



INSTITUTIONAL AND ECONOMIC CHANGE

DOUGLASS C. NORTH

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FOREWORD

In their pursuit to explain economic performance and provide policy prescriptions, most economists take society's institutions for granted. They seldom question how these institutions change over time. Although economists have been able to make significant progress by focusing on economic relations, they have not adequately addressed some fundamental issues – for example, why some nations are poorer than others, even when they possess the same natural resources, technology, and economic policies; and, why changes in the formal rules of the game work in some settings but fail to produce their intended results in others.

In this publication, Douglass North develops a framework for dealing with such difficult questions. He focuses on economic and institutional change. His basic thesis is that “reality” is never known to anyone. Humans construct beliefs about that “reality.” At every point in time, the beliefs held by the powerful political and economic entrepreneurs produce certain institutions, both formal and informal, that determine economic performance. Competition among rivals in society, along with other exogenous factors, produces a never ending process of institutional change. This process is incremental and path dependent. “Big bangs” do not work, nor do mere changes in the formal rules of the game.

The implications of North's thesis for Egypt are clear. Economic reforms will not produce the desired results without institutional reforms. The reform process is gradual and can be expected to take time. The success of this process requires champions.

As Professor North was unable to make it to Cairo, this edition of the *Distinguished Lecture Series* presents only his paper and not a summary of the discussion which usually follows a presentation at ECES. However, the importance of the speaker and the relevance of his thesis more than justify this publication in its own right.

Ahmed Galal
Executive Director, ECES
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تقديم

درج معظم الاقتصاديين على افتراض ثبات إدارة مؤسسات المجتمع في محاولاتهم المستمرة لشرح الأداء الاقتصادي و لوصف السياسات المطلوبة. و نادراً ما يثيرون تساؤلاً عن كيفية تغير هذه المؤسسات على مر الزمن، وعلى الرغم من أن هؤلاء الاقتصاديين قد تمكنوا من تحقيق تقدم جوهري عن طريق التركيز على العلاقات الاقتصادية، إلا أنهم أغفلوا تناول بعض المسائل الأساسية-مثل ماهية الأسباب في أن بعض الأمم قد تكون أكثر فقراً من الأخرى بالرغم من تساويهم في امتلاك نفس المصادر الطبيعية للثروة، والتكنولوجيا، والسياسات الاقتصادية، وكذلك ماهية الأسباب في نجاح التغيير في قواعد اللعبة في بعض الأحوال، وإخفاق نفس هذا التغيير في إحداث النتائج المستهدفة في أحوال أخرى.

في هذه المحاضرة يضع دوجلاس نورث إطاراً للتعامل مع مثل هذه النوعية من الأسئلة الصعبة مركزاً على التغيير الاقتصادي والمؤسسى. يفترض نورث أنه لا يوجد أحد يعرف جوهر الحقيقة وأن الأفراد يشكلون معتقداتهم تبعاً لهذه الحقيقة. في كل مرحلة زمنية، تؤدي معتقدات السياسيين والاقتصاديين ذوى النفوذ إلى إنشاء بعض المؤسسات، رسمية وغير رسمية، تقوم بتحديد مسار الأداء الاقتصادي. كما تؤدي المنافسة بين القوى المختلفة في المجتمع مع وجود بعض العوامل الخارجية، إلى إحداث عملية لا نهائية من التغيير المؤسسى. وهذه العملية تراكمية بطبيعتها وتعتمد على مسار الأداء الاقتصادي في حد ذاته.

أما بالنسبة لما يسمى بالصدمات الكبرى، فهذا الإتجاه مصيره الإخفاق مثله مثل أى محاولة لتغيير القواعد الرسمية للعبة. ولعل مضمون ما ينادى به نورث في حالة مصر يتسم بالوضوح؛ أن أى محاولات للإصلاح الإقتصادي لن تجنى الثمار المرجوة منها ما لم تصاحبها عمليات إصلاح مؤسسى، وأن عملية الإصلاح هذه يجب وأن تتسم بالتدرج آخذين في الاعتبار الوقت الذى قد تستغرقه. وللحقيقة، تحتاج عملية الإصلاح هذه إلى أبطال يعرفون طريق النجاح.

ونظراً لأن البروفيسور نورث لم يتمكن من الحضور إلى القاهرة، فإن هذا الإصدار من سلسلة المحاضرات المتميزة، لا يقدم سوى محاضراته وحدها دون تقديم ملخص المناقشات كما جرت العادة. إلا أن المكانة المرموقة للمتحدث ومدى إتصال ما افترضه بالواقع المصرى، يعد تبريراً قوياً لإصدار هذه المحاضرة على ما هى عليه، لما تتمتع به من قيمة كبيرة في حد ذاتها.

أحمد جلال

المدير التنفيذى، المركز المصرى للدراسات الاقتصادية

يناير ١٩٩٨

ABOUT THE SPEAKER

DOUGLASS C. NORTH

Olin T. Spencer Professor of Arts and Sciences,
Department of Economics, Washington University in St. Louis

Nobel laureate Douglass C. North is the Olin T. Spencer Professor in Arts and Sciences in the Department of Economics at Washington University in St. Louis. From 1984 to 1990, North was Director of the Center in Political Economy at Washington University. He has also held positions at Cambridge University, Rice University, the University of Washington, and Stanford University. He has served as president of the Economic History Association and of the Western Economic Association, and has been elected to the American Academy of Arts and Sciences and the British Academy.

North received his Ph.D. in economics from the University of California at Berkeley. In 1984 North was chair of the Working Group on the Emergence of Social, Economic, and Political Institutions of the National Research Council of the National Academy of Sciences. The following year he was advisor to the US Agency on International Development. In 1990 he was a consultant for The World Bank, and in 1996 he was a consultant to the OECD. He was a co-winner of the Nobel Prize in Economics in 1993.

North has published numerous articles and monographs. His books include *The Economic Growth of the United States, 1790-1860* (1961), *Growth and Welfare in the American Past: A New Economic History* (1966), *A Documentary History of American Economic Growth, 1607-1869* (edited with Robert P. Thomas, 1968), *The Economics of Public Issues* (with Robert L. Miller, 1971), *Institutional Change and American Economic Growth* (with Lance E. Davis, 1971), *The Rise of the Western World: A New Economic History* (with Robert P. Thomas, 1973), *Structure and Change in Economic History* (1981), *Institutions, Institutional Change, and Economic Performance* (1990), and *Empirical Studies in Institutional Change* (edited with Lee Alston and Thrainn Eggertsson, 1996).

INSTITUTIONAL AND ECONOMIC CHANGE

1. Introduction

The discipline of economics is made up of a static body of theory that explores the efficiency of resource allocation at an instant of time and under the restrictive assumptions of frictionless markets. Recent research has explored the nature of the frictions by incorporating institutions, transaction costs, and political economy into economic analysis, thereby providing theory with a bridge to the real world of real economies. But the first constraint of static analysis is that it makes it difficult to analyze and improve the performance of economies in a world of continuous change. In fact, employing static theory as a source of policy recommendation in a setting of dynamic change is a prescription for policies which produce unanticipated and undesirable results.

This essay provides an approach to the study of the process of economic change. Although there is still much to learn about the process, this essay gives an analytical framework highlighting the problems that must be confronted in order to understand and improve economic performance. First, the analysis describes the intentional nature of *human interaction in a world of pervasive uncertainty*, before going on to describe the *process of economic change*. It concludes by drawing some implications from this approach to the process of change which highlight the *lacunae in current understanding* of this process.

2. Human Interaction in a World of Pervasive Uncertainty

In contrast to standard theory that draws its inspiration from physics, modeling the process of change must derive its inspiration from evolutionary biology. But in contrast to Darwinian theory, in which selection mechanisms are not informed by beliefs about the eventual consequences, human evolution is guided by the perceptions of the players who make choices (decisions) in light of these perceptions in order to produce outcomes downstream that will reduce the uncertainty of organizations -- political, economic, and social -- in pursuit of their goals. Institutional change, therefore, is a deliberate process shaped by the perceptions of the actors about the consequences of their actions. The immediate way in

which the actors try to shape their environment is by altering the institutional framework to improve their (and their organizations') competitive position. Five propositions may describe this process:

1. The continuous interaction between institutions and organizations in the economic setting of scarcity, thereby making *competition the key to institutional change*.
2. Competition forces organizations to *continually invest in new skills and knowledge* in order to survive. The kind of skills and knowledge individuals and their organizations acquire will shape evolving perceptions about opportunities and hence the choices that will incrementally alter institutions.
3. The *institutional framework provides the incentive structure* that dictates the kinds of skills and knowledge perceived to have the maximum payoff.
4. Perceptions are derived from the *mental constructs of the players*.
5. The economies of scope, complementarities, and network externalities of *an institutional matrix* make institutional change overwhelmingly incremental and path dependent.

Competition, the Key to Institutional Change

Institutions are the rules of the game -- both formal rules, informal norms and their enforcement characteristics. Together they define the way the game is played. Organizations are the players. They are made up of groups of individuals held together by some common objectives. Economic organizations are firms, trade unions, and cooperatives; political organizations are political parties, legislatures, regulatory bodies- educational organizations are universities, schools, vocational training centers. The immediate objective of organizations may be profit maximizing (for firms) or improving reelection prospects (for political parties). But the ultimate objective is survival because all organizations live in a world of scarcity and hence competition.

Continuous Investment in New Skills and Knowledge

New or altered opportunities may be perceived as the result of exogenous changes in the external environment which alter relative prices to organizations, or the consequence of endogenous competition among the organizations of the polity and the economy. In either case, the ubiquity of competition in the overall economic setting of scarcity induces entrepreneurs and the members of their organizations to invest in skills and knowledge. Whether by learning on-the-job or through the acquisition of formal knowledge, improving the efficiency of the organization relative to that of rivals is the key to survival.

While idle curiosity is surely an innate source of acquiring knowledge in human beings, the rate of accumulating knowledge is clearly tied to the pay-offs. Secure monopolies, whether organizations in the polity or in the economy, simply do not have to improve to survive. But firms, political parties, or even institutions of higher learning faced with rival organizations must strive to improve their efficiency. When competition's muted (for whatever reasons), organizations will have less incentive to invest in new knowledge and consequently will not induce rapid institutional change. Stable institutional structures will be the result. Vigorous organizational competition will accelerate the process of institutional change.

Institutional Framework as Providing the Incentive Structure

There is *no* implication in Proposition 2 of evolutionary progress or economic growth -- only of change. The institutional matrix defines the opportunity set, be it one that makes income redistribution the highest pay-off in an economy or one that provides the highest pay-offs to productive activity. While every economy provides a mixed set of incentives for both types of activity, the relative weights (as between redistributive and productive incentives) are crucial factors in the performance of economies. The organizations that come into existence will reflect the pay-off structure. More than that, the direction of their investment in skills and knowledge will equally reflect the underlying incentive structure. If the highest rate of return in an economy comes from piracy, the organizations will invest in skills and knowledge that will make them better pirates. Similarly, if there are high returns to productive activities, organizations will devote resources to investing in skill and knowledge

that will increase productivity (the new growth economics literature can become relevant at this point).

The immediate investment of economic organizations in vocational and on-the-job training will obviously depend on the perceived benefits. But an even more fundamental influence on the future of the economy is the extent to which societies will invest in formal education, schooling, the dissemination of knowledge, and both applied and pure research which will mirror the perceptions of the entrepreneurs of political and economic organizations.

Mental Constructs of the Players

The key to the choices individuals make is their perceptions about pay-offs, which are a function of the way the mind interprets the information it receives. The mental constructs individuals form to explain and interpret the world around them are partly a result of the genetic evolution of the mind, partly of their cultural heritage, partly a result of the local everyday problems they confront and must solve, and partly a result of non-local learning. The mix among these sources in interpreting one's environment obviously varies between, for example, a Papuan tribesman on the one hand and an economist in the United States on the other (although there is no implication that the latter's perceptions are independent of his or her cultural heritage).

The implication of the foregoing paragraph is that individuals from different backgrounds will interpret the same evidence differently. They may, in consequence, make different choices. If the information feedback of the consequences of choices were complete, individuals with the same utility function would gradually correct their perceptions and over time converge to a common equilibrium. But as Frank Hahn has succinctly put it, "There is a continuum of theories that agents can hold and act upon without ever encountering events which lead them to change their theories."¹ The result is that multiple equilibria are possible due to different choices by agents with identical tastes.

An Institutional Matrix

The viability, profitability, and indeed survival of the organizations of a society typically depend on the existing institutional matrix. That institutional structure has brought them into existence, and their

¹ Hahn, 1987, p. 324.

complex web of interdependent contracts and other relationships has been constructed on it. Two implications follow. Institutional change is typically incremental and is path dependent.

This institutional change occurs in a world of pervasive uncertainty or ambiguity where by definition one cannot derive a probability distribution of possible outcomes -- such as is possible with decision making in the face of risk (in the Knightian definitions). This uncertainty persists because the "human landscape" is continually undergoing change -- change induced in part by non-human action (for example changes in climate, natural disasters) but primarily by the human actors themselves.

Humans attempt to reduce that uncertainty (or convert it into risk) by learning. The cumulative learning of a society embodied in language, beliefs, myths, customs -- in short the culture of a society -- not only determines societal performance at a moment of time but, in the way it constrains the choices of the players, contributes to the nature of the process through time. Humans scaffold both the mental models they possess -- belief systems -- and the external environment -- institutions. The focus here must therefore be on human learning -- on what is learned and how it is shared among the members of a society; on the incremental process by which the beliefs and preferences change through time; and on the way in which they shape the performance of economies through time.

Though one can describe the performance by innumerable statistics on its demographic, economic, technological, and institutional features, it is more important to understand the interplay between all these features that makes it work. There are three foundations of the interplay: the demography, which describes the quantity and quality of human beings; the stock of knowledge that the society possesses, which determines the human command over nature; and the institutional framework that determines the rules of the game. The demographic characteristics include not only fertility, mortality, and migration characteristics and labor force composition, but also the stock of human capital (derived from the stock of knowledge). The stock of knowledge includes not only the scientific knowledge that a society possesses, its distribution in the society, and its application to solving problems of scarcity, but also the beliefs that the society holds that influence the choices made. That stock of knowledge determines the potential upper bound of the well being of the society. The institutional framework determines the incentive structure of the society. It is the interplay between these three that shapes the

features of the economy. Very little is known about this interaction, though some limited hypotheses about parts of the interaction do exist. Self-conscious modeling of this interaction at a moment of time, much less over time, has not been part of the agenda of economists, development economists, or economic historians. But this background makes it possible to explore the process of economic change.

3. Process of Economic Change

A bare-bones description of that process is straightforward. The "reality" of a political economic system is never known to anyone, but humans do construct elaborate beliefs about the nature of that "reality" -- beliefs that are both a positive model of the way the system works and a normative model of how it should work. The belief system may be broadly held within the society, reflecting a consensus of beliefs; or widely disparate beliefs may be held, reflecting fundamental divisions in perception about the society. The dominant beliefs -- those of political and economic entrepreneurs in a position to make policies -- produce over time an elaborate structure of institutions -- both formal rules and informal norms -- that determine economic/political performance. The resultant institutional matrix imposes severe constraints on the choice set of entrepreneurs when they seek to introduce new or modified institutions in order to improve their economic or political positions. The resultant path dependence typically makes change incremental. But change is continually occurring (although the rate will depend on the degree of competition among organizations and their entrepreneurs) as entrepreneurs enact policies to improve their competitive position -- policies that result in alterations of the institutional matrix described in the previous section. The result is revised perceptions of reality, and new efforts by entrepreneurs to improve their position. The process of change is never ending. Change can also come from non-human induced changes in the human landscape, such as natural disasters. But overwhelmingly humans themselves incrementally alter the human landscape, as even the most cursory overview of human history will attest.

It is one thing to be able to provide a summary description of the process of economic change. It is something else to provide sufficient content to this description to give us an understanding of this process. What is really meant by reality? How do beliefs get formed? How do they change? What is

the relationship between beliefs and institutions?

This paper does not seek to add to the age-old question of philosophers -- What is reality? But society does have a direct pragmatic interest in what people are trying to model in their theories, beliefs, and ideologies. The pragmatic concern is the degree to which beliefs coincide with "reality." To the extent that they do, there is some prospect that policies will produce the intended result. The model is always a very imperfect reflection of how the economy really works. In some cases, the defects are fatal, as in the case of the communist economies that disintegrated in 1989.

Beliefs and the way they evolve are at the heart of understanding the process of change. For the most part economists, with a few important exceptions such as Hayek, have ignored the role of ideas in making choices. While the rationality assumption has served economists well for a limited range of issues in micro-theory, it has devastating limitations when dealing with the process of economic change. Understanding the way people perceive the world and construct explanations about it requires an understanding of how the mind and brain work -- the subject matter of cognitive science. Though far from a theory of learning that would account for how the mind works, it is least possible to outline the nature of the process.

The first level of learning entails developing a structure by which to make sense of the varied signals received by the senses. The initial architecture of the structure is genetic, but its subsequent development is a result of the experiences of the individual. This architecture can be thought of as generating an event space which makes it possible to interpret phenomena. The experiences can be classified into two kinds -- those from the physical environment and those from the sociocultural linguistic environment (Hutchins and Hazlehurst 1992). The event space structure consists of categories -- classifications that gradually evolve from earliest childhood in order to organize sense perceptions and register (through memory) the analytic results and experiences. Building on these categories makes it possible to form mental models to explain and interpret the environment, typically in ways relevant to some goal(s) (Holland et al., p. 22). Both the categories and the mental models will evolve to reflect the feedback derived from new experiences -- feedback that may strengthen and confirm the initial categories and models or that may lead to modifications. Thus, the event space may

be continually redefined with experience, including contact with others' ideas.

Learning which preserves the categories and concepts but provides changed ideas about details and the applicability of the existing knowledge is the second level of learning. Together, learning within a given set of concepts and learning which changes the structure of concepts and mental models suggest an approach to the dynamics of learning.

The belief systems that evolve from learning induce political and economic entrepreneurs in a position to make choices that shape micro and macro economic performance to erect an elaborate structure of rules, norms, conventions and beliefs embodied in constitutions, property rights, and informal constraints. These in turn shape economic performance. This "scaffolding" not only constrains the choice set at a moment of time but is also the source of path dependence. Thus when political or economic entrepreneurs seek to alter some aspect of economic performance, they make choices that are hampered not only by the standard constraints of technology and income but also by this scaffolding. The process of institutional change is intended to alter performance in a particular direction. The aggregate of such institutional changes is continually altering the way the economy works. This in turn leads to gradual alterations of the models in a never-ending process of economic change.

Throughout history humans have typically been (at least partly) wrong in (1) their understanding of the way the economy works, (2) the synthetic frameworks they construct, or (3) the policies they enact (at best, blunt instruments to serve their purposes) which produce unanticipated consequences. It is possible to view economic history as a great success story of the enormous increase in material well being which has reflected the secular growth in the stock of knowledge. But it is also a vast panorama of decisions that have produced death, famine, starvation, defeat in warfare, economic decline and stagnation, and indeed the total disappearance of civilizations. Even the decisions made in the success stories have typically been an admixture of luck intermingled with shrewd judgements and unanticipated outcomes. Take, for example, American economic history. From the earliest attempts at settlement, through the colonial era, to the perceptions leading to the revolutionary war the colonists had it, at best, half right. The Constitution, surely a classic of shrewd judgement, was aided by chance

(the events of the 1780s), luck (the boycott of the Convention by the anti-federalists), and unanticipated decisions (the development of the independent judiciary and the Marshall court).

It is important to emphasize the limits to human understanding because there is a certain amount of hubris evident in the annual surveys by the World Bank and in the writing of orthodox economists who think that now everything is clear. But it is important to understand that even if current analyses were right for one economy, they would not necessarily be right for another economy. And even if they are right today, they will not necessarily be right tomorrow. This is not to suggest that nothing has been learned about the determinants of economic performance. But the implication of this brief survey of the sequence of steps from human understanding of an economy, to the scaffolds humans erect, to the policies then enacted to alter economic performance, is that there are innumerable junctures where one can and does go wrong. Crucial junctures, critical to improving the performance of economies, are the result of the way scaffolds evolved, and policies were formed, and the way time has affected the formation of beliefs.

Scaffolds include the political structure that specifies how humans develop and aggregate political choices; the property rights structure that defines the formal incentives in the economy; and the informal constraints of norms, conventions and internally held beliefs. They have evolved over many generations, reflecting, as Hayek points out (1960), the trial and error process which has sorted out those behavioral patterns that work from those that fail. Since the experience of every society is unique, these scaffolds will differ for each economy. They constrain the number of possible choices, not only because an economy's organization is built on the foundations of its institutional structure (and therefore its survival depends on its continuance) but also and perhaps more fundamentally because the belief system, which is a complementary part of that scaffolding, tends to change very slowly. This scaffolding is what makes path dependence so important. When the scaffolding crumbles, as it did in Eastern Europe in 1989, the problems of constructing a new framework expose people's limited understanding of the process of change.

Equally crucial are the policies enacted to alter the performance of an economy. Even when there is a "correct" understanding of the economy and a (more or less) "correct" theory about its operation, the

potential policies turn out to be very blunt instruments. They consist of alterations in the formal rules only, when in fact the performance of an economy is a mixture of the formal rules, the informal norms, and their enforcement characteristics. Changing only the formal rules will produce the desired results only when the informal norms are complementary to that rule change and enforcement is either perfect or at least consistent with the expectations of those altering the rules.

Finally, time is important because it is the dimension in which human learning occurs, and there is no implication in the foregoing brief description of the process of learning that suggests that humans get it right. Indeed throughout history humans have been wrong far more often than they have been right. The rise and fall of communism in the twentieth century is only a recent illustration. It is probably correct that, if "reality" stayed constant, the feedback from the policies enacted would gradually lead to what is right, but change and therefore persistent uncertainty is the human lot -- which means people will continue to get it wrong at least part of the time.

4. Lacunae in Current Understanding

The implications of the foregoing brief outline of the process of economic change are straightforward. If the objective is to improve the long-run performance of economies, the essential characteristics of successful economics are available. The best single predictor of the growth of an economy remains its investment rate. The new growth economics literature highlights some of the specific features of successful development. What is glaringly missing from this literature is the incentive structure to realize these objectives. However, not much is known about the institutional foundations of successful development. A number of recent empirical studies have made clear the importance of the institutional matrix.² That matrix broadly comprises the incentive structure which will determine the quantity and quality of investment. What is still missing is how to get there. The key is the way path dependence will constrain the process of institutional and economic change.

The implication of the foregoing analysis is that path dependence can and will produce a wide variety of patterns of development depending on the cultural heritage and specific historical experience of the economy. Indeed, the success of TVEs (town, village enterprises -- a form of

² See Knack and Keefer, 1995 for a good summary.

organization that is neither a firm nor a cooperative) in China does not fit any preconceptions about successful institutional/organizational structures and has been a sobering reminder of how much is still to learn about the process. A description of that process in China from the enactment of the household responsibility system traces a unique path which has produced (so far) rapid economic growth (although even that success is tempered by growing problems of TVEs). Hopefully this paper will put to rest the belief in simplistic general panaceas, such as "big bang" or "shock therapy" theories, to magically overcome lack of development.

If path dependence can help to understand the variety of development patterns, it also speaks forcefully to the constraints that the scaffolds erected in an economy impose on institutional change. The historically derived constraints are supported not only by the existing organizations that oppose change but also by the belief system that has evolved to produce those constraints. The rate and direction of change will be determined by the "strength" of the existing organizations and belief system.

The demise of communism in Eastern Europe in 1989 reflected a collapse of the existing belief system and consequent weakening of the supporting organizations. Policy makers were confronted not only with the problems of restructuring an entire society but also with the blunt instrument inherent in policy changes that can only alter the formal rules and not the accompanying norms and which had only limited success in inducing enforcement of policies. The relative success of policy measures -- such as the auctioning of state assets and the reestablishment of a legal system -- in the Czech Republic compared to Russia resulted from the heritage of informal norms that made for the relatively harmonious establishment of the new rules.

One of the shortcomings of research is the lack of attention paid to the polity and the problem of aggregating choices through the political system. There are simply no good models of polities in Third World, transition, or other economies. The interface between economics and politics is still in a primitive state in theories but its development is essential to implement policies consistent with intentions.

In terms of time, if one accepts the crude schematic outline of the process of change laid out above,

it is clear that change is an ongoing continuous affair and that typically institutional prescriptions reflect learning from past experience. But there is no guarantee that past experiences will provide the material to solve new problems. Indeed, a historic dilemma of fundamental importance has been the difficulty of economies shifting from a political economy based on personal exchange to one based on impersonal exchange. An equally wrenching change can be the movement from a "command" economy to a market economy. In both cases, the necessity to restructure institutions -- both economic and political -- has been a major obstacle to development. It is still the major obstacle for Third World and transition economies. The belief system that has evolved as a result of the cumulative past experiences of a society has not equipped its members to confront and solve the new problems.

Systematically exploring the process of economic change is just beginning. The laboratory is not only human history but, particularly, what humans are learning in the ongoing efforts to improve the performance of Third World and transition economies. Though some progress has been made, there is still a long way to go.

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