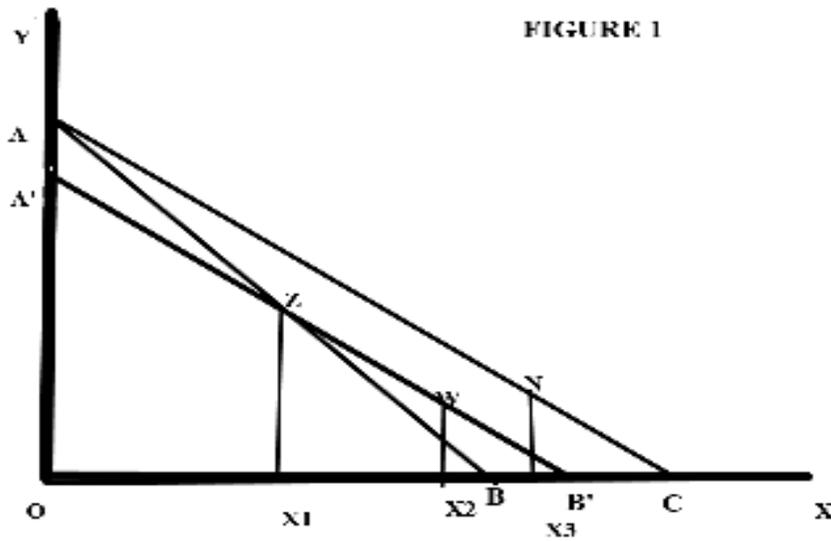
- ❖ *Introduced in 1938.*
- ❖ *By Samuelson.*
- ❖ *Considered a major breakthrough in the 'theory of demand'.*
- ❖ *Because of the possibility of establishment of 'law of demand' directly on the basis of revealed preference axiom without the use of ICs and all respective assumptions.*
- ❖ *With respect to ordering of consumer preferences, the RPH has an advantage over Hicks-Allen approach of establishing the existence and the convexity of the ICs (it although does not accept it axiomatically).*
- ❖ *However, ICs are redundant in the derivation of the demand curve.*

# ASSUMPTIONS

- ❖ *RATIONALITY: People prefer commodities that are more in quantity.*
- ❖ *CONSISTENCY: Consumers behave consistently ie. if he chooses bundle A in a situation where bundle B was also available then he will not choose bundle B in any manner where bundle A was also present .*
- ❖ *TRANSITIVITY: If  $A > B$  ;  $B > C$  then  $A > C$ .*
- ❖ *REVEALED PREFERENCE AXIOM: The consumer by choosing a collection of goods in any budget situation reveals his preference for that particular collection which in turn maximises his utility over the alternate bundles available under the same budget criteria.*

# DERIVATION OF THE DEMAND CURVE

- ❖ The consumer has a budget line  $AB$  in the diagram given below.
- ❖ Chooses the collection of goods denoted by  $pt.Z$  thereby revealing his preference for it.
- ❖ 'Compensating variation' of income explains, any reduction in income which enables the consumer to have just enough income so as to continue purchasing  $Z$ .

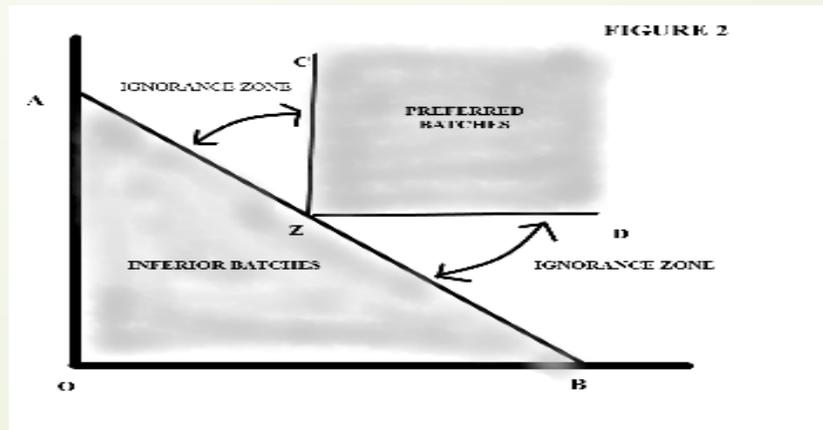


## DERIVATION OF THE DEMAND CURVE

- ❖ *Suppose that the price of X falls so that the new budget line is AC.*
- ❖ *Now, to show the compensated variation (reduction in income), there is a parallel shift of the new budget line towards left i.e. A'B' which passes through Z.*
- ❖ *Since, Z is still available at A'B', therefore he will not choose any collection to the left of Z i.e. A'Z because that would manifest his inconsistency as the consumer already showed his revealed preference for Z (at original budget line AB) which is now impossible towards segment A'Z on A'B'.*
- ❖ *Therefore, he will either continue to buy Z or he will choose a batch on the segment ZB', such as W, which provides him more of X i.e. X2 (more than X1 on Z).*
- ❖ *If the imaginary reduction in income is removed and consumer is allowed to operate on new budget line AC then he would definitely like to rest on the pt. N which lets him avail more of X i.e. X3 which is even more than X2 at W on A'B'.*
- ❖ *Hence, revealed preference axiom and the implied consistency of choice determines the derivation of demand curve when the price of X falls and more of X is purchased.*

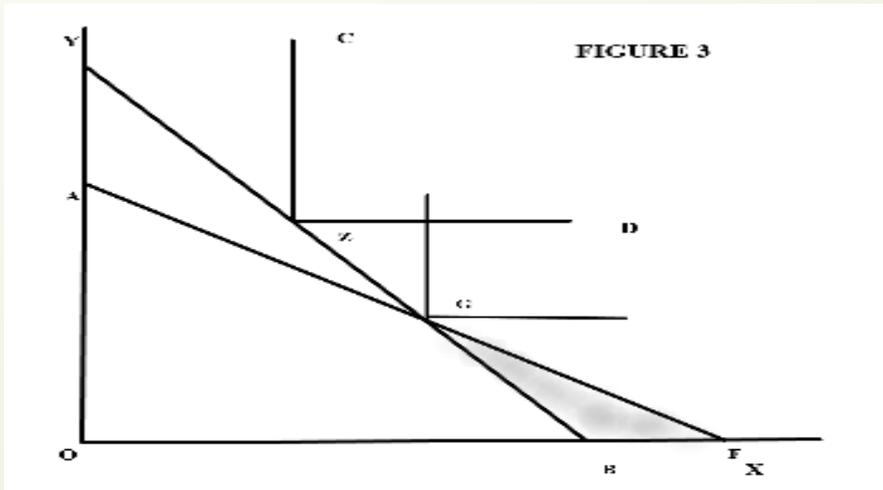
## DERIVATION OF THE INDIFFERENCE CURVES

- ❖ *Revealed preference hypothesis (RPH) enables the derivation of ICs and proving its convexity, although not very needful for the derivation of demand curve.*
- ❖ *Samuelson's RPH does not require ranking for his preferences.*
- ❖ *RPH helps in constructing the indifference map of the consumer just by observing his behaviour or choices at various market prices provided:*
  - choice remains consistent*
  - tastes remain independent of choices over time and be the same.*
  - and consumer remains rational in the Pareto sense i.e. prefers more goods to less goods.*
- ❖ *It can be better understood by using figure 2:*



## DERIVATION OF THE INDIFFERENCE CURVES

- ❖ *AB is the assumed initial budget line and chooses the batch Z.*
- ❖ *All the pts. on the budget line other than Z show inferior batches of goods.*
- ❖ *If perpendiculars are drawn through Z i.e. CZ and ZD, then all the batches on these lines and the area defined by them to the right of Z are preferred to Z because they contain more quantity of at least one commodity.*
- ❖ *Batches in the remaining area i.e. the area below CZD and above the budget line are still not preferred.*
- ❖ *However, it may be ranked in relation to Z by adopting the following measures.*
- ❖ *Let the price of X fall so that the new budget line EF pass below Z, using the following diagram:*



## DERIVATION OF THE INDIFFERENCE CURVES

- ❖ *As learnt from the above study of Samuelson, the consumer will either choose G or a pt. to the right of G on GF since the pts. on EG would be considered an inconsistent choice as it on a lower budget line and hence inferior to G.*
- ❖ *Hence, it is assumed the consumer opts for G pt.*
- ❖ *By using the transitivity rule, we have:*
  - $Z > G$  ; in the original situation.*
  - $G > GBF$  ; in the new budget situation*
  - hence,  $Z > GBF$ .*
- ❖ *In this way, all the batches in GBF are ranked in relation to Z.*
- ❖ *Again the procedure is repeated by drawing the budget line below Z.*
- ❖ *And thereby defining all the batches of the lower ignorance zone ( as shown in figure 4) that are on the lower ignorance zone which are inferior to Z.*
- ❖ *In the same way, all the batches in the upper ignorance zone are too ranked in terms of Z.*
- ❖ *And for this, according to figure 4, the price of X is assumed to increase and the new budget*

line KL passes through Z.

- ❖ The consumer will either stay at Z or will choose U pt. on the budget line KL by using the rational assumption:

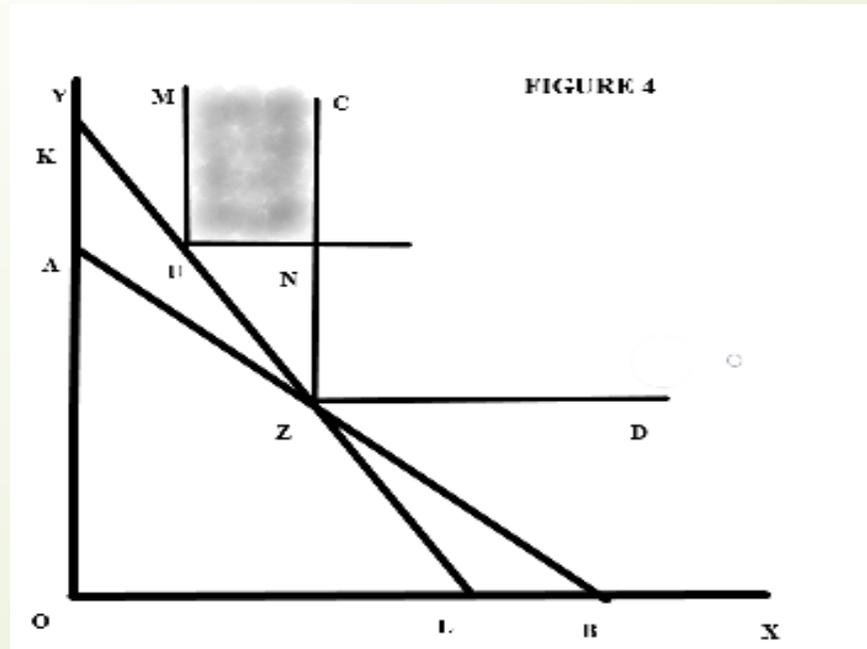
$MUN > U$

from the RPT or RPH

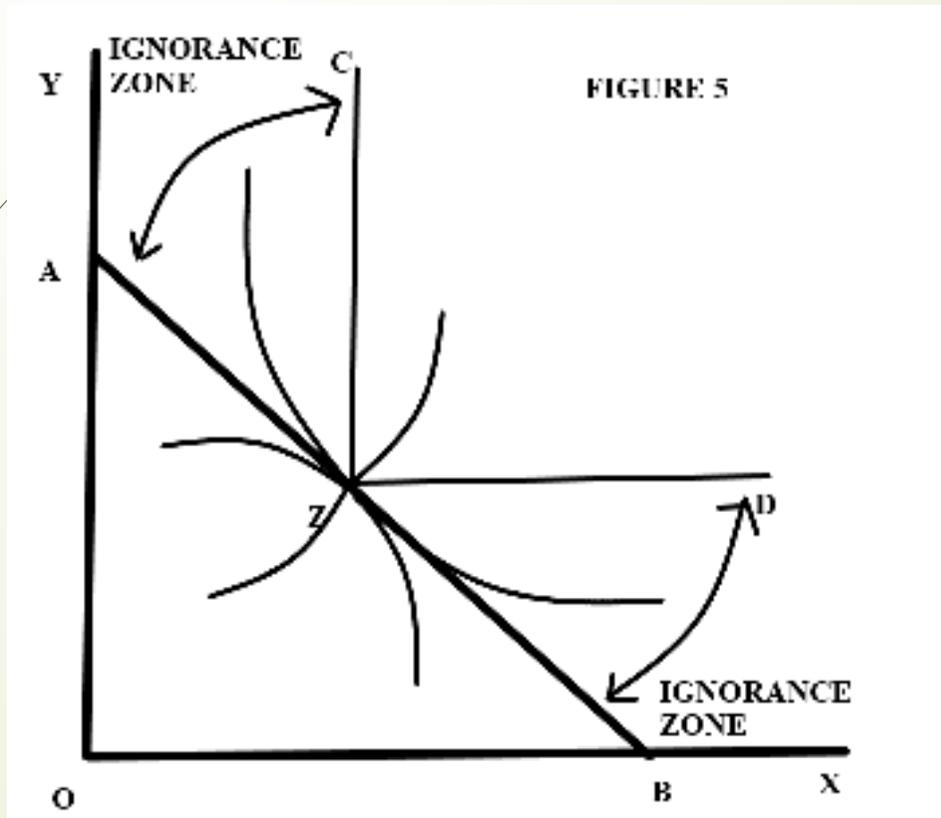
$U > Z$

and from the transitivity postulate:

$MUN > Z$ .



- ❖ Thus, the batches in MUN are preferred to Z.
- ❖ Hence, the RPH and its axiom permits us to derive the indifference curve from the behaviour of the consumer at various market prices.
- ❖ As far as the convexity of the indifference is concerned , it may be established by using the figure 5:



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- ❖ *Original budget situation is used i.e. AB.*
  - ❖ *It is observed that the indifference curve through Z must be somewhere in the ignorance zone and must be convex as there cannot be any other shape.*
  - ❖ *The indifference curve cannot be a straight line AB as the choice of Z shows that all other points on AB are inferior to Z and hence the consumer cannot be at the same time indifferent between them.*
  - ❖ *It cannot be a curve or a line cutting AB at Z because the points below Z would imply indifference of the consumer as he has already preferred for Z.*
  - ❖ *The indifference curve cannot be concave in shape through Z because all points have already been ranked as inferior to Z as they provide less goods.*
  - ❖ *Hence, the only possible shape is convex to the origin.*



## **CONCLUSION**

- ❖ *Hence, the RPH proved the establishment and the convexity of the indifference curves under the weak assumptions.*
  - ❖ *It provides the basis for the construction of index numbers for the cost of living and their use in the consumer welfare where price changes.*
  - ❖ *Therefore, it is a good attempt in explaining the theory of demand with less information and limited assumptions and also without the theories of utility concepts by the Neo- Classical economists.*
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