

## In Praise of Development Economics

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The fox knows many things, but the hedgehog knows one big thing.<sup>1</sup>

To generalize is to be an idiot. To particularize is the alone distinction of merit.<sup>2</sup>

It cometh often to pass that mean and small things discover great better than great can discover small.<sup>3</sup>

### 1. INTRODUCTION

In reflecting on the state of economics in 1975, Bauer and Walters write:

In some branches of the subject notably development economics..., the neglect of reality has compounded the profusion of crude lapses to bring about a situation so unsatisfactory that [this] branch of economics may have retrogressed rather than progressed in recent decades. For instance, books

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<sup>1</sup>Archilochus; as quoted by Isaiah Berlin (1966).

<sup>2</sup>William Blake; as quoted by W. G. Hoskins (1963). This quotation is meant to be provocative and express a point of view not necessarily shared by the author.

<sup>3</sup>Bacon; as quoted by Bauer (1976).

published a generation or two ago, such as those by Vera Anstey, Allan McPhee and W. K. Hancock, are more informative and of greater predictive usefulness than much of the more recent development literature. This literature is often less informative and less useful as a guide to policy than many of the publications of anthropologists, economic historians or observers such as Nirad Chaudhuri, Noni Jabavu and V. S. Naipaul who actually know the societies they write about. Indeed over a wider area, the fiction of Joseph Conrad, Rudyard Kipling, R. K. Narayan, R. Praver Jhabvala, and Solzhenitsyn is more informative on many aspects and relations of economic life than the publications of many economists in major branches of the subject. Their fiction is rooted in reality.<sup>4</sup>

For those who think this indictment to be somewhat overly strong, Walters writes some fourteen years later:

..., the poverty of development economics [has] become increasingly apparent in the 1970s and 1980.<sup>5</sup>

Indeed, it is even felt that:

to the extent that economics is a source of legitimacy for government actions, the modern discipline constitutes in itself a major obstacle to development in backward regions.<sup>6</sup>

In this lecture, I shall argue that development economics, properly conceived, is currently undergoing a renaissance. The point is essentially this. When markets are universal, property rights are perfectly delineated and the environment is "convex", we have a complete and coherent theory.<sup>7</sup> The interesting questions arise as to how society copes with the consequences of the non-fulfilment of these conditions. But it is the so-called LDCs, as well as economies of the past, that are *par excellence* examples of economies in which these conditions are not fulfilled. One may state this another way. A substantial part of the profession is interested in problems of mechanism design and the intricacies of non-cooperative game theory. But it is through this interest in problems of incentive compatibility, imperfect information, and strategic misrepresentation (in the jargon current in the learned journals), that

<sup>4</sup>Bauer and Walters (1975).

<sup>5</sup> Walters (1989).

<sup>6</sup>J. K. Hart; as quoted by Polly Hill (1986).

<sup>7</sup>At the risk of displeasing some, the theory also has elegance and esthetic appeal.

we are naturally led to history, to anthropology and into problems of LDCs for insight and eventual understanding of the structures of the, so-called, advanced economies.<sup>8</sup> Thus the economics of North Sea oil<sup>9</sup> may have more in common with principles governing alternative tenurial arrangements than we realize, and we may learn something about the structure of the modern corporation by a study of the division of labour in the caste system. This is why, it seems to me, economic theorists are now turning to the study of the medieval law merchant,<sup>10</sup> the open field system of medieval times,<sup>11</sup> the Kula exchange system of New Guinea,<sup>12</sup> the banking systems in Barcelona, Venice and Bruges in the thirteenth century,<sup>13</sup> the triangular trade of the Atlantic economy of the eighteenth century,<sup>14</sup> the economics of caste and ethnicity,<sup>15</sup> the economics of social custom,<sup>16</sup> the economics of agrarian institutions,<sup>17</sup> the economics of the state.<sup>18</sup> Indeed, it is surely not that far-fetched to say that currently fashionable microeconomic theory drives its underlying motivation from development economics – in many ways we are all development economists now!

This lecture then can be viewed in two ways. It proposes a definition of development economics as that subfield of our discipline that requires some reflection on the nature of a *commodity* as well as on the nature of an *economic agent*, and to trace out how the interpretation given to these two concepts defines the social context in which the allocation of resources takes place. Alternatively, it argues that problems of development economics can be most effectively handled by injecting specificity into a general framework, different particularizations for different problems, and that the guidance for such specializations of the theory can only be had from an interdisciplinary approach.

These observations suggest the following outline of this lecture. I begin with a presentation of the results and problems in the field of general competitive analysis and concentrate, in particular, on recent extensions to economies with increasing

<sup>8</sup> A similar point in the context of anthropology has been made by Mintz (1985, p. xxvi) in his study on sugar.

<sup>9</sup> See Dam (1965); Sweeney *et al.* (1976) and related references.

<sup>10</sup> Milgrom *et al.* (1989).

<sup>11</sup> Dutta and Sundaram (1988); Dahlman (1980) and Townsend (1987).

<sup>12</sup> Townsend (1988).

<sup>13</sup> Townsend (1988).

<sup>14</sup> Findlay (1989).

<sup>15</sup> Akerlof (1984, Chapter 3).

<sup>16</sup> Akerlof (1984, Chapters 5 and 7).

<sup>17</sup> See the papers and the references to the voluminous literature in Bardhan (1989).

<sup>18</sup> Findlay and Wilson (1987); Findlay (1989 and 1989a); Stiglitz (1991) and the references therein.

returns. I show that these results have a potential for increasing our understanding, in particular, of the economics of the open field systems. Next, I present the case for the property rights approach and point of view emphasizing the pervasiveness of transaction costs, with problems of adverse selection and moral hazard representing extreme values of these costs. In the last half of the lecture, I grope for alternative solution concepts for the allocation of resources. In a final brief section, I return to the question of the definition of our subject.

I conclude this introduction with a disclaimer. There is little that is original in this lecture and much that is beyond my competence. I simply draw attention to the commonality of economic problems even though they pertain to different points in time and space, and underscore once again<sup>19</sup> the insight one obtains by applying standard, and not-so-standard, economic theory. The material is vast and consequently the omissions are many; I shall be content if I can convince you of the importance of the synthesis of analytical and descriptive material for a subject that is both difficult and fascinating.

## 2. THEORETICAL ANTECEDENTS

### 2.1 Arrow-Debreu Theory

I begin with a review of what has come to be called in the literature, Arrow-Debreu theory. Since many excellent accounts of this material are available,<sup>20</sup> I shall be brief.

Consider a setting with a given finite number of perfectly divisible commodities; this delineates the commodity space on which everything is defined. We are also given a finite number of consumers and a finite number of producers. The former are characterized by a consumption set, a preference relation defined on that consumption set, an initial endowment which may or may not belong to the consumption set and shares in the profits of the producers. Producers are characterized by production sets. These are the basic parameters of our stylized economy and by the term *economy* we shall mean nothing more and nothing less than a particular collection of these parameters.

An *allocation* is a list of consumption plans, one plan per consumer and each belonging to his consumption set, and a list of production plans, one plan per producer and each belonging to his production set, such that the aggregate of all the

<sup>19</sup>This is my third presentation to the Society; for earlier attempts, see Khan (1985 and 1988).

<sup>20</sup>The *locus classicus* is, of course, Debreu (1959). The reader is also referred to Koopmans (1957); Arrow and Hahn (1971); Debreu (1986); Malinvaud (1953); McKenzie (1981) and relevant entries in *The New Palgrave*.

consumption plans equals the aggregate of the initial endowments and of all the production plans. It deserves to be emphasized that the notion of an allocation is *the* answer to the basic question of how the economic problem of any society is to be solved – it represents how the resources of any society are to be divided among its various members, with or without recourse to the given technology. In the sequel, I shall single out four kinds of allocations, each representing, in principle, a different answer to this basic question.

An allocation is said to be *technologically efficient* if there is no other allocation in which the sum of the production plans give a greater amount of at least one commodity and not less of any other. Note that under the notational convention that positive elements of a production plan denote outputs and negative elements denote inputs, technologically efficient plans maximize outputs and minimize inputs. Note also that technological efficiency furnishes a partial order or ranking on the space of allocations of a given economy.

An allocation is said to be *Pareto optimal* if there is no other allocation in which the welfare of one consumer can be improved, under his own preferences, without the welfare of any other being worsened, again under their own particular preferences. Note that under the notational convention that positive elements of a consumption plan denote commodities acquired and negative elements commodities furnished by the consumer. Pareto optimality demands, in particular, that labour supply of any one consumer cannot be decreased without protest from the other consumers. Just like technologically efficient allocations, Pareto optimal allocations also furnish a partial order or ranking on the space of allocations of a given economy.

An allocation is said to be in the *core* if there is no other allocation in which the welfare of a coalition of agents can be improved, again under their own individual preferences, and by using only the resources available within the coalition. Core allocations formalize group rationality; if an allocation is in the core, there is no incentive for any group to seek independence from the rest of the economy.

Note that so far our economy is essentially institution free. The setting can apply as much to Robinson Crusoe as to a medieval village or a centrally-planned economy or to a modern capitalist one. Of course, in each case, it would have to be supplemented by relevant institutions and relevant behavioural hypotheses for the agents. Note, however, that we have specified no assumptions on the parameters of the economy other than the implicit assumptions of one agent's parameters being independent from those of any other. Of course, the allocations distinguished in the above definitions may not exist for an arbitrary economy leading to all of the above concepts being vacuous. In the rest of this subsection, we adhere to this stylized framework but introduce markets and a price system.

A *price system* is a function that associates a non-negative real number, namely

value, to each commodity bundle such that (i) "small" changes<sup>21</sup> in the bundle cause "small" changes in the value, (ii) the value of the sum of two commodity bundles is the sum of their values, (iii) an equiproportional change in the commodity bundle causes the value to change in the same proportion, (iv) at least one commodity bundle has a non-zero value.<sup>22</sup>

A *competitive equilibrium* is a pair consisting of an allocation and a price system such that under this price system (i) each producer's plan is such that there exists no plan in his production set which gives higher value than it, (ii) each consumer's plan is in his budget set and there exists no plan in this set preferred to it. Note that the budget set of a particular consumer consists of all plans whose value is less than the value of his endowment plus his share of the profits. Under the assumption of constant returns to scale, no producer makes a profit and hence the ownership of shares in these profits is of no consequence. I shall refer to the allocation in a particular competitive equilibrium as a *competitive allocation*.

I can now present

**Proposition 1** *Under universality of markets and under perfect delineation of property rights, every competitive allocation is in the core and hence Pareto optimal and hence technologically efficient.*

This is, in essence, the first fundamental theorem of welfare economics. Note that the assumptions of universality of markets and of perfect delineation of property rights are not needed in the first part of the proposition and are made simply for emphasis.<sup>23</sup> Indeed, the fact that property rights are perfectly delineated is already explicit in the vector of initial endowments and profit shares and universality of markets is explicit in the definition of a competitive allocation. Note also that no convexity assumptions on preferences or on technology are being made in Proposition 1 but there is no guarantee that competitive allocations may exist and hence that the proposition is not vacuous.

**Proposition 2** *Under convexity, corresponding to any Pareto optimal allocation, there exists a price system and a system of property rights, such that under this system of property rights, the price allocation pair is a competitive equilibrium.*

**Proposition 3** *If every agent is numerically and economically negligible, corresponding to any core allocation, there exists a price system such that the price allocation pair is a competitive equilibrium.*

<sup>21</sup>Under our assumption of a finite dimensional commodity space, such changes are well defined. They are also well-defined in more general commodity spaces but this need not concern us at this stage; see for example Aliprantis *et al.* (1989).

<sup>22</sup>A reader with some technical background will recognize these desiderata as requiring a price system to a non-trivial continuous linear function on a commodity space.

<sup>23</sup>See Debreu (1986) for this point.

Finally, we have a result that guarantees that the theory is not vacuous.

**Proposition 4** *Under convexity and survival, there exists a competitive equilibrium.*

**Proposition 5** *The convexity assumption in Propositions 2 and 4 can be dispensed with in all instances when the agents are numerically and economically negligible.*

## 2.2 The Complications of Public Goods

So far we have assumed a world without any externalities; we now relax this but in an extremely controlled set-up.

A *public good* is a commodity such that the consumption of it by any one consumer does not decrease the amount of it available for any other consumer. One can now generalize the definition of an *economy* to include, in addition, a finite number of public goods. The notion of an *allocation* can be straightforwardly modified to require that the consumption of a public good is identical for all consumers and equal, individually equal, to the aggregate of the amount produced. I shall not allow any consumer to be initially endowed with public goods. With this redefinition of an allocation, the notions of *technologically efficient*, *Pareto optimal* and *core* allocations remain unchanged. The modification for *competitive* allocations requires additional discussion.

A *personalized price system* is a price system as defined above, one price for each commodity, public or private, but supplemented by individualized price systems for public goods, one system per consumer, such that the sum of these individualized public goods prices equals the price of the public goods.

A *Lindahl equilibrium* is analogous to a *competitive equilibrium* with the only difference being that each consumer calculates his budget set with respect to his individualized price system. I shall refer to the allocation in a particular Lindahl equilibrium as a *Lindahl allocation*.

In the generalization to economies with public goods, we see a first preliminary recognition given to the complexity inherent in the definition of a *commodity*. We also see operational significance given to the assumptions of "universality of markets" and "perfect delineation of property rights". The point is simply that in the presence of public goods, property rights *cannot* be perfectly delineated by virtue of a difficulty first noted by Wicksell that consumers have an incentive to misrepresent their demands and hence *free-ride* on the benefits obtained from the public good. The notion of a Lindahl equilibrium is simply an analytical crutch to see what an absence of these difficulties fully entails. I can now state

**Proposition 6** *Propositions 1, 2 and 4 are true with "Lindahl" substituted for "competitive" and "personalized price system" for "price system". Propositions 3 and 5 are, in general, false.*

### 2.3 Non-Convex Economies: A Synthesis<sup>24</sup>

A natural question arises as to the consequences for the theory if the environment is not necessarily convex and agents are not economically or numerically negligible. Over the last five years, there has been substantial progress in equilibrium theory with non-convex technologies, both with and without the presence of public goods. The results I report in this section integrate into the fold of classical general equilibrium theory, ideas that were discussed in the thirties and forties.<sup>25</sup> The integration that has taken place reintroduces into classical general equilibrium the emphasis on marginal rates of substitution that has always been pervasive in the less rigorous and intuitive discussions. I return to an economy without public goods.

A *marginal cost-pricing equilibrium* is a pair consisting of an allocation and a price system such that under this price system (i) the production plan of any producer with a convex production set is such that there exists no plan in this set which gives higher value than it, (ii) each consumer's plan is in his budget set and there exists no plan in this set preferred to it, (iii) the price system belongs to the set of marginal rates of substitution<sup>26</sup> evaluated at the production plans of all producers with non-convex technologies. Note that an individual consumer's budget set consists of all plans whose value is not greater than the value of his endowment plus his share of the profits and losses.

**Proposition 7** *If the economy is viable in the sense that the value of aggregate production plus aggregate endowments is positive at any common marginal rate, there exists a marginal cost-pricing equilibrium.*

**Proposition 8** *Corresponding to any Pareto optimal allocation, there exists a price system and a system of property rights, such that under this system of property rights, the price allocation pair is a marginal cost-pricing equilibrium.*

Next, I turn to economies with increasing returns and public goods.

A *Lindahl-Hotelling equilibrium* is a pair consisting of an allocation and a personalized price system<sup>27</sup> such that (i) the production plan of any producer with a convex production set is such that there exists no plan in this set which gives higher value than it, (ii) each consumer's plan is in his budget set and there exists no plan in

<sup>24</sup>This section draws heavily on my work with Rajiv Vohra and presented in Khan and Vohra (1987 and 1987a).

<sup>25</sup>Most notably, by economists such as Hotelling, Frisch, Lange, Lerner, Coase, Allais, Hicks, Meade, Henderson, Samuelson and Graaf.

<sup>26</sup>The intricacies of what is a marginal rate of substitution need not detain us here. The reader is encouraged to use whatever notion he feels comfortable with. For details he can see Khan and Vohra (1987) and Khan (1987).

<sup>27</sup>Recall that a personalized price system consists of a price system as well as individualized prices for the public goods.



this set preferred to it, this set being evaluated with respect to the consumer's individualized prices for the public goods, (iii) the price system belongs to the set of marginal rates of substitution evaluated at the production plans of all producers with non-convex technologies.

**Proposition 9** *Propositions 7 and 8 are true with "Lindahl-Hotelling equilibrium" substituted for "marginal cost-pricing equilibrium" and "personalized price system" substituted for "price system".*

It is natural to ask what became of the first fundamental theorem of welfare economics in economies with increasing returns, with or without public goods. This takes us into the next subsection.

## 2.4 Some Disturbing Examples<sup>28</sup>

In this subsection, I present results which finally lay to rest in a rather dramatic way the separation between technological efficiency and income redistribution. The bulk of our examples involve non-convex economies but I begin with a proposition for a convex setting. However, first an additional concept.

A *regulated equilibrium* is a pair consisting of an allocation and a price system such that under this price system each consumer's plan is in his budget set and there exists no plan in this set preferred to it, this set is again evaluated so as to take account of a consumer's shares of the profits and losses. Note that the definition makes no specification with respect to the production plans.

I can now state

**Proposition 10** *There exists a convex economy with a "well-behaved" social welfare function and a given system of property rights such that the competitive equilibrium is dominated by a regulated equilibrium whose corresponding allocation is not technologically efficient. The allocation can however be modified to be technologically efficient.*

Moving over to a setting with non-convex technologies, one obtains

**Proposition 11** *There exists an economy none of whose marginal cost-pricing equilibria possess Pareto optimal allocations there also exists an economy none of whose marginal cost-pricing equilibria possess technologically efficient allocations.*

An *average cost-pricing equilibrium* is a regulated equilibrium in which producers with convex technologies choose profit maximizing production plans and those with non-convex technologies choose production plans at which profits or losses are zero.

An allocation is said to be *second-best optimal* if there exists no other regulat-

<sup>28</sup> As will be obvious to any reader acquainted with Vohra's work, this section leans heavily on Vohra (1988 and 1988a).

ed equilibrium in which the welfare of one consumer can be improved, under his own preferences, without the welfare of any other being worsened, again under their own preferences. Note that a second-best optimal allocation need not be Pareto optimal.

One can now show that

**Proposition 12** *There exists a single firm economy none of whose marginal cost-pricing equilibria have allocations which are second-best optimal and all of which are Pareto dominated by average cost-pricing equilibria.*

The propositions presented above have dealt exclusively with a model in which the rules for income distribution are fixed in the sense that each consumer has an exogenously given share in every firm, including the increasing returns firm. Thus, if a firm makes losses as a result of marginal cost pricing, these are covered in a lump-sum manner through predetermined shares. Clearly, we need to consider an equilibrium notion in which the shares of consumers in the losses of the public sector are determined endogenously. I now present such a notion.

A *two-part price system* is a price system as defined above, one price for each commodity, but supplemented by charges for the commodities produced with the non-convex technologies, one charge per consumer, such that these charges are all of the same sign and aggregate to equal the profit or loss of the non-convex firm.

A *two-part tariff equilibrium*<sup>29</sup> is a pair consisting of an allocation and a two-part price system such that (i) the production plans of all producers with convex technologies are profit maximizing at the price system, (ii) there exists no preferred consumption plan in the budget set of any consumer, this set taking account of all the charges levied on the consumer, (i) the price system belongs to the set of marginal rates of substitution evaluated at the production plans of all producers with non-convex technologies.

A *uniform two-part tariff equilibrium* is a two-part tariff equilibrium in which the personalized prices are all identical. Note that in comparison with a marginal cost-pricing equilibrium, a two-part tariff equilibrium allows for some additional flexibility in determining the income distribution. However, the charges inherent in a two-part price system should be distinguished from a lump-sum tax since the consumer can avoid the charge by not buying the commodity. The first consideration implies that a two-part tariff equilibrium may be "better" than a marginal cost pricing under fixed rules while the second consideration implies the opposite. In fact, I now show that no clear comparison is possible.

**Proposition 13** *There exists an economy with a technologically efficient uniform two-part tariffs equilibrium but with no efficient marginal cost-pricing*

<sup>29</sup>This notion was advocated by Coase (1946).

equilibrium.<sup>30</sup>

**Proposition 14** *There exists an economy with a technologically efficient marginal cost-pricing equilibrium but with no efficient two-part tariff equilibrium.*<sup>31</sup>

**Proposition 15** *There exists an economy without any technologically efficient marginal cost-pricing equilibrium or a two-part tariff equilibrium for any distribution of shares in the non-convex technology.*<sup>32</sup>

Proposition 15 shows that, in general, explicit redistribution (in the sense of redistributing endowments or shares in the convex sector) may be required to find an efficient marginal cost-pricing equilibrium. In other words, it may not be possible to achieve first-best efficiency through any system of lump-sum taxes, provided these taxes are used only for financing the firm which faces increasing returns and not for redistributing income.

However, in a very simple model, one can show that there does exist an efficient two-part tariff equilibrium while there may exist no efficient marginal cost pricing under fixed rules for income distribution. This result explains why in simple partial equilibrium models, the inefficiency of two-part tariffs cannot be uncovered.

**Proposition 16** *For all economies with two commodities, many consumers and a single non-convex production set and where the only source of non-convexity is the presence of fixed costs, there always exists a technologically efficient two-part tariff equilibrium.*<sup>33</sup>

Recall that we have already seen from Proposition 11 that in such an economy there may not exist any efficient marginal cost-pricing equilibrium.

### 3. THE PROBLEM OF THE OPEN FIELD SYSTEM

A natural question arises as to the specific relevance of the ideas and concepts of Section 2 to development economics. I digress and attempt an answer in the context of the open field system in Britain which dates from the fourteenth down into the nineteenth centuries.

There are two features<sup>34</sup> of the system that are a source of puzzlement. First, land was both privately and collectively held, the latter being used for grazing; and second, private land was held in scattered strips. It is natural to ask how this system evolved, why it persisted for centuries despite apparent sources of efficiency in consolidation and in "privatizing" the commons, and finally, why did the consolidation and enclosure happen when it did?

<sup>30</sup>See example 3.1 in Vohra (1988).

<sup>31</sup>See examples 3.2 and 4.2. in Vohra (1988).

<sup>32</sup>See example 4.1 in Vohra (1988).

<sup>33</sup>See theorem 5.1. in Vohra (1988).

<sup>34</sup>For details, see Mingay (1968); Dahlman (1980); McCloskey (1989) and their references.

I do not have answers to these questions – they constitute topics of current research. My point is simply that these are questions *par excellence* in development economics and that the theory and propositions presented in Section 2 give us an extremely useful starting point within which to develop hypotheses and to track down alternative sources of explanation.

To begin with, accept the hypothesis that there were economies of scale in grazing.<sup>35</sup> Then a natural question arises as to which of the equilibrium concepts of Section 2 are relevant. One point is clear; the concept of a *competitive equilibrium* does not apply by virtue of the fact that it is not even defined. If all grazing land was held by one agent, who would now constitute the increasing returns to scale firm, there will not, in general, be any profit maximizing production plan and hence no *competitive allocation* of resources with an explicit equilibrium price of grazing services. An alternative is to appeal to the notion of a *marginal cost-pricing equilibrium* but in the context of such an equilibrium, the question has to be answered as to how the increasing returns activity, namely grazing, is to be regulated and its losses covered. The equilibrium notion requires lump-sum taxes, but certainly these could not be levied on all the agents of the economy and presumably needed to be confined to those enjoying the grazing rights of a particular common.

At this point one has also to face up to the complication of grazing services having some of the aspects of a variant of a *public good*, namely a *public input*.<sup>36</sup> This is an analytical formulation of the fact that, within some levels of congestion, allowing one farmer to graze does not lessen the amount of the commons available for any other farmer and that grazing is an input in the production of output. But this leads us directly into the notion of a Lindahl-Hotelling equilibrium but extended to include *public inputs*.

However, it is clear that a Lindahl-Hotelling equilibrium is too demanding a concept, presuming as it does differing individualized prices for each agent. Let me propose instead the hypothesis that what was in operation was a *two-part tariff equilibrium* suitably extended to allow for the presence of public inputs. In such a case, the marginal cost-price of grazing services is conceived to be zero, but all consumers using the service pay a charge that can be seen as consisting of two items: the first constituted by the generalized obligations that becoming a member of a particular village entailed, and the second constituted by the output foregone as a consequence of scattering the strips. I should emphasize that even though these charges may not have added up to the cost of maintaining the commons in a specific sense, they did do so in the generalized sense of maintaining the whole system.

<sup>35</sup> See Dahlman (1980) for arguments in favour of and McCloskey (1989) for arguments against this hypothesis.

<sup>36</sup> See Khan (1983) and the references therein.

Dahlman leans towards this explanation but he does not have the benefit of the precise formulation of equilibria I presented in Section 2.

By virtue of the increasing returns to land in grazing..., the more land he controls the more damage he can cause to the others by threatening to pull out of the communal grazing. ... the decrease in hold-out power of any one farmer as against the collective that scattering achieves. Each single owner would have an interest in consolidating the scattered strips without at the same time having the others do the same.<sup>37</sup>

The conclusion is therefore unambiguous: if there are private property rights in the arable, if outside non-owners can be kept out, and if each farmer practices mixed husbandry, collective rights in the grazing areas can unambiguously be shown to save on transaction costs as compared with private ownership if there are increasing returns to scale in grazing.<sup>38</sup>

Thus, once we grant the plausibility of the increasing returns hypothesis and the efficacy of these analytical connections, Propositions 12 to 16 are directly relevant. Indeed, one has crossed over from questioning the relevance of the results of Section 2 to the desirability of investigating how they would fare in a more generalized set-up which includes *public inputs*. Furthermore, once we identify factors which explain scattering and the commons, the task of explaining why the system evolved or folded follows as a corollary. One simply looks for historical circumstances eroding these factors.

I will conclude this subsection by emphasizing that the identification of increasing returns to scale as the relevant factor in no way precludes us from looking at other explanations of the phenomenon. Indeed, to take an example, we have an alternative explanation in terms of risk-sharing by McClosky.<sup>39</sup> But this leads me to the consideration of a "commodity".

#### 4. THE NOTION OF A COMMODITY

I began Section 2 on theoretical antecedents by considering a "given finite number of perfectly divisible commodities". This allowed me to delineate the commodity space on which the basic parameters of the economy, namely tastes, technologies and endowments, are defined. In particular, this allowed me to set all the relevant concepts in a finite dimensional Euclidean space. All of this has,

<sup>37</sup> Dahlman (1980, Chapter 4).

<sup>38</sup> Dahlman (1980, p. 121).

<sup>39</sup> See McClosky (1989) and the references therein to his work.

as a necessary implication, the fact that every agent, consumer or producer, is "perfectly clear" as to what it is that he or she is receiving or giving under a particular consumption or production plan. This starting point is hardly as innocuous as it may seem. If the theory exposed above is to have a more general relevance to real world economies, and especially to LDCs, one has to face up to the fact that the notion of a "commodity" is a lot more complex than this.

A hint of this complication was already given in my discussion of public goods, but even here only one particular aspect, namely non-appropriability, was emphasized. Light from a lighthouse is non-appropriable, but each agent is clear as to its characteristics, which may include reliability if extensions over time are envisioned. Similarly, radio or TV broadcasts are non-appropriable but again no agent is assumed to have any doubts or imperfect information as to the quality of the programming involved.

But clearly this exclusive emphasis on non-appropriability is justified only to facilitate analytical distinctions. No commodity or service is perfectly non-appropriable or perfectly appropriable. Many countries licence the ownership of radios and TV sets and, in principle, use of lighthouse services can also be monitored. On the other hand, to the extent there is imperfect information as to the characteristics of any commodity, there are elements of non-appropriability in transactions pertaining even to such a simple commodity as say "apples." Thus the issue really comes down to the definition of the commodity space. However, before going into this in any depth, it is well to record the following quotation.

The basic problem here has many parallels. The commodity or service offered has uncertain characteristics. The buyer is not in a position to know what it is that he is buying. To repeat, the two key features of the situation are uncertainty about the quality of service and the difference between the degrees of knowledge possessed by buyer and seller.<sup>40</sup>

We can now make the obvious next step of the argument that in a set-up where commodities are not fully and precisely defined, property rights can never be fully delineated.

Property rights of individuals over assets consist of the rights, or the powers, to consume, obtain income from, and alienate these assets. Obtaining income from and alienating these assets requires exchange; exchange is the mutual ceding of rights. The rights people have over assets (including themselves and other people) are not constant; they are a function of their own direct efforts

<sup>40</sup>Arrow (1972, p. 353-354).

at protection, of other people's capture attempts, and of government protection. Property rights are not absolute and can be changed by individuals' actions; such a definition, then, is useful in the analysis of resource allocation.<sup>41</sup>

Indeed, there are two issues involved here. On the one hand, the propositions of Section 2 explicitly assume:

That property rights are either present and perfectly well or that they are totally absent. They [neglect] the possibility of an intermediate state in which rights are only imperfectly defined. The usual characterization of commodities as homogeneous entities, often with just one attribute, makes it easy to conclude that commodities are either owned or not owned and that there are no intermediate states of ownership.<sup>42</sup>

On the other hand, even without these intermediate states of ownership, the "invisible hand" implicit in the definition of competitive equilibrium needs to be assisted:

More basic yet is the idea that the price system, in order to work at all, must involve the concept of property. Property systems are in general not completely self-enforcing. They depend for their definition upon a constellation of legal procedures, both civil and criminal. The price system is not, and perhaps in some basic sense cannot be, universal. To the extent that it is incomplete, it must be supplemented by an implicit or explicit social contract. Thus one might loosely say that the categorical imperative and the price system are essential complements.<sup>43</sup>

In the vocabulary of the constructs of Section 2, what we have then is a blurring of the distinction between public and private goods and, as first pointed out by Hurwicz, a pervasiveness of Wicksell's problem of misrepresentation. In the conception being put forward here, all commodities have *public good characteristics* in them. Barzel refers to such characteristics as being part of the *public domain*.

The public domain is ubiquitous; innumerable commodity attributes are placed in it. Opportunities for people to gain at the expense of others seem

<sup>41</sup>Barzel (1989, p. 2).

<sup>42</sup>Barzel (1989, p. 64).

<sup>43</sup>Arrow (1972, p. 357).

rampant.<sup>44</sup>

Commodity owners decide whether or not to place attributes in the public domain. In the polar case of a fully owned commodity (or of fully owned attributes) and of a commodity placed in the public domain, the commodities continue to be owned and unowned respectively when their values change. Disputes may occur in intermediate cases.<sup>45</sup>

This leads Barzel to

define transaction costs as the costs associated with the transfer, capture and protection of rights.<sup>46</sup> [Caveat emptor] transactions are those that, once concluded, leave no obligations remaining between transactors. Market transactions are those without lingering obligations, that is, are governed by caveat emptor.<sup>47</sup>

A natural question arises at this stage as to what happens to the concepts and results set out in Section 2 once we try to incorporate these considerations. Clearly, one has to begin with a richer definition of a *commodity* and the consequent modification of a commodity space. I consider two such modifications; these are not mutually exclusive.

The first modification involves “building up” from the definition of a commodity used in Section 2. Following Kolmogorov, consider a “list” of all possible contingencies or “states of nature” that can occur at the time period when the allocation of resources is contemplated. Such a list, to be referred to as a *sample space*, may be of arbitrary cardinality. A sample space is also endowed with a set of its subsets, to be referred to as a  $\sigma$ -algebra which obeys certain natural rules of probability. The point is that a  $\sigma$ -algebra formalizes information as to the possible contingencies that may occur and the larger the number of elements in this set, the greater (finer) the available information. As an example, consider a sample space consisting of three possible states of nature: rain, hail and sunshine. A  $\sigma$ -algebra may consist of all possible subsets of this sample space and hence represents *full information*; or it may consist only of the sample space and the empty set and hence, not being able to distinguish any state, represents *no information*; or yet it may be able to distinguish only between hail and rain on the one hand and sunshine on the other. In this case we have *partial information*. I shall refer to a sample space along with

<sup>44</sup> Barzel (1989, pp. 114 and 118).

<sup>46</sup> Barzel (1989, p. 68).

<sup>48</sup> Barzel (1989, p. 2).

<sup>47</sup> Barzel (1989, p. 53).



its  $\sigma$ -algebra as a *measurable space*.

A "commodity" then is simply a function from the sample space to the finite dimensional Euclidean space. Such a function is a "contract" and involves a pre-commitment by the agent to take various actions. The point that needs to be emphasized is that this function is constant on all of those contingencies which cannot be distinguished by that agent's  $\sigma$ -algebra. Radner (1968) refers to this as *informational feasibility*. I have thus introduced, in the context of uncertainty, another parameter, namely information, in the specification of an economy.

So far so good. We have now to see how the concepts of Section 2 can be recast under this redefinition of a commodity space. This is a routine and mechanical matter and only the notion of a *price system* requires a little bit of care. The difficult problems are conceptual. The first difficulty relates obviously to the enforcement of these contracts and this hinges both on *observability* and *verifiability* of different contingencies.<sup>48</sup> The second difficulty is somewhat more subtle. This relates to the fact that economically and numerically negligible agents may not be informationally negligible and hence there is the possibility of an agent modifying his parameters, principally information, in response to actions taken by another agent. Thus one is gradually but inevitably led away from transacting with an impersonal market, as is required under the solution concept of a competitive equilibrium, to the analysis of other concepts which involve bargaining, misrepresentation, side-deals, kickbacks and other unsavory phenomenon which can be grouped under the general heading of corruption, a phenomenon hardly unheard of in any economy, developing or developed.

But then I jump ahead. I have still to discuss the other modification of a commodity space. This involves the interpretation of a *measurable space* as a given space of characteristics with the  $\sigma$ -algebra specifying the knowledge which a particular agent has about these characteristics. In such a conception, a commodity is simply a set of probability measures<sup>49</sup> on the space of characteristics. A variety of formulations of the concepts of Section 2 are possible here, and under each, the difficulties associated with the corresponding definition of a price system have to be overcome. However, I hope that it is clear that even after these difficulties are surmounted, one is again led into the same conceptual problems that I emphasized in connection with my first formulation of a commodity space.<sup>50</sup>

It may be worth pointing out here that these conceptual difficulties are referred to in the literature as problems posed by *adverse selection* and by *moral*

<sup>48</sup> See O. Hart's entry on *incomplete contracts* in *The New Palgrave*.

<sup>49</sup> Think of this simply as an object that associates a number between zero and one for any event, i.e., any element in the  $\sigma$ -algebra.

<sup>50</sup> See Rosen (1974) and Mas-Colell (1975) for details.

*hazard*. The distinction is not fully transparent since both involve imperfect information and the consequent uncertainty that arises. However, as a rough classification, *adverse selection* refers to situations where there is uncertainty as to the basic parameters of the agents, principally uncertainty as to the types of agent, whereas problems of *moral hazard* arise in the difficulties that accompany the monitoring of actions that are taken to exploit this uncertainty.<sup>51</sup> But it is clear that we have now reached a point in the discussion where examples are badly needed.

## 4.1 Examples

### 4.1.1 Lemons

I begin with a discussion of the market for used automobiles. Focus on automobiles of a particular vintage and a particular brand and assume that within these, there are only two characteristics: "good" and "bad", the latter being a *lemon* in the North American jargon. The point is that there is *asymmetric information* between buyers and sellers in that the sellers are aware of the characteristic (type) of the automobile and the buyers are not. Akerlof has shown<sup>52</sup> that the universality of markets cannot hold in these circumstances. An uninformed buyer will be willing to pay the average price for a particular automobile but at this price all the sellers of a "good" automobile will have an incentive to drop out of the market.

Gresham's law has made a modified appearance. For most cars traded will be the "lemons" and good cars may not be traded at all. The "bad" cars tend to drive out the good... . In a more continuous case with different grades of [cars], even worse pathologies can exist. For it is quite possible to have the bad driving out the not-so-bad driving out the medium driving out the not-so-good driving out the good in such a sequence of events that no market exists at all.<sup>53</sup>

This is a problem of adverse selection *par excellence* or to put the matter another way, transaction costs of monitoring lead to an incomplete market.

I leave it to you to think up more examples of *lemons* in LDCs. We all know the inconveniences of adulterated foods in LDCs but the problem is more pervasive than that.

The presence of people who wish to pawn bad wares off as good wares tends to

<sup>51</sup>See R. Guesnerie's entry on *hidden actions* in *The New Palgrave*.

<sup>52</sup>See Akerlof (1984, Chapter 2). It is interesting that this paper was written when its author was visiting the Indian Statistical Institute.

<sup>53</sup>Akerlof (1984; p. 9).

drive out the legitimate business. The cost of dishonesty, therefore, lies not in the amount by which the purchaser is cheated; the cost must also include the loss incurred from driving legitimate business out of existence.<sup>54</sup>

#### 4.1.2 Education

The problem of *lemons* has to do with missing markets, in Arrow's terms, or with the costs of verification in the vocabulary of the transactions-costs approach. The point can be made more sharply in the case of "education" as a commodity.

Start with the extreme presumption that certain types of education have no direct value (marginal product) in the production of output, or more generally, in the earning of foreign exchange. Such a presumption is explicit in the recommendations of all foreign experts who argue that LDCs must emphasize technical vocations rather than degrees in the humanities and in arts and sciences.<sup>55</sup> The question is why such education is still demanded. An answer first offered by Spence (1973) is that education is simply a signal, like a brand name, which compensates for missing markets in characteristics, these being reliability, discipline, ability to work in a team and so on. And, of course, it is these characteristics which are really in demand and which cannot be observed.

#### 4.1.3 Insurance

So far, I have emphasized problems of adverse selection, namely problems having to do with unobservable characteristics of the commodity in question. Insurance as a commodity certainly leads to such problems. There are "careful" and "careless" agents and for the first fundamental theorem of welfare economics (Proposition 1 above) to hold, the insurance premia should be different for the two differing types of agents. But these differences cannot be observed and the missing market leads to the "careful" agents dropping out of the market or, in any case, subsidizing the "careless" agents. On all of this, I now repeat myself. What is new in the situation is that there is also an incentive for the "careful" agents to become "careless". In terms of the jargon, this is the problem of *moral hazard*. The point is a simple one; the asymmetry of information has led maximizing agents to change their actions. I now expend less resources in terms of my time, maintenance service, fire detectors etc. because I know that my house or automobile is insured. The implication for honesty and other ethical standards referred to above is an obvious one.

<sup>54</sup> Akerlof (1984, p. 16).

<sup>55</sup> See, for example, the relevant chapters in Myrdal (1968).

#### 4.1.4 *Credit*

I simply continue the above discussion in terms of credit rather than insurance as a commodity. The issues are precisely the same. A profit maximizing financial institution will want to give credit to entrepreneurs who are "dynamic" enough to succeed but since these characteristics cannot be readily identified, a variety of signalling devices are invented and utilized. These, of course include collateral, but may also include other indices such as ethnicity, contacts, records of previous performance etc. Moreover, to the extent that these other indices are relevant, they may lead to problems of moral hazard by encouraging the choice of production plans which contribute to the signalling objective.<sup>56</sup> The basic point that needs to be underscored is simply that there is nothing irrational about these activities and that they are perfectly well understood in terms of the theory.

#### 4.1.5 *Labour*

Problems of moral hazard are ubiquitous in the consideration of labour as a commodity. Effort is not observable and more importantly, can be optimized upon by a rational agent. The study of different institutional arrangements to cope with these missing markets and the variety of signalling devices that are being used, both in developing and developed countries, requires a lecture in its own right. I shall simply restate the fact that different tenurial arrangements, in particular, can be understood as societal responses to cope with problems of transaction costs. For detailed study, I refer you to the recent essays collected by Professor Bardhan.<sup>57</sup>

#### 4.1.6 *Blood*

Finally, I turn to a commodity that has generated some academic controversy. Using blood as a commodity, Professor Titmuss contrasts the British system of blood donation with that of the U.S. What he comes up with appears to be – and probably is – a devastating and unanswerable indictment of the American system as inferior to the British in efficiency, morality and attractiveness. There is a certain paradox, then, in the fact that in England blood is free, whereas [in the U.S.] blood is dear. From this secure beachhead, Titmuss launches a broad attack on the market as a mechanism for the mobilization and allocation of scarce resources.<sup>58</sup>

Commercialization of blood represses the expression of altruism, erodes the sense of community, lowers scientific standards, limits both personal and

<sup>56</sup>I cannot help being reminded of a big New York utility which spent more on advertising the good job it was doing to combat pollution rather than on combatting pollution itself.

<sup>57</sup> See Bardhan (1989).

<sup>58</sup> Solow (1971).

professional freedoms, sanctions the making of profits in hospitals and clinical laboratories, legalizes hostility between doctor and patient, subjects critical areas of medicine to laws of the marketplace, places immense social costs on those least able to bear them – the poor, the sick and the inept – increases the danger of unethical behaviour in various sectors of medical science and practice and results in situations in which proportionately more and more blood is supplied by the poor, the unskilled, the unemployed.<sup>59</sup> Short of examining humankind itself and the institution of slavery – of men and women as market commodities – blood as a living tissue may now constitute in Western societies one of the ultimate tests of where the “social” begins and the “economic” ends.<sup>60</sup>

We have already considered some, though by no means all, of the issues raised by Titmuss. In particular, when blood is being sold, there is the natural incentive for a maximizing agent to misrepresent its quality. In a system which is exclusively based on donation, there is no such incentive. In technical terms, the mechanism is self-enforcing. Of course, the problem can be attenuated to the extent that monitoring devices are available.<sup>61</sup> In any case, one is again forcefully thrown back to the supplementing of the invisible hand.

In real life, emphasis must be put on the implicit nature of social contract. One might be thought of giving blood in the vague expectation of needing it later on. More generally, one gives good things in exchange for a generalized obligation on the part of fellow men to help in other circumstances if needed. Some of the subtleties of the social contract theory are seen when the anonymous recipients in question are future generations or indeed the sick and poor of the present generation.<sup>62</sup>

## 5. ON THE IMPORTANCE OF INSTITUTIONS

My argument so far can be summarized as follows. Section 2.1 showed that the case for the market system is secure if there are no non-convexities, markets are universal and property rights are fully delineated. Sections 2.2 and 2.3 emphasized the difficulties posed by the presence of increasing returns even if property rights are fully delineated and one is allowed some interference (regulation of) with the

<sup>59</sup>Titmuss (1971, p. 245).

<sup>60</sup>Titmuss (1971, p. 158).

<sup>61</sup>See Kessel (1974) and the references therein.

<sup>62</sup>Arrow (1972, p. 349).

“invisible hand” to ensure universality of markets. These sections question discussions<sup>63</sup> that proceed under the implicit assumption that the case for the market is secure if there are no transactions costs. Section 4, on the other hand, emphasized the difficulties when one takes a somewhat deeper view of a “commodity” even in a perfectly convex world. Such a view makes the assumptions of no transactions costs increasingly untenable.

Both Sections 2.2 - 2.3 and Section 4 can be seen as grouping towards solution concepts and institutional frameworks that are more satisfactory for understanding how resources are allocated than is the idealized and essentially institutionally-free notion of a competitive equilibrium. We now get our first preliminary definition of development economics as a subject that matches transactions with institutions in a discriminating way. Williamson states this with lucidity, although in a different context.

The overall object of the exercise essentially comes down to this: for each abstract description of a transaction, identify the most economical governance structure—where by governance structure I refer to the institutional framework within which the integrity of a transaction is decided. Markets and hierarchies are two of the main alternatives.<sup>64</sup>

One can, and should, take a more general view.

Of course, giving is not the only alternative to pure exchange. Authority and hierarchy constitute one alternative system, rational bureaucracy with place determined by merit another; but certainly the role of free giving in producing a more humanitarian social order is worth considering.<sup>65</sup>

The same transactional factors that impede autonomous contracting between individuals also impede market exchange between technologically separable work groups. Vertical integration is accordingly to be understood mainly as an internal organizational response to the frictions of intermediate product markets, in which bounded rationality and opportunism are prominently featured, while conglomerate organization is interpreted as a response to (remediable) failures in the capital market, in which these very same factors appear, albeit that the context differs.<sup>66</sup>

I will now refer you to the work of Williamson in which he draws the relevance,

<sup>63</sup> As, for example, in Demsetz (1982).

<sup>64</sup> Williamson (1979, p. 234).

<sup>65</sup> Arrow (1972, p. 346)

<sup>66</sup> Williamson (1975, p. 56).

and makes precise the meaning of terms such as *bounded rationality*, *opportunism*, *small numbers*, *information impactedness*, *atmosphere*, *opportunism*, *investment idiosyncrasy* as well as the intricacies of *classical*, *neoclassical* and *relational contracting*. Instead, I shall present examples. However, I cannot help remarking that there is some irony in the fact that these examples are all far removed from a modern corporation for which these concepts were originally intended.

## 5.1 Examples

### 5.1.1 *Servitudes*

Servitudes in ancient Roman Law are interesting examples of institutional responses to transaction costs. I shall limit myself to a single quotation.

There were numerous types of servitudes, but the four earliest, *iter*, *actus*, *via*, and *aqueductus*, were in a special category, since they were *res mancipi*.<sup>67</sup> *Iter* was the right to cross the neighbour's land, *actus* the right to drive cattle across, *via* the right to have a road across and *aqueductus* the right to have an aqueduct across the neighbour's land. That they were *res mancipi* suggests that in primitive times they were thought of as corporeal, as actually conferring some kind of ownership in the soil of the neighbouring land. Later many other servitudes developed. ... the right to pass smoke from a cheese factory through the apartments above. A common one is the right to light – the neighbour is not to build higher on his property in such a way that the adjacent owner's light will be affected. The one that offended against the principle that a servitude could not impose a duty to do something was the right of support to a wall or roof.<sup>68</sup>

### 5.1.2 *Haqq Hamsaya*

The title of this subsection needs no translation to a Pakistani audience – it simply refers to the convention in South Indian urban communities that a neighbour was automatically entitled to “roughly” half the produce of a tree directly adjacent to his property. This was an elegant, and presumably efficient, response to the problem of monitoring costs. The economics of the problem have been discussed at length by Meade (1952) in his apples-bees example.

### 5.1.3 *Homesteading*

It is interesting to contrast the granting of a fiefdom in medieval times with

<sup>67</sup> Rights only of Roman citizens.

<sup>68</sup> Watson (1970; p. 55).

nineteenth century U. S. when the government took possession of vast amounts of land in the West. These lands were not auctioned or sold but given away or sold at a price substantially below that of the market.

At the same time it imposed severe constraints that those claiming land had to satisfy before they could gain the right to sell the land.<sup>69</sup>

Here again there was an explicit contract in which free land was traded off with the costs of protection by the state.

#### 5.1.4 *The Medieval System*

I have two reasons for drawing your attention to the feudal economies of Europe in the middle ages. The first is to emphasize the *implicit* and *explicit contract* between the lord and his vassals. In this connection, scrutiny of the words *precarium* and *beneficium* is rewarding. These

[were] grants of land to be held by some one during the pleasure of the donor. Under Roman law such a "precarious" tenure could be terminated any time. Later, ... it became a legal right of occupation for a period of years or for life, in return for a payment of rent or the performance of a stipulated service. ... a *precarium* had been obtained through the prayer of the recipient ... but a *beneficium* was a boon on the part of a grantor. The important fact is that [each] was typically ... an agrarian estate — a group of lands organized for production, with the appurtenant buildings, tools, domestic animals, and cultivators of the soil, both free and servile.<sup>70</sup>

When the obligations of a vassal were primarily in terms of military service, the granted estate was referred to as the *fief*. The meaning of the terms evolved over time and space. Thus, in medieval France,

a *fief* was sharply distinguished from *allodial* property. The latter was really owned, by virtue of an absolute title secured through inheritance, gift, or purchase. The former, a man held of some one else, enjoying at most what lawyers call the usufruct.

[Over time] *fiefs* held of a lord would bring him the following income, tangible or intangible: homage and fealty, knight service, feudal aids, entertainment,

<sup>69</sup>Barzel (1989; p. 91).

<sup>70</sup>Stephenson (1942, p. 7).



suit to his court and the resulting profits of justice [and] the so-called feudal incidents.<sup>71</sup>

I can now move on to my second point and this concerns the process of *subinfeudation*. This was simply the process by which a vassal took on vassals of his own who followed suit in a system of a pyramidal regress. The resemblance to more modern structures, corporate or non-corporate, is clear – all are responses to transactions costs of monitoring and supervision.

I close this subsection by drawing your attention to the contempt for wage-labour in sixteenth and seventeenth century England.

Even the Levellers, the most radical of all seventeenth-century political groupings, would have excluded paupers and servants (i.e. wage-labourers) from the franchise because they were unfree... [and] had lost their birthright because they had become economically dependent on others: they had lost their property in their own persons and labour.

Wage labour ... was slavery, a loss of man's birthright freedom.<sup>72</sup>

### 5.1.5 *The Jajmani System*

This is an economic system in which each man works for a particular family or group of families. The head of the group is called *Jajman* and the worker is referred to as the *Kamin* or *Kam karne wala*.

Jajmani rights, which link one to certain families, may be regarded as a form of property passing from father to son. Like land property, it is equally proportioned among brothers when they separate.<sup>73</sup>

Tables 1 and 2 reproduced from Lewis-Barnouw bring out the hierarchy of occupations effectively. I would simply like to draw your attention to the role of the lack of labour mobility in assuring a stable labour supply and ask you to contrast this not only with the medieval system described above but also with the conditions of serfdom in Russia before the emancipation.<sup>74</sup> I also refer you to discussions of the role of the concepts of purity and pollution in maintaining this hierarchy.

<sup>71</sup> Stephenson (1942, p. 23).

<sup>72</sup> Hill (1967).

<sup>73</sup> Lewis and Barnouw (1956).

<sup>74</sup> See Gerschenkron (1962).

Table 1  
*Rules of Service, Rampur*

Caste	Type of Service	Rights Earned through Service
<i>Khati</i> (Carpenter)	To repair agricultural tools.	1 maund of grain per year along with <i>ori</i> rights (2½ sirs of grain twice a year at each sowing season) (70).
<i>Lohar</i> (Blacksmith)	To repair agricultural tools.	1 maund of grain per year along with <i>ori</i> rights.
<i>Kumhar</i> (Potter)	To supply earthenware vessels and to render services of light nature at weddings.	Grains to the value of the vessels. Additional grain at the son's or daughter's marriage, according to status and capacity.
<i>Hajjam</i> or <i>Nai</i> (Barber)	To shave and cut hair, to attend to guests on their arrival and to render other services of light nature at weddings.	At each harvest as much grain as the man can lift by himself. Additional grain at the son's or daughter's marriage, according to status and capacity.
<i>Khakru b</i> or <i>Bhangi</i> (Sweeper)	To prepare cow-dung cakes; to gather sweepings, to remove dead mules and donkeys, to collect cots for extraordinary needs, and to render services at weddings.	Meals and <i>rabri</i> (a preparation made from churned curd and flour) twice a day; at each harvest as much grain as the man can lift by himself and also at the son's or daughter's marriage, according to status and capacity.
<i>Camar</i> (Leather Worker)	To assist in agriculture and give all kinds of light services.	One-twentieth of the produce.
	To do <i>begar</i> (compulsory labour) render ordinary service, and remove dead cattle.	One-fourth of the produce and the skins of dead cattle.

Table 2  
*Jajmani Relationships among Different Castes in Rampur*

S. No	Castes	Serves	Is Served by
1	Brahman	2, 3, 4, 5, 6, 7, 8, 9, 10	3, 4, 6, 7, 8, 10, 11, 12
2	Jat		1, 3, 4, 6, 7, 8, 10, 11, 12
3	Baniya	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 4, 8, 10, 11, 12
4	Nai	1, 2, 3, 5, 6, 7, 8, 9, 10	1, 3, 8, 10, 11, 12
5	Chipi	1, 4, 10	1, 3, 4, 8, 10, 11, 12
6	Khati	1, 2, 3, 4	1, 3, 4, 8, 10, 11, 12
7	Lohar	1, 2, 3, 4	1, 3, 4, 8, 10, 11, 12
8	Kumhar	All	1, 4, 10, 11, 12
9	Jhinvar	(Cash Relationships)	(Cash Relationships)
10	Dhobi	All	1, 3, 4, 8, 11, 12
11	Camar	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	8, 12
12	Bhangi	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	8, 10

#### 5.1.6 *The Quoms of Swat*

The point of this example really lies in the antithesis of the caste system to precepts of Islam. Again Figures 1 and 2 tell a rather complete story. What is most interesting about this system is the pyramidal structure of payments. What is also interesting is the degree of permanence.

...it is quite possible for a man to say: "I am a carpenter, but I am working as a muleteer. This does not mean that he is at one and the same time both carpenter and muleteer.

For details, I refer you to Barth's article; also see Ahmed (1990).

#### 5.1.7 *Southerntown*

This is an example of an economic system which can be culled from the Yale

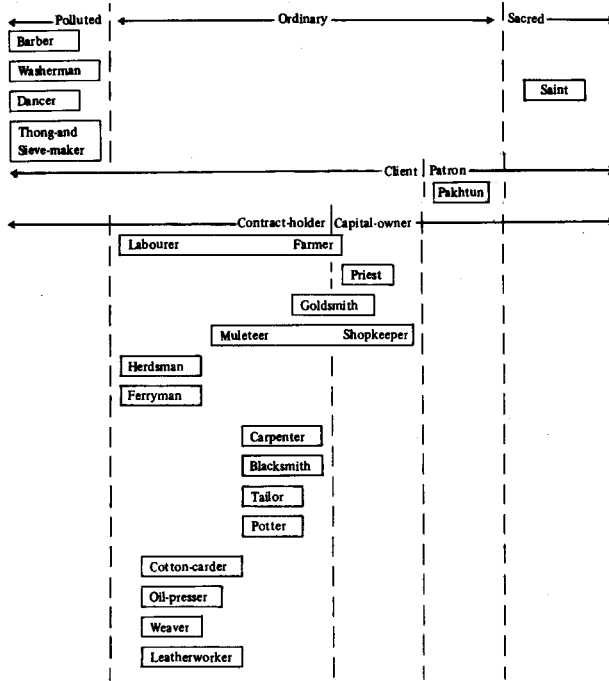
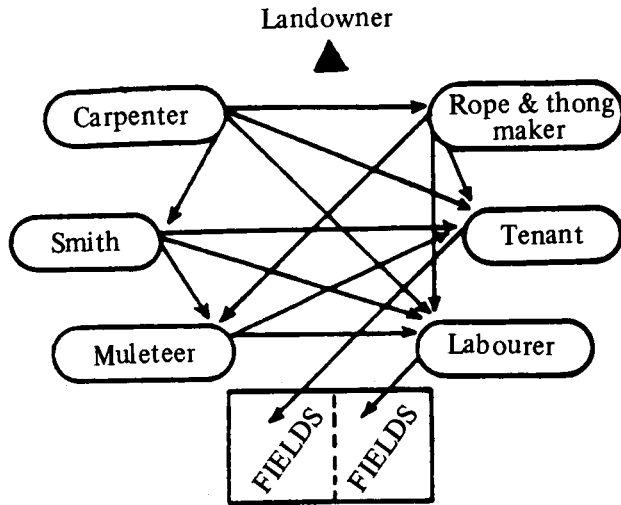


Fig. 1. The Hierarchy of Castes in Swat, and some Criteria on which it is Based.

Table 3  
Rules of Service, Swat

S. No.	Occupational Category	Pashtu Name
1.	Descendants of the Prophet	Sayyid
2.	Saints of Various Degrees, All Landowners and Mediators in Conflict	Sahibzada
		Mian
		Akhundzada
3.	Landowners and Warriors	Pirzada
		Pakhtun
4.	Priest	Mullah
5.	Shopkeeper	Dukandar
6.	Muleteer	Paracha
7.	Farmer, Tenant	Zamidar
8.	Goldsmith	Zerger
9.	Tailor	Sarkhamar
10.	Carpenter	Tarkarn
11.	Blacksmith	Inger
12.	Potter	Kulal
13.	Oil-presser	Tili
14.	Cotton-carder	Landap
15.	Weaver	Jola
16.	Leatherworker	Mochi
17.	Agricultural Labourer	Dehqan
18.	Herdsman	Gujar
19.	Ferryman	Jalawan
20.	Musician and Dancer	Dem
21.	Washerman	Dobi
22.	Barber	Nai
23.	Thong- and Sieve-maker, Dancer	Kashkol

SERVICES:



PAYMENTS:

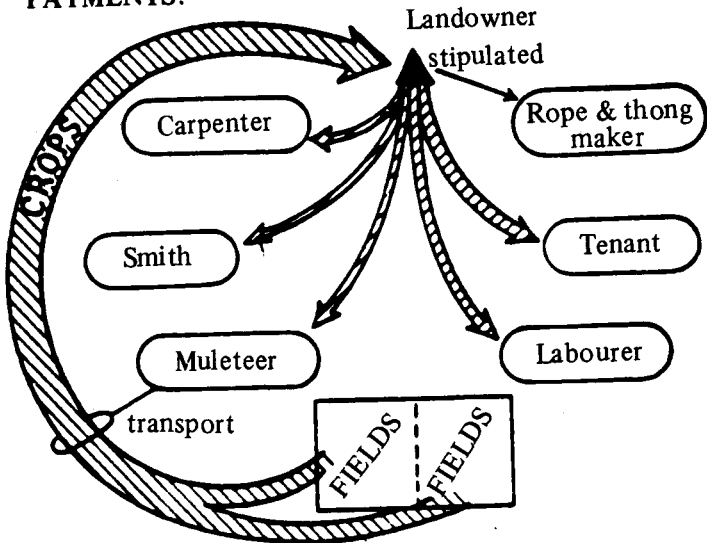


Fig. 2. The Organization of Agricultural Activities in Swat: Services and Remuneration.

psychologist Dollard's 1937 study of a town in the American South.

A discussion of caste and class in Southerntown may well begin with a classic story on race relations. A Negro was found by the conductor sitting in the white car of a southern train. [When] challenged, he objected, ..., and gave as his reason, "Boss, I'se resigned from de coloured race."<sup>76</sup>

What is interesting about this study is the pervasiveness of institutions that one would normally associate with LDCs. One finds, in keeping with the basic theme of this essay, interlinked markets, lack of labour mobility and phenomenon that one associates with a caste-ridden society.<sup>76</sup>

#### 5.1.8 *Dyadic Systems*

This is an example of an economic system which is not a hierarchy but in which a single individual contracts with another individual.

The importance of this distinction is clear when we remember that in Tzintzuntzan there are no institutions in which an individual recognizes identical and comparable obligations to two or more people. Each person is the center of his private and unique network of contractual ties, a network whose overlap with other networks has little or no functional significance. There is an elaborate pattern of reciprocity, occurring almost entirely between pairs of individuals, in which goods and services are continually exchanged. ...in its totality, the reciprocity system validates, maintains and gives substance to the implicit contractual networks.<sup>77</sup>

#### 5.1.9 *Temple Economies*

I begin with a brief description of a Sumerian temple economy.

It depicts a society run by priests of the temples on bureaucratic or even despotic lines. The temples controlled most of the arable land. They recruited labour and allocated it to a complex irrigation system going. The system drew labour from the adult population as a whole, then redistributed the product to all, including the very old and the very young who could not support themselves.<sup>78</sup>

<sup>76</sup> Dollard (1937, p. 61).

<sup>79</sup> There are five chapters all having *caste* in their title.

<sup>77</sup> Foster (1967).

<sup>78</sup> Curtin (1984, p. 63).

What has made the problem more interesting is that new historical and archeological research has revealed the simultaneous existence of markets and prices.

Markets and fluctuating prices could be found at as early as the end of the fourth millenium B. C., even though redistributive and reciprocal arrangements may also have existed.<sup>79</sup>

One may also refer here to the economy of a Thai village described by Townsend (1988) in which land is not communally owned but each household was obliged to transfer part of their rice crop to the temple which then redistributed it to those who did not do as well.

#### 5.1.10 *Pratik in Haiti*

This is an example of an extremely interesting economic system in which there are property rights in trade and competition of intermediaries in a labour-surplus capital-poor economy. I refer you to the work of Mintz (1961; 1974) and limit myself to the following quotations emphasizing how the *Pratik* custom plays an integrative economic role.

To the extent that her stock is committed in such arrangements, a selling *pratik* will refuse to sell to others until she has met her *pratik* buyer. One may be led to believe that the selling behaviour is random or whimsical, and that they may refuse to make certain sales because of an irrational streak. It should be clear, however, that personalized economic relationships, while they modify somewhat the nature of the distributive process, arise precisely because the intermediaries understand the basic character of the Haitian economy so well.<sup>80</sup>

Concessions (in the form of price quantity, credit or otherwise) are made by intermediaries both to producers and consumers, and to yet other intermediaries. The reciprocal reward for these concessions takes the form of more assured pathways to supply and demand. In effect, the intermediary will be seen to be trading some portion of her potential profit in a theoretically random market situation, in return for some measure of assurance that she will be able both to acquire stock and to dispose of it.<sup>81</sup>

#### 5.1.11 *Planned Systems*

My final example is the standard one of a hierarchy composed of the planning

<sup>79</sup>Curtin (1984, p. 64).

<sup>80</sup>Mintz (1961).

<sup>81</sup>Mintz (1961).

systems in the (formerly?) controlled economies of Eastern Europe.<sup>82</sup> One may also logically include here, in addition to the modern corporation, other non-profit maximizing institutions such as churches, universities,<sup>83</sup> voluntary organizations and bureaucracies.

## 6. THE NOTION OF AN ECONOMIC AGENT

In my discussion of the notion of a commodity in Section 4, I referred in passing to agents maximizing their self-interest. Once we depart from the simple set-up of Section 2, it is far from clear how this self-interest is being measured and the agent whose behaviour is being modelled. It is clear that the formalization of the objectives and constraints of a particular agent will depend not only on the commodity space and the institutional setting, but also on the particular aggregate entity that is being termed the *economic agent*. In this section, I list a variety of possibilities.

### 6.1. Examples

#### 6.1.1 Peasant

There is no universal agreement even on such a primitive notion as that of a peasant.

A peasant is someone who lives in the country and works on the land.<sup>84</sup>

Some ... have defined the peasant as one who works the land without entering the market either for the sale of his produce or for his labour supply. Has such an "ideal" autarkical peasant ever existed<sup>85</sup>...?

I define peasants as populations that are existentially involved in cultivation and make autonomous decisions as regarding the processes of cultivation. The category is thus made to cover tenants and sharecroppers as well as owner-operators, as long as they are in a position to make the relevant decisions on how their crops are grown. It does not, however, include fisherman or landless labourers.<sup>86</sup>

The triple division of the peasantry into rich, middle, and poor is now taken as axiomatic. ...it is, of course, the middle peasant, the truly marginal man, partially enmeshed in the market economy but partially still retaining the independence of the subsistence farmer, who is the essential soul of

<sup>82</sup> See Koopmans and Montias (1971) and Montias (1977) and their references for details.

<sup>83</sup> For a particularly illuminating analysis, see Alchian (1977, Chapter 7).

<sup>84</sup> Stern in his entry on *peasant economy* in *The New Palgrave*.

<sup>85</sup> Forster in his entry on *peasants* in *The New Palgrave*.

<sup>86</sup> See Wolf (1969, p. xiv).



resistance... the rich peasant remains the natural upholder of the *status quo*.<sup>87</sup>

I try to show why the sudden and universal adoption of *peasant*, as a kind of synonym for *countryfolk*, has done so much damage to our proper comprehension of the operation of rural tropical economies.<sup>88</sup>

### 6.1.2 *Class*

It is not only analysts working in the Marxist tradition that have worked with the notion of a *class*; one of the celebrated theorems in the pure theory of international trade charts out the effect of a tariff on the distribution of income between labour and capital.

### 6.1.3 *Bureaucrat*

A bureaucrat, in so far as he wants to rise in his career, has his own objectives and his own action set. An interesting question is to investigate the extent to which these further or frustrate the objectives of society at large, and the modifications they make to the outcome of the process of resource allocation.<sup>89</sup>

### 6.1.4 *Nation-State*

The nation-state as an economic agent figures most prominently in the theory of international trade. A variety of normative investigations are undertaken in which the optimum interference in a particular market is advocated on grounds of improvement in national welfare.<sup>90</sup> However, examples are easy to find in other fields where the calculation of "optimum" values of a variety of variables is the chief object of the exercise.

In recent years, the emphasis has shifted to more disaggregative analyses. This is only natural since the State is an active participant in the economic affairs especially of the LDCs and it behooves us to study the mechanisms of this participation in some depth. Ron Findlay puts this particularly well.

The issue is no longer one of whether "outward looking" or "restrictive" trade policies are most conducive to development, but what factors determine whether a given state, i.e., nation-state, in the Third World has followed one

<sup>87</sup> See Stokes (1978, p. 282).

<sup>88</sup> Hill (1986, p. 8).

<sup>89</sup> For details, I refer you to Banfield (1975); Niskanen (1975); Rashid (1981) and their references.

<sup>90</sup> See, for example, Bhagwati (1983) and the references therein.

type of policy or the other.<sup>91</sup>

The relevance of this question to other problems of resource allocation is an obvious one.<sup>92</sup>

But of course once one proceeds in this direction, one has to go into an investigation of the bonds that hold a particular state together.<sup>93</sup>

#### 6.1.5 *Ethnic Groups*

It is clear that there are actions being taken in the world today which are more motivated more on the grounds of ethnicity rather than as citizens of a sovereign state. I have on more than one occasion spoken to the Society on models motivated by differing ethnic groups.<sup>94</sup> For insightful material supplementing those analyses, I refer you to the elegant studies of Sidney Mintz (1974) for the Caribbean and to a large and diverse amount of inter-disciplinary material.<sup>95</sup>

#### 6.1.6 *Colonial versus Metropolitan Interests*

This is an interesting area of investigation in which the tension between the colonial government and the metropolitan one is brought out and studied.<sup>96</sup>

#### 6.1.7 *OPEC and other Cartels*

This is an example of an agent that attains its *raison d'être* by virtue of being a seller of a particular commodity. The interesting questions concern the tension between the forces holding the agent together and those leading to its dissolution.

#### 6.1.8 *Third World*

In a series of provocative essays, Bauer has discussed arguments for and against the giving of foreign aid to LDCs. Whatever one's views on the merits of the arguments themselves, one cannot help being impressed with aggregate levels at which

<sup>91</sup>Findlay (1988).

<sup>92</sup>For details, see Buchanan *et al.* (1980); Findlay and Wilson (1987); Findlay (1988); Stiglitz (1991) and the references therein.

<sup>93</sup>For details, see Kedouri (1960; 1970); Kohli (1986) and their references.

<sup>94</sup>See Khan (1985) and Khan and Chaudhuri (1985).

<sup>95</sup>See Glazer and Moynihan (1975); Esman *et al.* (1988) and Young (1976) for a comprehensive overview. Economists who have thought on this topic include Akerlof (1984); Arrow (1972a and 1972b) and Becker (1957).

<sup>96</sup>See Mamdani (1976); Schweinitz (1983) and Stokes (1978) in addition to the formal analysis of Hansen (1979).

the contending agents are formulated. Bauer contrasts the interests of the West with that of the Third World but does not desegregate the West into subgroups in whose interest it is that the aid is being given.

One may also refer here to the variety of models which have been presented to analyze the problems of North versus the South, especially after the release of the Brandt Commission Report.<sup>97</sup>

## 7. TOWARDS NEW SOLUTION CONCEPTS

I now complete a circle. I started in Section 2 on *terra ferma*; the notion of a commodity was clear, agents as well their behavioural hypothesis were well-specified, and the solution concepts for the allocation of resources seemed natural. We have now chipped away to undermine that simple a conception of a commodity space, that simple an institutional setting and that simple a conception of an agent. In this brief section, I consider the importance of social norms and point towards the literature of non-cooperative game theory.

Even in Section 2, I argued that the price system has to be supplemented by, in Arrow's terms, the "moral imperative". This is all the more true in a world in which incompleteness of markets leads to differing institutional responses. A way out, of course, is to resort to the hypothesis of "irrationality" on the part of the agents involved. I touched on this in my discussion of the institution of *pratik*. An alternative approach is to resort to exhortations to agents to choose "socially acceptable" actions.<sup>98</sup> Either approach is basically a confession of our ability to formulate the particular solution concept that explains the phenomenon. Arrow states this somewhat differently.

I should add that, like many economists, I do not want to rely too heavily on substituting ethics for self-interest. Wholesale usage of ethical standards is apt to have undesirable consequences. Ethically motivated behaviour may even have a negative value to others if the agent acts without sufficient knowledge of the situation.<sup>99</sup>

Thus methodologically, the question is clear. We have to understand what it is that leads agents maximizing their self-interest to co-operation. This is now an active branch of research and I shall content myself with a few indicative examples.

<sup>97</sup> See Ratliff (1981); Khan (1985) and the references therein.

<sup>98</sup> This happens both in developing and developed countries. Recall President Ford's exhortation to "whip inflation now".

<sup>99</sup> Arrow (1972, pp. 354-355).

## 7.1 Examples

### 7.1.1 *The Medieval Law Merchant*

The question is simply

how can a community of traders [in medieval times] promote the trust necessary for efficient exchange when there are short-run temptations to cheat on contracts?<sup>100</sup>

The fact that the traders were dispersed geographically and the state was not powerful enough for judicial enforcement were additional complicating factors. The institutional response was a law-merchant with whom all contracts and complaints were registered. The essential point, however, was that the decisions of this law-merchant were not binding and a particular trader could easily cheat on a particular deal. Nevertheless the system functioned effectively for many centuries.

Milgrom *et al.* (1989) formulate the problem as a repeated game and derive conditions under which the institution of the law-merchant solved a number of incentive problems.

Individual members of the community [were] induced to behave honestly; to boycott those who behaved dishonestly; to keep ...informed about [those] who had been dishonest; and to provide documentation when one has been cheated.<sup>101</sup>

It is interesting that the first part of the analysis concentrates on the easier case when the law merchant is himself honest. I leave it to you to decide if this constitutes development economics and whether it is relevant to LDCs.

### 7.1.2 *Wakil-al-tujjar*

This is an institution analogous to a medieval law merchant but functioned at a later period of when Arab traders were ascendant. I refer you to Curtin (1984) for details.

### 7.1.3 *Protection Money*

Curtin (1984) discusses in detail the importance of protection money as a

<sup>100</sup>Milgrom *et al.* (1989).

<sup>101</sup>Milgrom *et al.* (1989).

mechanism for facilitating international trade. This has not been subjected to rigorous analyses but it is clear that the incentive problems are similar to those in my first two examples and it would be fascinating to chart how the institution evolved and functioned. I would argue that the insights one would gain would apply as much to modern economies as to those of an earlier period in history.

In summary, one may say that in an important sense, these are all examples of missing markets in which differing transactions costs lead to differing institutional responses. But a general diagnoses of the difficulty is not a prescription for a cure. Possible cures, of course, have been offered in the rich variety of the solution concepts of non-cooperative game theory. For more examples, I refer you to the recent work of Sugden (1989) and Elster (1989) on social norms, and to Harrington (1989), Kandoori (1989) and issues of the new journal *Rationality and Society*.

### 8. IS THERE A SUBJECT?

In conclusion, I return to the question of definition and ask what is it that gives development economics its defining characteristic. As conceived in this essay, does it not embrace all of economics? In an important sense this is true for all subfields of economics for example, the aims of the *Journal of Mathematical Economics* state:

The primary objective of this journal is to provide a forum for work which expresses economic ideas using formal mathematical reasoning. [The] ideas may pertain to any field of economics and any school of economic thought.

Identical sentiments can be found in the aims of other specialty journals in the field. It is clear that this must be so; at the very least, it ensures the viability, within the subject, of the subfield itself. Nevertheless, every subfield has its own particular twist and development economics must, of course, be concerned with *development* and *change*. Beyond this, however, I have tried to argue that its uniqueness lies in its lack of specialization and in its ability to see things whole. The following quotation from Sen, with "development economist" substituted for "economic analyst" brings out the creative synthesis I have in mind.

Ricardo was ... not going to look at many things, but he was going to assess rigorously a few things well. It is an approach that has borne many fruits in our discipline, but it is also limited and narrow, and ultimately counterproductive. An economic analyst ultimately has to juggle many balls, even if a little clumsily, rather than giving a superb display of virtuosity with one little ball.<sup>102</sup>

<sup>102</sup> See Klammer (1989).

I would then conclude, as I began, that development economics, so conceived, is alive and well.

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## Comments on “In Praise of Development Economics”

It is a pleasure to comment on the paper by Prof. M. Ali Khan.

Easy they said:

- (i) First agree with the general thrust;
- (ii) Then suggest a bit more theoretical rigour would be welcome and note 4 or 5 papers by Arrow and Samuelson that should be taken into account;
- (iii) Then rue the fact that more empirical work has not been done; and
- (iv) And the conclusion is obvious – end with the case for more research.

I have, however, received the paper and I have a better excuse than other discussants for not doing it justice. It is not simply that time was short. The paper is really a set of working notes. Professor Khan refers to the problem posed by incomplete markets. I was faced with an incomplete paper!

My comments could be based on what I thought he would say today or on what I think the final draft will be. Rather, following a few specific remarks on the draft, I would like to take this opportunity to share with you my reflections on a larger issue raised by this paper and indeed several others presented here.

Prof. Khan presents a quote from the now infamous Alan Walters – who recently provoked the resignation of the Chancellor of the Exchequer of Great Britain – regarding, “the poverty of development economics”. Prof. Khan asserts to the contrary that development economics is undergoing a renaissance.

I agree with him, though our reasons for thinking so may be different. He places emphasis on the fact that in developing countries are to be found the largest departures from the assumptions underlying neoclassical theory: universal markets, perfectly delineated property rights and a convex environment. He, therefore, sees developing countries as a source of insight into the interesting theoretical questions raised by the non-fulfilment of these conditions.

My own reasons for believing in a renaissance would focus more on the departure by economists from broad theoretical generalizations about the development process. The increased emphasis on the application of the theoretical and econometric tools of micro- and macroeconomics to a range of more specific behavioural phenomena with important welfare consequences is welcome and a sign

of the motivation of the discipline. The important thing is that we agree that development economics is a thriving discipline and that in many respects, to quote Professor Khan, "we are all development economists now".

Prof. Khan begins with a review of Arrow-Debreu theory and discusses the concept of Pareto optimality. His notes on the implications for theory of dropping various key assumptions are tantalizing. For example, he points out that for the price system to work at all there must be clearly defined property rights embedded in a constellation of legal procedures. That made me think of the challenge currently being faced by the East Europeans. I was recently told a story about two new private enterprises in an East European economy. One placed a large order with the other for an intermediate input. When the order was delivered the first firm said: "No thank you. We have changed our minds. We do not really want it". The first firm responded "you cannot do that", but in fact they could because in that country there is no contract law and no legal procedure for adjudicating such disputes. It may be easier for the East Europeans to create markets than to build the institutional infrastructure necessary for them to operate efficiently.

Prof. Khan also asserts that to find an efficient marginal cost pricing equilibrium it may be necessary to have an explicit redistribution of assets. This immediately raises the issue of whether government, in low or high income countries, is capable of enabling us to fulfil this condition. What are the implications if it is not? I look forward to the final version of the paper to satisfy my curiosity about these and other issues raised in the draft.

I turn now to a few thoughts about our concern as economists with allocative efficiency and Pareto optimality. While, as I mentioned, I agree with Professor Khan that development economics has advanced considerably from its early days in the 1950s, there is one way in which I think we have regressed. The early general thinkers about the process of economic development, most notably Arthur Lewis, placed heavy emphasis, not on allocative efficiency and its welfare implication but, on the dynamics of poor economies. This emphasis on dynamics is, I think, well placed. Consider two of the most dramatic changes currently unfolding in the world economy: the rise in economic power of Japan and the NICs and the virtual collapse of the centrally-planned economies of Eastern Europe.

It is hard to claim that the first of these important phenomena is due solely "to getting the prices right" while the second is due solely to "getting the prices wrong". There is no doubt that resource allocation is much more efficient in Japan (though some dramatic examples of price distortions are to be found in Japan) and Korea than it is in Poland or Romania but there are other important factors at work. The term "dynamics" immediately conjures up savings which was where much of the emphasis was placed by Arthur Lewis. He predicted rapid growth in LDCs as soon as they could raise their savings rates to a level equivalent to those in high

income countries. However, the Eastern Europe countries, as well as many of the developing countries that have failed to grow rapidly, have had saving rates comparable to those we observe in Japan and the NICs.

Now, I would place the emphasis on how those savings have been used. Japan and the NICs have been exceptionally good at identifying and realizing high return investments in physical and human capital. The East European economies and troubled LDCs have been less good at this. They have often chosen projects with low expected returns or implemented investments so poorly as to convert high expected return projects into low return projects. Perhaps, even more important, they have diverted a growing proportion of their scarce valuable savings into subsidies for inefficient enterprises or into the support of excessively large public bureaucracies — effectively transforming a significant proportion of their savings back into consumption.

A related point concerns “opportunities to fail”. One of the strengths of a competitive market economy is that ultimately, the inefficient and unprofitable fail, freeing up resources to be used in more productive uses. Schumpeter referred to this process as “creative distinction”. In Eastern Europe there was no mechanism for recognizing and dealing with failures. Rather, they behaved as if once bit, an enterprise would go on forever. This of course requires, if only implicitly, subsidies. Over time the accumulation of enterprises that should have been allowed to fail but were not, ate up scarce savings and sapped those economies of their dynamism. While Japan and Korea did not always observe all the marginal conditions, they did impose a severe market test. They said “we may protect you or subsidize you in the short run, but you have to show over time that you are internationally competitive by increasing your exports.” If a firm failed to do that it was allowed to fail.

Economies appear to be able to tolerate divergence from the conditions of static efficiency and still prosper if they get the dynamics right, as Japan and Korea have shown. They cannot, however, tolerate much waste of potential investment resources, irrespective of how efficient their existing stock of resource is allocated. Clearly, there are links between static and dynamic efficiency. As economists, I think a major challenge is to better specify those links so as to improve our understanding of how to achieve dynamic efficiency.

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## Comments on “In Praise of Development Economics”

The paper is an excellent exposition on the state of welfare economics, but it does not make sufficiently clear what development economics in general and development policy in particular can learn from welfare economics. In my own contribution I will try to focus on this point by stating five rather general propositions.

### **First**

Welfare economics suggest that all economic activity and economic policy making should aim, at any point of time, at the well-being of the final user of commodities and not at that of producers. This postulate is violated by many economies and policy decisions all around the world. However, its violation has more serious consequences in developing countries where poverty makes the final consumer much more vulnerable than elsewhere and where new productive structures and the entire policy climate may be shaped in the wrong direction (producer-oriented instead of consumer-oriented) right from the beginning.

### **Second**

Welfare economics says that a clear distinction has to be made between allocative efficiency and distributional justice. Welfare economics can design economic regimes which satisfy the first target but not the latter. The fundamental problem in dealing with distributional justice is the non-comparability of the utility levels of different individuals. Achievement of distributional justice therefore is a political problem on which the economist has little to say competently as an economist. The large number of people affected by poverty in developing countries makes distributional justice a more urgent problem than in advanced countries. Although welfare economics cannot prescribe how to achieve distributional justice it can indicate where policy measures adopted in the name of distributional justice violate economic efficiency.

### **Third**

Stretching the concept of welfare economics a bit, one can bring in Tinbergen's well-known theorem that the number of policy instruments has to match the number

of policy targets. That means that distributional justice cannot be achieved by the same policy instruments as those employed for the sake of economic efficiency. If in a market economy a price vector is required to bring about efficiency, prices are ruled out as policy instrument for the aim of distributional justice. Empirical evidence in many developing countries, but also in developed countries, supports the conclusion that the use of prices for achieving distributional justice creates inefficiency.

#### Fourth

Modern welfare economics suggest that non-convexity in production does not rule out the achievement of efficiency through a pricing system, as had been concluded earlier on. The defunctionalization of the pricing system on the ground of scale economies or externalities is therefore unjustified. "Getting prices right and development will follow" is wrong if development is more than just economic efficiency. But getting prices wrong is, in most instances, even worse, with the exception of temporary emergency situations.

#### Fifth

Welfare economics suggest that economic agents must be able to execute property rights in order to achieve efficiency. That is not the same as private ownership in the narrow sense. One can, indeed, conceive a system where an operator of public property obtains all the benefits, but carries also all the costs of the economic use of that property. The institutional system for dealing with such an arrangement would probably be so complex that it becomes irrelevant for most countries, in particular developing economies.

Professor Naqvi yesterday presented a highly interesting paper on the role of government in the development process with considerable recourse to neo-classical first principles, which often are said to derive from welfare economics. His paper can be interpreted as a warning to draw too far-reaching and therefore wrong policy conclusion from welfare economics. For economic development as well as other policy areas, welfare economics probably is better suited to draw certain boundaries which policy making cannot transcend without incurring losses in the achievement of policy targets, rather than for giving positive prescriptions. This is not only due to inherent theoretical problems of solving complex programmes, but also due to the explicit neglect of institutional constraints in welfare economics and, as mentioned above, the impossibility to measure cardinal utility and, as a consequence, to compare individual utility levels. I therefore conclude that the attempt to reconstruct development economics on the basis of welfare economics – what Prof. Khan seems to intent – is bound to fail.

While I agree with Prof. Naqvi's conclusion that we as responsible economists

who advise governments have to adopt a balanced stance on the role of government, we should also not be complacent about its virtues; and this not only holds for developing but also for developed countries. As to the latter, I only need to mention outrageous policies in the area of agriculture, nuclear breeder technology or spending on armament. Without this incredible waste of resources, which defies all economic rationality, mankind today could be much better off, both in the North and the South.

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