HARAMAYA UNIVERSITY

SCHOOL OF AGRICULTURAL ECONOMICS AND AGRIBUSINESS MANAGEMENT

DEPARTEMENT OF AGRICULTURAL ECONOMICS

INSTITUTIONAL AND BEHAVIORAL ECONOMICS

(CAEC 510)

A Module Prepared for MSc Students of Agricultural Economics

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CAEC 510: Institutional and Behavioral Economics

Classification: Elective Course **Credits:** 2 **Semester:** 1

1. COURSE OBJECTIVES

The experience of African economies with the ideology of market liberalization since the 1980s has not been overwhelmingly positive. The process had very little impact on agricultural development and disillusionment with market-based agricultural growth strategies is setting in. It is now clear that much more than a liberal market ideology is needed to solve the problems of African agriculture. The little historical experience of countries in Africa had with market-led development provide few lessons for the future development of markets and is partly to blame for the limited success with market–led development in Africa. As a result many countries in Africa are now starting to think about a new role for government in creating the appropriate institutional framework needed for agricultural development. The new focus on the role of collective action and co-operatives are examples of this trend.

Despite this new focus there still seems to be no deep understanding of institutions and institutional change and clearly no capacity exists to address this important field necessary for development. One reason for this is the standard neo-classical paradigm in which agricultural economists are trained. As we start to debate the working of agricultural markets in developing countries and in Africa specifically, it becomes clear that the standard neo-classical economic theory fails to explain why markets are not functioning and what we need to do to improve the working of these markets.

There is thus a need to come to grips with the real problems facing agricultural policy makers and a need to provide agricultural economics professionals with a more appropriate theoretical framework and enquiry paradigm which could lead to a much more appropriate approach to agricultural policy research. It is argued that the New Institutional Economics (NIE) can provide this theoretical framework to help us understand the problems constraining the market and also help answering the ‘how’ questions of agricultural policy. As the need for the NIE framework becomes clearer we find ourselves in a situation where agricultural economists across the continent understand the limitations of standard neo-classical economic framework and liberal market ideology.

The objectives of the course are to:

- Familiarize students with agricultural and rural development challenges in Africa;
- Ensure that students understand the various elements of the NIE paradigm and theoretical framework as well as the application of the theory to solve the problems constraining agricultural development in Africa; and
- Ensure that the students will at the end of the course be able to analyze the constraints on agricultural and rural development through the application of the NIE philosophy and

thereby identifying the options/interventions for accelerating the process of agricultural and rural development.

1. **Case Studies**

   Dealing with themes through case studies, one of the above institution related theories, students attempt to explain problems of the agricultural sector of the country. The case studies should provide insight on the role of institutions into:

   - Improving market functions (grades, standards, food safety, quality, export markets, collective action, supermarkets);
   - Financial services and input markets (interlocking markets);
   - Sector organization, public goods, market and non-market coordination;
   - Reducing transaction costs
   - Improving economic activities in the rural and agricultural sector; and
   - Natural resource management;

VI Mode of Delivery

Will be contact discussion sessions on the literature. Delivery will be largely through discussion in classes where students will be expected to come prepared.

VII Assessment Methods

Students will be graded on their class participation as well as a series of written assignments and a final examination. Class participation and continuous assessment will be 20% and Term paper will make up 30% while the final exam will form 50% of the grade.

III Course Materials

Recommended Readings

Further Readings

INTRODUCTION TO THE MODULE

Millions of Africans are born, live, and die poor, hungry, illiterate and malnourished. Large majority of these people (usually more than 60%) live in the rural areas and directly or indirectly derive their livelihood from Agriculture. It is widely agreed that growth in the agricultural sector can have immense impact improving the lives of the majority. However attempts have been made to achieve sustainable growth in the agricultural sector and meaningful improvement in the life of small-holder farmers and pastoralists, the success was limited in most African countries. The agricultural sector and the rural people are faced with multifaceted and intricate, often reinforcing, problems. Despite the complexity of the problems and the unique feature of the context in African countries, past development policies attempted to solve the intricate problem using a single instrument – Market. For instance, the idea behind the economic reform through the Structural Adjustment Programs made in many African countries in the 1980s and 1990s was to '*get the market right'* – a policy prescription of neoclassical economic theory. The past attempts to solve a multitude of interrelated and reinforcing problems using a single instrument. Experiences of most African countries showed that the problems of African countries requires more than *getting the market right*. Moreover, it was also evident that *getting the market right* itself requires more than policy reforms. The lesson was that institutions matter a lot in determining not only of economic performances, but also any economic and other reforms too.

It has now become evident that institutions play important roles in determining economic performances, including any policy reforms. This require better understanding of the institutional context, and its dynamics, of African countries and its implications to the agricultural and rural developments. This in turn require qualified experts trained specifically to solve the institutional problems of the African countries. The existing teaching system largely use reference materials and text books that are prepared in the context of advanced economics. Not only the theories have been developed by economists of developed countries, the books, publications and teaching materials that are largely intended to explain the situations of advanced economies, The institutions prevailing in a given country or community are the outcomes of the interaction of cultural, social, economic, political, legal, technological, and historical situations and their evolutions. Hence, the type and structure of institutions are highly specific the context of a given society at a point in time and its historical evolution, Producing skilled and knowledgeable experts in the subject require, above all, a tailor-made and context-based teaching materials. The purpose of this module is therefore prepared to fill this teaching material gap.

To this end, this module attempt to interpret, explain and analyze the existing institutional economic theories from the context of the context of African countries in general and Ethiopia specifically. It uses examples, cases, empirical findings, problems that reflect the context of these countries. Concerted efforts are made to increase understanding of students.

In addition to this module, case studies, reference materials and other supporting teaching materials are included as a package. Though the primary purpose of the module-package is

improve teaching the course ‘institutional and behavioral economics’ at post graduate level, the module, and the supporting materials packaged with it, can be fully or partly used by other group of beneficiaries. Researchers, policy makers, undergraduate students of economics, agricultural economics or related fields, and development practitioner are expected to benefit a lot from the material.

Since the module is published under the Creative Commons, anyone is to share (copy, distribute and transmit) the work and to remix (adapt) the work.

1.1. Objective of the Module

The main objectives of the module are:

To improve teaching of the course ‘institutional and behavioral economics’ at post graduate level,

To inform policy makers about the roles and application areas of institutional and behavioral economics,

1.2. Course content

1. **Introduction**
   - 1.1 The Agricultural Development Challenge: Stylized Features
   - 1.2 What is institution?
   - 1.3 Institutions matter?
   - 1.4 Origin of Institutional Economics
2. **Institutional Economics and Neoclassical Economics**
   - 2.1 Behavioral aspects
     - *2.1.1 Knowledge problem*
     - *2.1.2 Cognition and Rationality*
     - *2.1.3 Self-interest, opportunism and altruism*
   - 2.2 New institutional economics as a complement to standard neoclassical economics
3. **Transaction Cost Economics**
   - 3.1 Transaction cost theory
   - 3.2 Transaction costs
     - *3.2.1 Information and search costs*
     - *3.2.2 Bargaining and decision costs*
     - *3.2.3 Supervision and enforcement costs*
   - 3.3 Attributes of transactions and choice of governance structures

4. **Principal-Agent Theory**

   4.1 Hidden information and adverse selection

      4.1.1 Theory
      4.1.2 Areas of applications

   4.2 Hidden actions and moral hazard

      4.2.1 Theory
      4.2.2 Areas of Applications

   4.3 Alternative Institutions to counter Market Failures

5. **The Economics of Property Rights**

   5.1 Property rights theory

   5.2 Property rights and the Coase theorem

   5.3 The characteristics of goods: excludability, rivalry and property rights

   5.4 Collective Actions

6. **The Roles of Institutions for Agricultural Development in Africa**

   6.1 Institutional environment in African

   6.2 The role of institutions for African economic development

7. **Institutions and Development: A Historical and Macro Perspective**

   7.1 How Institutions are Created (Douglas North);

   7.2 Economic Performance through time (Douglas North)

1.3. Expected Learning Outcome

Upon completion of this course, you should be able to:

- Appreciate and explain the far-reaching roles of institutions in determining economic performances of the agricultural sector;
- Identify important institutional elements constraining the development of agricultural markets and trade;
- Apply institutional economics theories to agricultural problems of developing countries specifically to African countries;
- Comprehend the institutional environments of developing countries of African countries in general and rural communities in particular and;
- Explain the implications the prevailing institutional environment to agricultural and rural development of African countries;
- Apply institutional economic theories and research models to analyze institution related agricultural and rural development problems of developing countries;
- Able to integrate institutional economic theories and concepts with the conventional economic theories; and

- Apply institutional economic theories and models to inform agricultural and rural development policies.

1.4. Prerequisites

Even if no prerequisite course is set, students are advised to have basic knowledge of Microeconomics and Macroeconomics at least at undergraduate levels. But in the CMAAE program, the course is offered after students have completed the core courses in one of the six CMAAE accredited Departments. A student must therefore have completed the following core courses applying for admission of this course:

- Microeconomics,
- Macroeconomics and
- Issues in Agricultural and Applied Economics.

1.5. Thematic Plan

Topics	Contact hours	Indep. study	Total Hours
1. Introduction	2	6	8
2. Institutional Economics and Neoclassical Economics	2	6	8
3. Transaction Cost Economics	4	12	16
4. Information Asymmetry and Institutions	3	9	12
5. Principal-Agent Theory	3	9	12
6. The Economics of Property Rights	4	12	16
7. Institutions and Development: A Historical and Macro Perspective	3	9	12
8. Case studies	9	27	36
	30	90	120

1.6. Mode of Delivery

Will be contact discussion sessions on the literature. Delivery will be largely through discussion in classes where students will be expected to come prepared.

1.7. Assessment Methods

Students will be graded on their class participation as well as a series of written assignments and a final examination. Class participation and continuous assessment will be 20% and Term paper will make up 30% while the final exam will form 50% of the grade.

1.8. Course Materials

1.8.1. Recommended Readings

- Coase, R., 1998. The New Institutional Economics, The American Economic Review, 88(2), Papers and Proceedings of the Hundred and Tenth Annual Meeting of the American Economic Association, pp. 72-74.
- Coase, R.H., 1960. The problem of social cost. Journal of Law and Economics, Vol. 3: 1-44.

- Demsetz, H. 1967. Toward a Theory of Property Rights, The American Economic Review, Vol. 57, No. 2, Papers and Proceedings of the Seventy-ninth Annual Meeting of the American Economic Association (May, 1967), pp. 347-359
- Hubbard, M. 1997. The New Institutional Economics in Agricultural Development: Insights and Challenges. *Journal of Agricultural Economics*. Vol. 48, No. 2: 239-250.
- Khan, M. H., 2002. State Failure in Developing Countries and Strategies of Institutional Reform, Draft of paper for World Bank ABCDE Conference, Oslo 24-26, June 2002.
- Kherallah, M. and J. Kirsten. 2001. The New Institutional Economics: Applications for Agricultural Policy Research in Developing Countries. *MSSD Discussion Paper No. 41.*
- Kirsten J. F., A. S. M. Karaan, and A. R. Dorward, 2009. Introduction to the economics of institutions, (Ed.) Kirsten, J. F., A. R. Dorward, C. Poulton, and N. Vink ed. Institutional economics perspectives on African agricultural development, International Food Policy Research Institute (IFPRI), Washington DC, USA.
- Nabli, M.K. & Nugent, J.B. 1989. The New Institutional Economics and its Applicability to Development. *World Development.* Vol.17, No. 9: 1333-1347.
- North, D. C., 1990. Institutions, Institutional Change and Economic Performances. Cambridge University Press.
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- Paarlberg, D. 1993**.** The Case for Institutional Economics. *American Journal of Agricultural Economics*. Vol. 75, August: 823-827.
- Poulton, C., Dorward, A., Kydd, J., Poole, N., and Smith, L. 1998. A New Institutional Economics Perspective on Current Policy Debates. In Dorward, A., Kydd, J., A. and Poulton, C. (Eds.). *Smallholder Cash Crop Production under Market Liberalisation: A New Institutional Economics Perspective.* Oxford: CAB International.
- Simon, H. A., 1955. A behavioral model of rational choice, The Quarterly Journal of Economics, Vol. 69, No. 1: 99-118.
- Stiglitz, J. E., 2002. Information and the Change in the Paradigm in Economics, The American Economic Review, Vol. 92, No. 3: 460-501.
- Williamson, O. E. 1985. The Economic Institutions of Capitalism: Firms, Markets and Relational Contracting, China Social Sciences Publishing House Chengcheng Books LTD.
- Williamson, O. E. 1995. Hierarchies, Markets and Power in the Economy: An Economic Perspective, Industrial and Corporate Change, Vol. 2, No. 1: 21-49.
- Williamson, O. E., 1979. Transaction-Cost Economics: The Governance of Contractual Relations. Journal of Law and Economics, Vol. 22, No. 2: 233-261.

1.8.2. Further Readings

- Aoki, M., 2001. What are Institutions? How Should We Approach Them? The institutional foundations of a market economy, WDR 2001/2.
- Binswanger, H.P and Rosenzweig, M.R. (1986). Behavioural and Material Determinants of Production Relations in Agriculture. *Journal of Development Studies* Vol. 22 no.3: 503 - 539.

- Bromley, D.W. & Chavas, J.P. 1989. On Risk, Transactions, and Economic Development in the Semi-Arid Tropics. *Economic Development and Cultural Change*. Vol. 37, No. 4: 719-736.
- Coase, R.H., 1992. The institutional structure of production, The American Economic Review, Vol. 82, No. 4: 713-719.
- Datta-Chaudguri, M., 1990. Market failures and government failures, Journal of Economic Perspectives, Vol. 4, No. 3: 25-39.
- Dawit Alemu & G. Meijerink, 2010. The Ethiopian Commodity Exchange (ECX): an overview, Ethiopian Pulses, Oilseed, and Spice Processors and Exporters Association (EPOSPEA), Public Private Partnership on Oilseeds and Wageningen UR, VC4PD.
- Delgado, C. 1999. Sources of Growth in Smallholder Agriculture in Sub-Saharan Africa: The Role of Vertical Integration of Smallholders with Processors and Marketers of High Value-Added Items. *Agrekon*. Vol 38. Special issue: May: 165-189.
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- Drugger, W.M. 1983. The Transaction Cost Analysis of Oliver E. Williamson: A New Synthesis. *Journal of Economic Issues*. Vol. XVII, No. 1: 95-114.
- Fafchamps, M. 1997. "Introduction: Markets in sub-Saharan Africa." World Development Vol. 25, No. 5:733-734.
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- Goetz, S.J. 1995. Markets, Transaction Costs, and Selectivity Models in Economic
- Goetz, Stephan. 1992. A Selectivity Model of Household Food Marketing Behavior in Sub-Sahara Africa. American Journal of Agricultural Economics, 74(2): 444-452.
- Hayami, Y., 1988. "Community, Market and State." (In A. Maunder and A. Valdes, (Eds), *Agriculture and Government in an Interdependent World. Proceedings of the 20th International Conference of Agricultural Economists, Buenos Aires, Argentina, 24th-31st August)*. Aldershot: Dartmouth Publishing.
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- Hobbs, J.E., 2003. Information, incentives and institutions in the Agri-food sector, *Canadian Journal of Agricultural Economics*, Vol. 51: 413–429.
- Holloway, G., Nicholson, C., Delgado, C., Staal, S. and S. Ehui. 2000. Agro-Industrialization through Institutional Innovation Transaction Costs, Cooperatives and Milk-Market Development in the East-African Highlands. *Agricultural Economics.* Vol. 23: 279-288.
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- Minot, N. 1999. *Effect of Transaction Costs on Supply Response and Marketed Surplus*: - Omamo, S.W. 1998. Transport Costs and Smallholder Cropping Choices: An Application to Siaya District, Kenya. *American Journal of Agricultural Economics*. Vol. 80, February: 116-123.
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- Poulton, C., J. Kydd and A. Dorward, 2006. Overcoming market constraints on Pro-Poor agricultural growth in Sub-Saharan Africa. *Development Policy Review*, Vol. 24, No. 3: 243-277.
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- Williamson, O.E. 1979. The Transaction Costs Economics: The Governance of Contractual Relations. *Journal of Law and Economics*. Vol. 22, October: 233-261.

1.9. Case Studies

Dealing with themes through case studies, one of the above institution related theories, students attempt to explain problems of the agricultural sector of the country. The case studies should provide insight on the role of institutions into:

- Market access (grades, standards, food safety, quality, export markets, collective action, supermarkets);
- Financial services and input markets (interlocking markets);
- Sector organization, public goods, market and non-market coordination;
- Rural institutions: cooperative and farmers' organizations, land tenure, sharecropping, contract farming;
- Regulation;
- Natural resource management;

1. INSTITUTIONS

1.1. Introduction

This chapter attempt to introduce the basic concepts of institutions and institutional economics. It begins with discussing main challenges the development of agriculture and rural areas in developing countries with particular emphasis on African countries. Given these challenges African agriculture is currently facing, the chapter attempt to demonstrate the limitations of alternative mainstream economic thoughts in providing sufficient answer to these challenges. The idea here is to illustrate the need for an alternative economic paradigm that can explain the specific challenges African economies are facing. It specifically focus on the potential roles institutions and institutional economics can play in understanding the problems of the agricultural sector and the economy as a whole. To facilitate future discussions, this chapter provide alternative definitions of institutions that are suggested by various scholars, mainly in the field of economics. As any social science terms. providing a single universally accepted definition is usually difficult. Thus, instead of providing a single definition, the material discusses important elements embedded in each alternative definitions. In order to help you to make sense of institutions, we provide you some key elements of institutions. The chapter then briefly discuss how institutions matter in determining economic performances. Note that this is just to help you understand the essence of institutions. In-depth discussions on this issue will be made in the last two chapters. The chapter finally attempt to provide an overview of the origin and evolution of New Institutional Economics (NIE).

1.2. Learning objective

Upon completion of this introductory chapter, you will be able to:

- Appreciate the critical challenges of agricultural and economic development in Africa;
- Identify key limitations of mainstream economics in explaining the specific contexts of African economies
- Explain how institutions matter in determining economic performances of African economies;
- Identify institutional elements that are important for the development of agricultural sector; and
- Outline the origin and evolution of institutional economics.

1.3. Thematic plan

Topics	Contact hours	Indep. study	Total Hours
1.1 The agricultural development challenge: stylized features	0:30	1:30	2
1.2 Institutions and Institutional facts	0:30	1:30	2
1.3 Do institutions matter?	0:30	1:30	2

1.4 Origin of Institutional Economics	0:30	1:30	2
Total	2	6	8

1.4. The Agricultural Development Challenge: Stylized Features

Before you read the topic, please try the following activities.

✍Activity 1.1

1. Compared to other economic sectors, what makes Agricultural sector special? List the special features of agricultural sector in general.
2. Compared to the agricultural sector of advanced economies, what are special about the Agricultural sector of African economies? List the special features of agricultural sector in African context.
3. What are the implications of these unique features to the development of the sector? Discuss with your colleague.
4. What problems are constraining development in the rural areas? Discuss.

Millions of Africans are born, live, and die poor, hungry, illiterate and malnourished. Large majority of these people (usually more than 60%) live in the rural areas and directly or indirectly derive their livelihood from Agriculture. At least in the short run, the growth of the agricultural sector could necessary for the improvement of the life of the rural population. But unfortunately, the per capita growth of Agriculture over the past decades are generally disappointing. In terms of policy directions, agricultural and rural development has remained the top priority agenda of most African countries. Particularly, agricultural development has been the primary objective of Ethiopian economy over past half of the 21st century. The first sentence of any development policies of Ethiopia surely start with such sentences like "agriculture is the backbone of Ethiopian economy", "agriculture is the main driver of Ethiopian economy", "agriculture is the mainstay of Ethiopian economy", or " agriculture the key contributor of Ethiopian economy: in terms of its contribution to GDP, export, employment/livelihood, derived demand and the like".

Yet, the political rhetoric that attempt to demonstrate the policy attentions given for agricultural sector and the rural people are much far cry from the concrete measures taken to improve the sector and the life of the rural people. This can be evidenced by the usually low and even declining relative share of the sector in the total public investment. African political leaders are rather reluctant to take tangible policy measures that are critical for the growth of the agricultural sector and for the transformation of the rural areas. Many African leaders use the policy rhetoric to attract foreign aids and to justify the outcome of their manipulated political elections. Political leaders claim that 'Since their leadership target the vast majority (the rural population), it is a proof for obtaining the majority vote repeatedly' – a fallacious argument that use a false premise to support a spurious outcome.

Assignment:

List roles the agricultural sector plays in the economies of most sub-Saharan African countries? By taking one sub-Sahara African country and one advanced country, compare the role of agriculture on the following indicators:

- Its contribution to the GDP
- Its contributions in the export earnings
- In generating employment opportunities
- Deriving demand for other sectors
- Others

In fact, agriculture play a key role in the economies of most African countries. In terms of the standard economic indicators, agriculture contribute a lot to gross domestic product (GDP), and foreign exchange earnings, it employs the vast majority of the population, and it supplies food to the majority, service sector. Apart from these direct contributions, growth in agriculture can have a lot of contributions in stimulating other sectors of the economy through a variety of multiplier effects – increasing the demand for outputs of other sectors, increasing the supply of raw materials for other sectors, increasing investment capital, to mention few.

Before discussing the problems constraining the agricultural sector in sub-Sahara Africa, we briefly discuss problems that are special to the agricultural sector. Compared to other sectors such as service and manufacturing sector, agricultural sector suffer from special problems:

- Nature dependent and highly vulnerable to the vagaries of nature;
- Volatile price due to inelastic demand and supply rigidity;
- Highly perishable and bulky;
- High infrastructural requirement – their production require large areas of land ;

In sum agricultural businesses are highly risky and less profitable and hence less attractive to entrepreneurs. These are the main reasons developed countries provide heavy subsidy to the sector.

Reading assignment

To understand the implications of these unique features of agriculture, you are strongly recommended to read microeconomics texts books.

A widely accepted objective of agricultural development efforts in Africa is to achieve sustainable intensifications through the introduction of improved technologies and practices such as fertilizer, improved seed, pesticide, improved breed and feed, etc. Despite the efforts made to achieve these, the results were generally less successful for various reasons. First, the efforts lack continuity and often done in piecemeal way. Second, when efforts were made, they lacked synergy and integrity among programs and projects. Third, a daunting set of generic and often reinforcing problems inhibit the performance of programs. These problems include poor infrastructure (roads, electricity, telecommunications, other service facilities,

etc.); poor human health; high illiteracy, thin markets for agricultural inputs, outputs, and credit; weak economic and political institutions.

Nested within these general challenges are a set of problems specific to agriculture, particularly to small-scale agriculture are:

- Small-scale, subsistent, traditional and nature dependent production system;
- Weak property rights system:
  - Poorly defined property rights system.
  - Weak justice system that fail to protect property of farmers against theft, expropriation, pillage, and the like;
  - Weak institutions to enforce contracts and agreements.
- High transaction costs in the output, input and financial markets such as credit and insurance markets; (Note that transaction cost issues will be discussed in detail in chapter 3).
- Diminishing and degrading natural resource base coupled with the changing climate make the already risky production system more risky;

In addition to agriculture specific problems, rural areas also face a number of unique problems:

- The scattered distribution of the rural population make the unit costs of providing various services such as financial, education, health, communication, etc. services very high – unaffordable to the small scale farmers and unattractive to private investors;
- Fragile and weak states;
- African producers face unnecessary competition with "food aid";
- Additional constraints faced by women because of their low level of *de facto* and *de jure* freedom to own resources (land and others) and to function.

Though the above issues are straightforward, two issues need further discussions. You are therefore required to discuss in group on the following points.

✍Activity 1.2

1. Argue in favor and against the overall impacts of "food supplied from developed countries in the form of aid". What policy changes do you suggest to minimize the possible adverse impacts?
2. Try to explain the reasons why prices of agricultural commodities are generally more volatile than most non-agricultural commodities and services.

Developed countries supply considerable amounts of food to African countries in the form of food aid. Though the intension of food aid is to save the lives of Africans, it can have adverse effects on producers. Setting aside other long term psychological effects of food aid like dependency syndrome, it crowds out domestic markets and depress prices of food products.

This not only affect agricultural production, its adverse effect transmits into non-agricultural sectors.

From the institutional point of view, one area need to be discussed in further detail. Agricultural output markets are thin in the rural areas of most African countries. Especially, input markets, labor markets and financial markets are even thinner or non-existent compared to output markets. Given these facts, discuss the following by taking insurance markets as a case.

✍Activity 1.3

1. Why insurance markets are missing in the rural communities? Approach the problem by trying to explain social, infrastructural, legal, technological, etc. aspects that raise the costs of market exchange.

The reality in most Africa is that ***large number*** of ***small-scale*** agricultural producers are ***scattered over*** a wide ***inaccessible*** rural areas**.** On top of this, the formal legal system is weak and most contracts, property rights and other legal issues are poorly enforced.

Read the following picture painting about a rural context and do activity 1.4 in group.

Case 1 – Context

Suppose you are manager of a private financial firm – small bank. There are farming communities located in hinterland (far away from a city). In these communities 1000 households are evenly distributed over 40 small villages that are located far apart from each other. The main livelihood of the farmers is production of cereal crops. But most farmers also keep few livestock in order to support crop production. Assume in each village there are eight to ten households who are willing to borrow small amount of money, say each two to three thousands Birr, in order to finance some productive activities. Some want to pay in every season, others every week and others every month. Assume the infrastructural situation is fair. The social structure of the communities are such that each village is occupied by two to three extended families. The formal legal system is very weak to enforce contracts and property rights.

✍Activity 1.4 – Group Work

Given the hypothetical context described in the box above, what cost implications would the context have on your firm:

- Variable operation costs;
  - Loan assessments: the behavior of borrower farmers, wealth status, potential collateral, profitability of their proposed activities, and so on,
  - Contract signing and loan disbursement,
  - Monitoring every borrower,
  - Loan recovery,

- Fixed administrative costs – loan officers, manager, capital consumption;
- Operation costs – transport, stationery, and others;
- Costs of fund (the interest rate you pay to savers);
    - Risk costs - considering the social and legal environment, estimate the potential costs associated with arrears and defaults,
- Suppose, the bank can earn a profit of 3% by lending the same amount of money to an entrepreneur in the city.

Divide into groups each constituting 3-4 students. First list down the cost items for each of the above categories. Then, using your best guess, estimate the costs. Based on these estimates, what will be the minimum interest rate that the lender must charge? Can their investment justify the cost of borrowing? To judge this, discuss about the potential rate of return from their proposed investment. Also consider the marketing costs farmers will have to incur in doing their business.

It is evident that the scattered settlement pattern, the small size of individual loan, the social environment (the kinship tie, power relationships, the culture, the belief and value systems), the legal system, the property right regime, the enforcement capacity of private (compared to government) financial firms, and so forth have all implications in raising unit costs of providing loan.

It is evident that the above costs will be even higher if the road and communication network is poor as in most rural areas of African countries.

✍Activity 1.4 – Individual activities

Now, modify the above hypothetical context. Imagine that the area is occupied by pastoralists. Identify the special features of pastoralists that pose additional challenges (and opportunities if any) in providing credit services.

The unique features of pastoralists: their mobile nature, their limited access to market and infrastructural services, the harsh environment they are living with, the narrow business opportunities, etc. pose additional challenges in the credit market.

In sum, complex of interrelated factors (social, physical, technological, and institutional factors) , raise the unit costs of credit and insurance services. But these same factors that caused the costs of borrowing to be high also limit the potential returns from investment activities by excessively raising the transaction costs in the input and output markets. This market problems coupled with intricate problems associated with agricultural productions further limit economic activities in the rural areas.

Note also that high borrowing interest rate can in turn raise the risk costs associated with arrears and defaults. When a borrower borrow at high interest rate, it becomes more and more difficult to repay his/her debt. In sum, the very high interest rate leaves individual farm

households with only very few business opportunities (if at all exists). The overall outcome of the context will be that no private financial firm can provide credit service.

Assume, the profitable interest rate for the firm is very high, say 120% per annum. But for the farmers to be profitable at this very high interest rate, the business environment should be such that that offers a rate of return greater than 120%. For many reasons it is very difficult to find an agricultural activity with such high rate of return.

The above discussion and examples depict that the markets in rural areas are compounded by complex problems. These weak or failed markets in turn inhibit economic and technological development. The result will be a low-level equilibrium trap.

1.5. The meaning of Institutions

Before you read the topic, please try the following activity.

✍Activity – Self assessment

1. Write in a piece of paper the meaning of institutions?

Like many terms in the areas of social sciences, there is no universally accepted definitions. Institutions are different from organizations. The meaning of institution in sense of economics is much wider, complex and abstract than its literally known meaning.

Definitions of institutions from the perspective of Old Institutionalists

Institutions are "settled habits of thought common to the generality of men." (Veblen 1919)

Institutions are understood as essentially “collective action in control of individual action” (Commons 1934, 69).

Institution are "way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people." (Hamilton 1934)

Notably, in the "old" institutionalism, the concept of habit plays a central role both in its definition of an institution, as in its picture of human agency.

Institutions from the perspective of New Institutionalists

Institutions are “the humanly devised constraints that shape human interaction” (North 1990).

This definition seems to exclude conventions, habits and even some norms that are not the product of human **design** but that just arise autonomously. To include norms and conventions, North provide an alternative definition:

Institutions are “the rules of the game” (North 1994)

According to Douglas North, the rules provide a framework of incentives that shape economic, political, and social organizations. Institutions are composed of

1. formal rules (for example, laws and constitutions),
2. informal constraints (conventions, codes of conduct, and norms of behavior), and
3. their enforcement.

Rules need to be enforceable. Enforcement can be carried out by third parties (law enforcement, social ostracism), second parties (retaliation), or by the first party (self-imposed codes of conduct). Rules also affect beliefs and preferences and provide signal for agents to uncalculated action.

Ostrom (1990) provides a similar definition:

Institutions refers to the rules, norms, and strategies used by humans in repetitive interactions

According to World Bank (2002)

Institutions are 'rules, enforcement mechanisms and organizations'.

Two key terms in the above definitions need to be clarified: rules and norms.

Rules refer to shared prescriptions (must, must not, or may) that are mutually *understood and enforced* in particular situations in a predictable way by agents responsible for monitoring conduct and for imposing sanctions.

Norms are considered to be shared prescriptions *known* and *accepted* by most of the participants themselves. They involve intrinsic costs and benefits rather than material sanctions or inducements. Social norms such as "customary law" can in some cases be superior to administrative or judicial dispute resolution among people with ***close social ties***. Since social norms effectively work among member of a closed social group, they inherently lack universality.

The adherence of rules is largely due to explicit enforcement while adherence of norms is largely due to acceptance. Rules and norms thus differ by virtue of the different ways they influence behavioral patterns.

Note that rules that are not *enforced* or norms that are not *adhered to* cannot be considered as institution. That is we only refer to *rules-in-use* rather that *rules-in-form*. For instance, laws about child labor will be considered as institution in so far as it shape the behavior of actors in the labor markets. Similarly, those norms that often prevail in the public rhetoric as embodiment of a specific community may not pass critical scrutiny. It is thus crucial to scrutinize the extent to which the said norms orders social interactions.

In the case of food products, for example, even if rules regarding food safety, grades, and standards are specified in regulations, they cannot influence the behavior of agents in the food market if they are not enforced by a relevant organization.

Generally, institutions enable ordered thought, expectation, and action by imposing form and consistency on human activities. Institutions both constrain and enable behavior. The

existence of rules implies constraints. However, such a constraint can open up possibilities: it may enable choices and actions that otherwise would not exist.

In addition, it is important to understand the *boundaries* of rules and norms. Norm that apply in the interaction between members of *a group* may apply in the interaction between members and non-members in an equal and similar way. For instance, a community may have a norm that consider thieving from one's own community member as bad behavior (and hence the community ostracizes it. But that same community may have also have a norm that consider that same action (theft) as an acceptable act or even a heroic act when the action is done on member of another community, especially from *rival community*. The same action may not even carry the same meaning. Thus, behavioral regularities have to be seen within the framework of relevant social groups.

The other point is that distinctions about rules are made as formal and informal.

Formal rules are consciously designed by humans and often codified in written form – examples are constitutions, laws and regulations. They are also often enforced by some external authority. The police and the courts, for instance, enforce the rule of law. Enforcement requires enforcing organizations. The rules, the enforcement mechanisms, the organizations and the way these influence behavioral patterns together are considered as *formal institutions.*

Informal rules evolve spontaneously and unintentionally over time through human interaction, and take the form of unwritten conventions, routines, customs, codes of conduct and behavioral norms (Menger 1963). For instance the norms to honor promises, to protect private property, or to speak Somali in Somalia can be considered as informal rules. The ways these informal rules are adhered to and their effect on behavioral patterns can be considered as *informal institution.* Generally, non-compliance with informal rules is sanctioned through decentralized, spontaneous social feedback.

Perhaps the following key features of institutions help you to understand what institutions are:

- All institutions involve the interaction of agents, with crucial information feedbacks.
- All institutions have a number of characteristic and common conceptions and routines.
- Institutions sustain, and are sustained by, shared conceptions and expectations.
- Institutions have distinct social boundaries in which they effectively work.
- Unenforced rules are not component of institutions.
- Institutions generally are thought to serve collectively valued purposes but sometimes institutions may exist without collective intentionality e.g. merely by virtue of shared conventions and habits or by virtue of sustained enforcement by certain groups;
- Although they are neither immutable nor immortal, institutions have relatively durable, self-reinforcing, and persistent qualities.
- Institutions incorporate values, and processes of normative evaluation. In particular, institutions reinforce their own moral legitimation: that which endures is often-rightly or wrongly-seen as morally just.

Economic institutions

Economic institutions are a set of constraints that govern the relations among individuals or groups in economic activities. The economic activity could be production, allocation, distribution or exchange. Economic institutions make up the economic system – the framework that regulates economic activity.

Economic institutions as understood as proving the incentive structure that encourage agents to behave in certain way instead of other way. Institutions are, therefore, critical to determining economic performance by influencing the cost of production, the mode of allocations and the costs of transactions.

They may be broadly grouped into two categories: those that define the forms of ownership of the means of production, and those that define the mechanisms for resource allocation and co-ordination of economic activity. *Markets* can thus be considered as one form of institutions coordinating economic activities.

In the economic exchange of goods and services, then, institutions act as a set of constraints that govern the relations among individuals or groups in the process of economic exchange. For instance, institutions facilitate sharecropping economic activity by create stable and predictable behavioral patterns by providing set of constraints and incentive structures. Institutions thus help human beings to form expectations of what other people will do. Markets are only one type of social device for settling the terms of transactions.

Institutional economics offers a theoretical framework for studying *institutions and organizations* prevailing in an economy and the way these institutions emerge, evolve and impact the behavior of individuals.

Institutions vs. Organizations

These two terms are often used interchangeably in everyday language. In the context of institutional analysis, however, institutions are complexes of rules, norms and behavioral patterns. Organizations are made up of groups of individuals bound together by some common purpose to achieve certain objectives. Examples of organizations include political bodies (political parties, a city council, a regulatory agency), economic bodies (firms, trade unions, family farms, cooperatives), social bodies (churches, clubs, athletic associations), and educational bodies (schools, universities). The complex of formal rules, regulations, code of conducts, norms, conventions, etc. that determine the behavioral pattern of actors in these organizations could be thought as institution. But institution go beyond the boundary of the organization.

Although there is a great deal of overlap between institutions and organizations, many cultural and market institutions do not have a corresponding organization, and certain organizations may exist "on paper" only and have not been fully institutionalized through the creation of accepted rules. If institutions are *the rules of the game,* organizations and their entrepreneurs can be thought as *the players of the game.*

Institutional framework determine the type of organizations that come into existence. That is if the institutional framework rewards piracy then piratical organizations will come into

existence; and if the institutional framework rewards productive activities then organizations—firms—will come in to existence to engage in productive activities. If the institutional framework incentivize distributive activities, then organizations that perform that distributive activities will come into existence.

Institutional environment

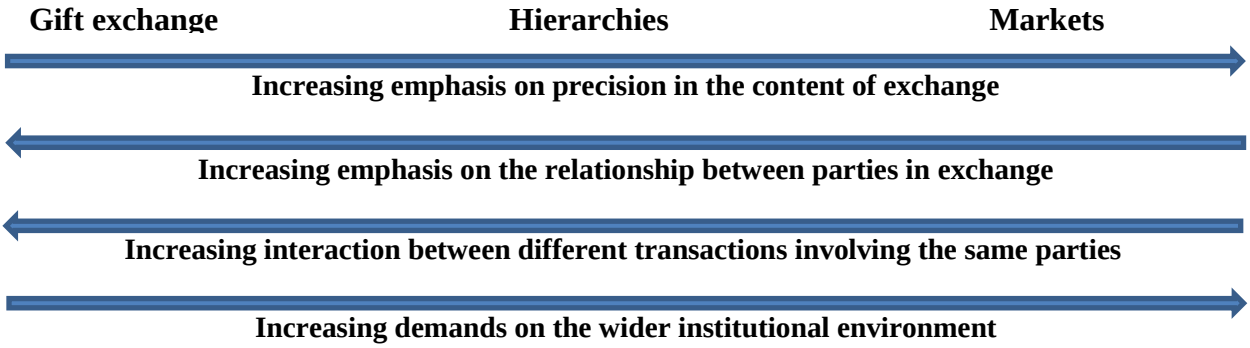
Institutional environment is a broader concept that shows how the complex interaction of institutions (formal and informal) describe property rights, enforcement mechanisms, human behaviors, and power relations in an economy. It also include includes beliefs, such as religions; norms, such as trust and lawfulness; constitutionally determined government structures; and legal systems. Three evolving structures can be identified:

i. formal economic institutions and rules (the political dimension);
ii. culture, values, and conventions (that give sense to economic actions, define what is good and great, the determine preferences and value systems, and supply common knowledge for facing the uncertainty of economic behavior); and
iii. social networks (density and forms of the networks, and the relative position of each economic agent in the network).

Institutional (contractual) arrangements

Describe the sets of rules and structures governing the allocation and exchange of resources through specific transactions. It describes how a given economic activity is arranged. Three broad categories of institutional arrangement in the exchange process can also be distinguished—namely *gift exchange, hierarchies, and markets*—with many hybrid forms combining elements from each so that the distinctions among these forms are often blurred.

If one put these three forms of institutional arrangements along a continuum, these three forms can differ in many ways as described in the figure below.



Gift exchange is based on shared values that stress shared responsibilities in social groups with deliberately imprecise terms of mutual obligations that are heavily reliant on investment in social values and social capital. Parties are involved not just in a single exchange but in many interrelated and interacting economic and non-economic activities. These kinds of exchange institutions are widely observed at early stage in the economic development. They are also observed in collective and 'closed' society that are dominated by informal rules.

Hierarchies use organizational command and control to allocate resources. Hierarchies are the basis for operations by governments, parastatal agencies, most NGOs, and anything other than the smallest private firms.

Market transactions usually have more precise (in terms of quantity, quality, location, and time) terms of exchange than do the other two forms of exchanges. Market transactions involve little (if any) social interaction among parties.

1.6. Institutions matter?

Effective institutions of economic exchange play the following role: coordinate exchange, facilitate low cost exchange (transaction costs) and provide the necessary incentives for agents.

1. *Coordination roles* – institutions coordinate exchange at several levels. At its most basic level, coordinated exchange involves the reliable bringing together of buyers and sellers.
2. *Facilitative roles* – institutions facilitate efficient exchange by reducing information problems and by limiting opportunistic actions. The idea is as transaction costs increases, the potential gains from economic exchanges declines and hence economic activities decline. This issue will be dealt in detail in chapter 3 – transaction cost economics
3. *Allocative roles* – institutions providing the incentive structure affect the pattern of allocation of economic resources. If, as mentioned earlier, the institutions provide incentive to piracy, more resources will be devoted to capture the economic gains from piracy. If on the other hand institutions make production a profitable activity, then it provides agents to invest their resources on productive activities. If institution (the rules system, the belief, culture, etc.) enforce and protect private property rights, then agents will have the incentive to accumulate private property which affects the extent of economic activity, saving, investment and so many other economic variables.

Activity

Suppose the institution of property rights in Ethiopia is such that it provides strong protection to intellectual property rights by granting an inventor exclusive rights to prevent others from commercially making, using, selling, importing, or distributing a patented or copy-righted invention or original work without the permission of the inventor or the creator. Similarly the institution grant a similar exclusive copyrights to creator of original work. What implications these would give on resource allocations and economic activities. *Explain its implications by taking plant breeding activity as a case.*

Agricultural development require the development of institutions that incentive economic activities, that reduce costs of transactions, that protect and enforce property rights and that coordinate management of public good investments. In sum, institutions matter for economic development.

In the past, development was conceived as a matter of investment on infrastructure, education, and technology dissemination. Though these investments are necessary, cannot bring the intended effect on economic development if institutions fail to provide the necessary incentives structure, if they fail to protect and enforce property rights and if they fail to reduce transaction costs. The question to most developing countries is then *'how to get institutions right'*. Unfortunately, getting institutions right is now an easy task. It is not something that can be achieved in an overnight campaign. Rather it requires continuous efforts and results of evolutionary process. It is not something that can be achieved just by government intervention. It rather require the commitments of all actors. It is not something achieved by through intervention on a given organization or sector. Rather it require overall organizational, social and cultural transformation. In a nut shell, there is no short cut to get institutions right. But the good news is, once institutional change begins, the change is then incremental.

1.7. Origin and Evolution of New Institutional Economics: Overview

In the past, neoclassical economics was the dominant economic theory. This theory assumes that markets provide the necessary incentives through the forces of demand and supply. This theory implicitly assume as institutions to have no role or as they play only frictional roles. However many influential papers showed the role of institutional aspects to economic issues, the concept of institutions had not taken root in the field of economics until recently. The concept of institutions in the field of economics in particular has long history, at least since Velben (1910). But it has not found a theoretical foundation until the influential works of Coase "The Nature of the Firm" (1937) and "The Problem of Social Cost" (1960).

The concept of transaction costs is the foundation of **New Institutional Economics.** The idea is costs of transactions determines what goods and services are produced and the capacity of any economy to take advantage of **the division of labor and specialization** – the two key concepts of economic theory since Adam Smith. Thus, transaction costs profoundly influence not just individual firms but the *size and activities of the entire economy*. But in addition to the concept of transaction costs, two other concepts are also central to NIE: the concepts of property rights and contracts.

The main contribution of NIE to the field of economics are:

- Its stress on rules and norms,
- Its explicit consideration of socio-cultural elements in the explanation of economic evolution, and
- Its openness towards interdisciplinary approaches and towards case studies and other less mathematical methodologies.

It is also important to note that NIE is not a substitute for other fields of neoclassical economics. These economic theories are still important. Institutional economics incorporate empirical, comparative and historical elements to make neoclassical economic theories more relevant to real world economic problems. But NIE, when compared to other economic theories, it has special features. One of the special feature of NIE is it encourage multidisciplinary approach as it recognize the relevance of social, historical, political and

cultural aspects in explaining economic problems. It thus attempt to use theories from other fields of studies such as sociology, history and political sciences in understanding economics. Yet theories from these fields of studies have not been well-integrated to form a clearly structured theory. NIE is in many ways a still decentralized field of inquiry. Indeed in some ways new institutional economics is still more of a movement than a field.

In addition, NIE economics has made modifications on the neoclassical theories. It keeps the self-interest behavioral assumption which is the foundation of mainstream economics but made some modifications to it to allow deviations from this assumption.

There are two approaches to new institutional economics: one pioneered by Williamson based on organizational theory and the other by North based on historical and evolutionary approach. While the first argue how different governance structure emerge to economize transaction costs, the second show how institution evolve and how their evolution determine the economic performances of countries.

Assignment

Reading the two books listed below are crucial for understanding institutional economics in general and the problems impeding the development of African countries. You are thus required to write a short review (not more than 4 pages) of the two influential books. First summarize the central arguments of the books and review their theoretical contribution in explaining economic development problem of especially sub-Sahara African countries. The paper must be submitted to the instructor.

North, D. C., 1990. *Institutions, institutional change and economic performance*. Cambridge University Press, pp. 1-152.

Williamson, O. E., 1995. *Hierarchies, markets and power in the economy: An economic perspective*, Oxford University Press. pp. 21-49.

1.8. Summary

This chapter attempted to introduce institutions and institutional economics. It first started with the potential roles agricultural sector play to the economic development of sub-Sahara African countries. It identified the roles of agriculture in providing employment opportunities and the resulting improvement in the welfare of the vast majority of population, its contribution to the total product of the country (GDP contribution), its contribution to the export sector, its contribution to the development of other sectors (by supplying inputs to other sectors and by creating demand for the products of other sectors).

We have discussed the complex problems surrounding the agricultural sector and constraining its development. Of the various problems discussed, institutions play important roles in explaining the agricultural development problem of sub-Sahara African countries.

Given these backgrounds, we have discussed the meaning of institutions. You have noted that, as any other social science terms, there is no generally agreed single definition of institutions. The definition in the old institutional economics emphasize habits and customs

and the underlying way of thoughts. New Institutional Economists define institutions generally in terms of rules and norms that structure interaction of people.

Rules, norms, conventions, codes of conduct, custom, and the like play important roles in explaining institutions. But rules and norms are particularly emphasized in the discussions of institutional economics. While both rules and norms refer to shared prescriptions, they differ in the way they are realized. Rules are understood and enforced; norms are known and accepted.

Economic institutions are a set of constraints (rules, norms, convention, etc.) that govern the relations among individuals or groups in economic activities. ***Institutional economics*** offers a theoretical framework for studying how individuals respond to the set of constraints (institutional and resource) in their choice decisions and how these evolve.

Institutions and organizations are different. While institutions can be thought as t*he rules* of the game, organizations can be thought *as player* of the game.

Note also the difference between institutional environment and institutional arrangement. Institutional environment refers to the complicate relationship between various institutions in the economy, institutional arrangement refers to the institutional structure governing a specific transaction: exchange, allocation and distribution transactions.

Institutions have three key roles in economics: allocative, facilitative and coordination roles. The performance of an economy as a whole or a given activity then depend on the efficiency of institutions to perform these roles.

The origin of the concept of institutions is old. But the institutional economics gained wider acceptance since recently due to the contribution of Coase and others. Transaction cost has provided the conceptual foundation for the New Institutional Economics. Yet, institutional economics remained a crude theory.

1.9. Question for review

Identify key challenges that are special to agricultural sector in the context of sub-Sahara African countries.

Compare and contrast the risks and uncertainties surrounding the agricultural and manufacturing sector.

List the main roles of economic institutions and explain their role in determining phenomena.

List the three concepts that play central in NIE.

List the three main contributions of NIE

1.10. References

Hodgson G. M., 2006. What Are Institutions? Journal of Economic Issues,. XL(1): 1-25.

Searle, John R., 2005. What is an institution?, Journal of Institutional Economics (2005), 1: 1, 1–22

2. INSTITUTIONAL ECONOMICS AND NEOCLASSICAL ECONOMICS

2.1. Introduction

This chapter extends the previous introduction by going into the basic elements defining institutional economics as a paradigm in the field of economics. In this line, it attempts to discuss the behavioral aspects that depart institutional economists from neo-classical economists. In addition, the chapter also discuss the contribution of NIE in broadening our understanding of economics and in addressing real economic problems.

2.2. Learning Objective

Upon completion of this introductory chapter, you will be able to:

- Differentiate between neoclassical economics and NIE; and
- Describe the key behavioral assumptions of neoclassical economics;
- The modifications in behavioral assumptions in NIE
- Identify the key elements of NIE;
- Explain main contributions of NIE in explaining real economic problems.

2.3. Thematic Plan

2.4. Behavioral aspects

Economics is thought as the theory of choice. It studies how agents behave in response to changes in economic incentives. Behavioral economics is then the study of the key behavioral attributes governing the choice decision pattern of people. The primary focus of the behavioral economics is to understand the constraints with regard to time, information, and cognitive abilities people face when they make choice decisions. In addition, it also attempt to understand the motives driving the preference of people and the circumstances that changes preferences. While neoclassical economics takes a stringent behavioral assumptions as a starting points, NIE recognize from the outset the limitations of these behavioral assumptions and attempt to explain behavioral patterns within the framework of institutions.

Behavioral Patterns in the Neoclassical economics and NIE

Neoclassical economics takes the following assumptions as a starting point. It begins by assuming decision makers to have perfect knowledge. It also assumes to self-interested rational individuals attempt to maximize their utility.

Neoclassical economics uses an ideal perfect competition as a benchmark against which to develop and extend the theories to consider real world situations and problems. The first step to understand neoclassical economics is to understand the core assumptions of perfect

competition. The next step will then be to question whether one or more of these core assumptions do hold in real world situation or not.

Core assumptions of the perfect competition model are:

- *Profit and utility maximization*
- *Perfect information*
- *Homogenous products*
- *Ease of entry and exit*
- *Large numbers of firms and buyers (price takers)*
- *No production externalities*
- *No economies of scale*
- *Complete set of markets*

Assignment

For each of the above assumption:

A. Explain what the assumption is intended to describe (3-5 lines)
B. Provide real world market or economic agent (if any) that approach to each assumption.
C. Provide the best real world example where the assumption doesn't clearly hold

The major thrust of neoclassical economics has always been the extension of its analysis to address conditions in which some of these assumptions do not hold. Thus, a number of theories have attempted within the neoclassical economics framework to relax these stringent assumptions. All these theories developed in the framework neoclassical economics are intended to consider real world situations by relaxing one or more of these stringent assumptions.

Other market structures (outside competitive market) such as monopolistic competition oligopoly, duopoly, monopoly are all to relax the stringent assumptions underlying the perfect competitive markets. Game theories (to analyze the outcomes of the interaction of few agents); the concepts of externalities and public goods (that arise due to the difference between social and private costs and benefits); risk and uncertainties; the concept of information asymmetry (that arise due to information balance between agents); and others moral hazard and adverse selection problems are all attempts to explain real world economic phenomena by relaxing the assumptions underlying the perfectly competitive market.

In a static neoclassical economic theories, institutions are largely taken as given. Even dynamic analyses, institutions are considered as to have only frictional role. The neoclassical tradition places less emphasis on institutions but focuses on the analysis of efficiency, often abstracting from particular institutional contexts. One of the contribution of NIE is explicit consideration of institutions as they play a central role in explaining real world economic problems.

NIE explore institutional structures at different levels and examine efficiency and welfare with respect to these structures. NIE draws on the theoretical and empirical tools of neoclassical economics in analyses of both the evolution of institutions and their effects on

economic behavior and outcomes in different circumstances. But, in addition to this, it is also important to note that NIE draws on a variety of schools of thought in other social sciences.

We structure our discussions of the various behavioral issues under the following sub-topics:

Knowledge problems, cognitive burden and rationality; self-interest and opportunism and altruism and review of game theories.

2.4.1. Self-interest, opportunism and altruism

The basic behavioral assumption in the neoclassical economic theory is that agents are self-interested. That is the intrinsic motive driving economic agents in their decision making is self-interest. But this does not mean egotistic behavior – a behavior that puts the self-first but consider oneself better and more important than others. Self-interest has no negative or positive attitudinal implications about others. It only means that when agents make decisions, they only choose that action that maximize their self-interest without having any interest to benefit or harm the interest of others. It is rather neutral to others.

Self-interest should not also be confused with *selfishness* which may implicitly take the happiness (or for that matter the misery) of other people as a part of one's satisfactions. The theorem of self-interest is **not morally loaded**, since it states only that agents behave in accordance with their own preferences. The fundamental presumption is that individuals know best what is right for them (consumer sovereignty) regardless of how **good** or **bad** it may be to others. The utility function entering in the choice decision is only the utility function of the individual; it doesn't include the utility (or disutility) function of others.

While some scholars, especially in the field of sociology, attack this assumption as immoral and others argue as it does not represent human being who is a product and at the same time whose motive is social. Others in the field of economics also attack the self-interest assumption based on the argument that allowing everyone to promote self-interest in every economic activities will have undesirable consequences on the society at large. The fact that self-interest could have undesirable consequences on the society doesn't make the assumption invalid. Contrary to the generalization made by Adam Smith 'when individuals are left to pursuit their self-interest, they promote an end which was no part of their intension". This does not allow for any conflict between individual interest and social interest. But theories have successfully demonstrated a condition where self-interest outcomes that differ from the societal interest. Especially in the areas of public goods, letting everyone to promote his self-interest results an outcome that departs from the societal interest.

In general, NIE takes the self-interest assumption as valid. But it adds opportunism as an important possible behavior too.

Opportunism, according to Williamson (1996), is "self-interest seeking with guile" - agents who are skilled at dissembling realize transactional advantage. Individuals may well be motivated to capture gain by taking such opportunistic actions as fraud, betrayal, deception,

defection, breaching contract, etc. Opportunism includes but is scarcely limited to more blatant forms, such as lying, stealing, and cheating. Opportunism more often involves subtle forms of deceit. Both active and passive forms and both ex ante and ex post types are included. *Ex ante* and *ex post* opportunism are recognized in the insurance literature under the headings of adverse selection and moral hazard, respectively. More generally, opportunism refers to the incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse. It is responsible for real or contrived conditions of information asymmetry, which vastly complicate problem of organization.

Even if the motive behind are still assumed to be self-interest, it is not just seeking self-interest with honest behavior. Rather it is an attempt to seek self-interest with contrived effort to capture gains. The consequences are that it make economic activities risky and uncertain. The consequence can go to the extent to block economic exchanges. Williamson (1995) argues that human being, when assessed with respect to his transactional characteristics, is a more subtle and devious creature, than the usual self-interest seeking assumption reveals.

Inclusion of opportunistic behavior modifies the neoclassical assumption. The possibility of opportunistic behavior means that actors will be uncertain about each other's behavior. This limit transactions and economic activities in general. Institutions thus emerged to limit such opportunistic actions.

Activity

Suppose you wanted to buy a processed (milled) pepper. But how can you be sure that what you are buying is just red soil not pepper. How can a market for processed pepper emerge if sellers are allowed to capture economic gain by taking such opportunistic actions as adulteration.

- *Can all traders be trusted? If acknowledge for the possibility that very few traders can profit by taking such actions as mentioned above, what implications this will have on other honest traders? Under what conditions?*
- *What institutional environment then discourage such actions? Discuss.*

Some argue that *trust* as an important means that discourage opportunism. But can such trust arise in a vacuum? It require institutions that encourage trustworthiness and that discourage opportunism and malfeasance. Institutions thus provide the incentive and constraint structure so that actors will act in a predictable and stable way. Such institution can range from those that promote self-restraint behavior to second-party retaliation to third-party constraints. Multiple of informal and formal institutions can incentivize trust and discourage opportunism.

Altruism is an aspect of moral philosophy in which it is argued that moral decisions should be based upon the interests or well-being of *others rather than on self-interest*. This basis can range from only taking the interests of others into consideration to simply taking them into

account a little bit. Though such behavioral assumption are taken as valid by school of thoughts, especially in the areas of collective actions, they have no much ground in economics in general. Altruism as a behavioral attribute is still controversial.

Some even argue that those that appears altruistic, and hence considered as a deviation from self-interest behavior, are still far-sighted calculative self-interest behavior.

2.4.2.Knowledge problem, cognitive burden and rationality

In neoclassical economic theory, agents are assumed to have perfect knowledge. Actors know about the market, the each other's behavior, nature of good/service they transacting, the best available technology, even about the future and the like. Even if one does not know about these, the actor is assumed to access the information without incurring any cost. In reality actors incur a lot of cost in order to gather, process and disseminate information. But even then actors still lack information about the various attributes of actors, products, technology, and the like. Neoclassical economics accepts the possible existence of information problem but considers the problem as frictional in that information market will emerge. It takes agents are more calculative given the existing information. NIE on the other hand assume less calculative in the capacity to receive, store, retrieve, and process information. The presence of information problem means that there is a gain that can be captured by reducing information problem.

What caused the booming of information technology: internet, telephone, television companies, advertising firms, various consultancy firms, quality assurance and standardizing firms, etc. These market emerged to capture economic gain by gathering, supplying and processing information. Theories, within the framework of neoclassical economics, are developed to explain these real world situations. These theories explain much of the missing markets and market imperfections especially in the areas of insurance and credit markets. One of the contribution of NIE is it has integrated these theories through the concept of transaction costs. Some of these will be discussed in the coming chapters. For now, we will consider the implication of information problem behavioral patterns and institutions.

One aspect of information is even if it was costless to access the required information, human agency has limited capacity to process the available information. The natural cognitive and computational capacity of human being is limited. In addition, the future is surrounded by uncertainties. So far, the best technology cannot tell about the future with certainty. This will have implication on the validity of the assumption of rationality. In neoclassical theory, self-interested actors are also assumed to be *rational*. Rationality refers to the power of being able to exercise one's reason. The instrumental rationality postulate of neoclassical theory assumes that the actors possess information necessary to evaluate correctly the alternatives and in consequence make choices that will achieve the desired ends. But as discussed above agents always lack information and the choice decisions may not enable them achieve they are intended to achieve. NIE thus introduced a concept of *bounded rationality* – intendedly rational but only limitedly so. Simon (1957)who proposed the concept of *bounded rationality* argue that if institutions play active role in constraining the choices of actors and in reducing information problem, then *bounded rationality* must be the building block of economic theory.

When we see the process of decision making, actors before they make decision, they need to have complete information. But the world is such it cannot grant one with complete information. The feasible option is to use the available information however it may be incomplete. Using this information, actors use a certain model to process the available information. Given the computational capacity, actors often use a simplified subjective model and correct this model through information feedback about the correctness of initial model. When we examine this process of decision making, it used incomplete information, it processed the incomplete information with an imprecise model (because it is subjective and simplified). But the process of correcting it is also imperfect because the information feedback will also be incomplete. A decision maker can thus rarely attain what he/she intended to by processing incomplete information with imprecise model. Thus decision makers are considered as *boundedly rational* even if they are intended to be rational.

For instance a farmer to decide how much to produce of what product may use few information perhaps about this year's prices, this year's weather, and past experiences about the productivity of his land. Given these limited information, the farmer may use subjective model such as if prices this years of crop x is higher, then next year's prices of x will be higher. He will use a similar simplified model to predict next year's weather and productivity. The outcome is likely to be higher or lower that what he initially intend to.

In terms of transaction, other barriers also exist. Knowledge of actors about each other's behavior, each other's language, culture, belief, tradition, etc. also matter. Can a person get a job without knowing the working language of a given organization. The institution of language has a bearing in impeding or facilitating transactions.

They are more calculative in that they are given to opportunism. Taken together, that appears to correspond more closely with human nature as we know it. Still, it is plainly a narrow prescription. It makes little provision for attributes such as kindness, sympathy, solidarity, and the like. Indeed, to the extent that such factors are acknowledged, their costs, rather than their benefits, are emphasized.

Taken together, the behavioral assumptions of NIE appears to correspond more closely with human nature as we know it. But it should be noted that it still is plainly a narrow prescription. It makes little provision for attributes such as kindness, sympathy, solidarity, and the like. Indeed, to the extent that such factors are acknowledged, their costs, rather than their benefits, are emphasized.

1.9.1. (Review of Game Theories

In perfectly competitive markets both buyers and sellers are assumed to very large and both group of actors are assumed to have perfect knowledge. Thus the decision of actors can be assumed as independent. The analysis of equilibrium is based on decisions of active and independent individuals. But in reality, actors may be few enough that action of one will have effect on the other and vise versa. In such situations the choice decision of one agent will be interdependent with the choice decision of one of more rival agents. Similarly, transacting parties in the neoclassical theory are assumed to have perfect knowledge about each other's

actions. But in reality, transacting parties may not fully know about the behavior (trustworthiness, opportunistic behaviors) of partner. For example, you want to lend money to a person but you may not know with certainty about the repayment capacity and the intension of the borrower and possible hidden actions (to avoid repayment) the borrower may take. In such situations, the welfare of one party is dependent, in part, on the decision of the other party. Game theory is the analysis of equilibrium among two or more interacting parties or agents "in the game".

One approach for examining strategic behavior of competing agents or transacting parties is to study how people play "games". Self-enforcing properties of contracts, credible commitments, the private production of public goods, externalities, and models of negotiation use game theoretic models.

The following section is just to brief review the common games. You are thus strongly advised to refer back the basics of game theory.

A. Prisoner's dilemma (PD) game

The prisoner's dilemma sometimes abbreviated as PD game is the most famous game used to explain many economic phenomena.

The "original" prisoners dilemma game goes something like the following.

1. Two individuals are arrested under suspicion of a serious crime (murder or theft). Each is known to be guilty of a minor crime (say jay walking), but it is not possible to convict either of the serious crime unless one or both of them confesses.
2. The prisoners are separated. Each is told that if he testifies about the other's guilt that he will receive a reduced sentence for the crime that he is known to be guilty of.
3. The equilibrium of this game is that BOTH TESTIFY (CONFESS).

To see this consider the following game matrix representing the payoffs to each of the prisoners:

		Prisoner B	
		Testify	Don't testify
Prisoner A	Testify	(10, 10)	(1, 12)
	Don't testify	(12, 1)	(2, 2)

i. Each cell of the game matrix contains payoffs, for A and B, in years in jail (a bad).
ii. Each individual will rationally attempt to minimize his jail sentence.
iii. Regardless of what Prisoner B does, Prisoner A is better off testifying. Suppose B testify, A will serve 10 years in jail but still better because if he doesn't testify he will serve 12 years. Likewise, if B doesn't testify, A will be better if he testify. Because, if he testify, he will serve 1 year in jail but 2 years if he doesn't.

iv. Note that the same strategy yields the lowest sentence for Prisoner B regardless of what Prisoner A does. If A testifies, then by also testifying B can reduce his sentence from 12 to 10 years. If A does not testify, then B can reduce his sentence from 2 to 1 year by testifying.

v. Since one prisoner cannot be sure that the other will not testify, each will find the 'testify' option the best choice. The dominant strategy is then that both prisoners will choose the 'testify' option. The (testify, testify) strategy pair yields 10 years in jail for each. This is said to be the *Nash equilibrium* to this game because given that the other player has testified, each individual regards his own choice (testifying) as optimal. No player has an incentive to independently change his own strategy at a Nash equilibrium.

vi. It is a dilemma because each prisoner would have been better off **if neither had testified**. If both didn't testify, both would serve only 2 years in jail (Pareto optimal results) as compared to 10 years (Nash equilibrium). Independent rational choices do not always achieve.

vii. Note that the Pareto optimality condition is considered in terms of the collective outcomes for the two prisoners. If the situation is viewed in terms of society at large, we may regard this particular dilemma as optimal insofar as two dangerous criminals are punished for real crimes.

The prisioner's dilemma game can be used to model a wide range of social dilemmas.

- Competition between Bertrand (price setting) duopolists.
- Decisions to engage in externality generating activities (Pollution)
- Contract Breach/Fraud
- The free rider problems observed in communally used resource grazing land, in collective actions, public goods, etc.

The central message of the above game is since players do not know each other's choice decision with certainty, each attempt to minimize the jail period by taking all possible scenario with equal probability. If suppose A fully trust B that he will not testify, whether A will testify or not depend on his commitment to be honest to B. If A is a kind of person that reciprocate honesty with honesty (tit-for-tat strategy), A will be committed to shoulder the burden of serving one additional year in jail by *testifying*. But if B is an opportunistic person that takes advantage of A's trustworthiness, B will *not testify* just to reduce the period in jail by one year. The facts that A trusts B and A is committed to bear the cost of serving one additional year by *testifying* are not sufficient enough for A to be safe. For A to be safe, B must not only fully trust A, or be certain that A will not testify, but B must also be committed to bear the cost of serving an additional one year in jail by *testifying*. The fact that *you trust me* does not guarantee that I will be trustworthy. It is just your perception of me. The same holds if we start by supposing that B fully trust A.

In the above game we find a pair of strategies such that player A's strategy is optimal for A *given B's* strategy and moreover B's strategy is optimal for B *given A's* strategy, we are at an equilibrium. Neither player can gain by a unilateral switch to a non-equilibrium strategy.

The lesson is that for Pareto optimal outcome to occur i.e. for both Prisoners to choose (don't testify, don't testify), it not only require for one player (prisoner) to trust the other and be

committed to bear the costs associated with his choice decisions, the other must also do the same (trust the other and be committed to bear the costs).

The role of trust and commitment will be more clear if we modify the above game. To see this change 1 into 0, 12 into 20 and 2 into 5.

		Prisoner B	
		Testify	Don't testify
Prisoner A	Testify	(10, 10)	(0, 20)
	Don't testify	(20, 0)	(4, 4)

Activity

Identify the Nash Equilibrium.

When you compare this game with the earlier game, which one require lot of commitment?

Suppose Prisoners equally trust one another in both types of games. Which of the games provide Prisoners stronger temptation to act opportunistically?

You must have observed changes the incentive structure the possible costs of trusting, the costs of being committed to reciprocate the assumed trust and the potential benefits of behaving opportunistically.

The problems is in a condition where there is nothing that constrain behavior (as in the above PD game), not only self-interest but also guile (clever but sometimes dishonest behavior) can also an important behavior. In constraint free world, not only individuals will be motivated to maximize self-interest, they can do this by taking opportunistic actions too. People to promote collective interest, they need something that incentivize trustworthiness, commitment, honesty, and the like and at the same time that discourage opportunism, betrayal, dishonesty and the like. In such conditions players choose that alternative that they perceive promote self-interest regardless of what possible effects that decision can have on others. **Institutions come to exist to constrain such behaviors.** Starting with simple analysis of PD game, we saw how institutions emerge.

When the self-interested behavior involve substantial costs on a given domain, institutional arrangements can emerge (through conscious design or spontaneously) to maximize the collective interest by incentivizing desired economic behaviors and discouraging undesirable ones. Institutions and institutional arrangements arise to do these functions does not mean that they really do so. Social institutions must be seen as equilibrium outcome of games of

strategy whose descriptions are given by the physical capabilities of agents in the game – the empirical background.

Game theory provides an important tool to systematically understand the emergence, stability of institutional arrangements and their value relationships.

This argument suffer from what Stiglitz (2002) called *functionalist fallacy*: going from the observation that institution arises to reduce transaction costs to the conclusion that they do. This call for critical examination of the existing institutions. Some of the important questions are:

(1) to what extent the existing institutional arrangement effectively shapes (in the desired manner) the behavior of people in the domain. The institutional arrangement is intended to reduce transaction costs by constraining and incentivizing behavior, in reality it may not be effective in doing so. An alternative institutional arrangement can be efficient that the existing one.

(2) But even if it is effective in achieving the collective interest, question remain on the extent the benefits are fairly shared among people in the domain. Some institutional arrangement perpetuate (or even expand) the existing inequality. As a result it may be a source of conflicts.

(3) Still even if the institutional arrangement is efficient and has positive distributional effects *within the domain*, it may still pose externalities across space and time. For instance, it may exclude some groups outside the domain. When institutions reduce transaction costs within a domain, it can at the same time increase transaction costs outside the domain. This usually occur when the norms and rules are discriminatory – norms that apply in certain patter on actors within the domain but applied in a different and opposite manner on actors outside the domain. This can cause conflict but it can also limit economic opportunities. Informal constraints usually suffer from such problems. The negative effects can go beyond the current generation and can limit the ability of the future generation to increase economic opportunities. In other conditions, the institutional arrangement can exploit the existing resources in a way that limit the capacity of the future generation to produce.

These and other questions call for comparative institutional analysis to compare alternative institutional arrangements. Neoclassical economics takes the ideal competitive market as a reference 'institutional arrangement' to judge the outcomes of alternative institutional arrangement. One of the limitation of NIE is that it lacks reference. As a way out, it just compare alternative institutional arrangements by studying the manner agents respond in alternative institutional arrangement.

B. N persons non-cooperative game

The PD game's principal limitations as a model of social dilemmas are its assumptions: only two players with only two strategies where players are allowed to play only for one round. However, these assumptions can be dropped without changing the basic thrust of the analysis

because essentially the same conclusions can be reached for N-person games where the players have infinite number of strategies (along a continuum) and play any *finite number of rounds*.

Many researches have attempted to test the PD game through choice experimental methods. Even if results are inconclusive, there are evidences that agents quickly learn the potential advantage of cooperation when they have a chance to play the game repeatedly. Especially a mutual cooperation consistent with rational choice can arise in a repeated PD game provided that each player's discounting of future payoffs was sufficiently low.

Hardin's (1968) evocative paper entitled 'The Tragedy of the Commons' uses the concept of prisoner dilemma. Hardin argues that when all farmers attempt to increase their herds to maximize their self-interest, it comes a day where the number of herds exceeds the carrying capacity of the grazing land. This lead to overexploitation and destruction of the common grazing land. He then concluded that the logic of the commons remorselessly generated tragedy. Contrary to this, some theories in the areas of collective actions (e.g. Ellinor Ostrom) argue that since the play is infinite (unlimited time periods), institutions arise (consciously or spontaneously) that coordinate cooperation in the management, allocation, and proper use of the common property such as grazing land.

Even if the Prisoner's dilemma seems simple and unrealistic, it provides an important insight to behavior aspects. Its extension into repeated games help to analyze the effects produced by phenomena such as strategic interactions, beliefs and social structures on the set of rules. It thus provide an important to analyze the emergence and development of institutions.

C. Evolutionary approach in repeated PD game

If we further relaxed the finite number of rounds of the PD game into *infinite* rounds, players may not naively act as in the case of the PD game we have discussed. But in an infinite round, agents can retaliate dishonesty with dishonesty (tit-for-tat strategy to penalize dishonest behavior) and can also reciprocate honesty with honesty (tit-for-tat strategy to incentivize honest behavior). The learning process the repetitive game produces can still yield outcome which are still consistent with cooperative outcome.

Researches have attempted to test the validity of PD games under variety of scenarios: varying the strategies, the number of players, and the finiteness of the rounds. Choice experiment studies were also made to test the PD games under defined contexts: incomplete information, behavioral assumptions about the players such as adaptive expectation and learning and defining the costs and benefits of strategic actions such as defection, cooperation, etc. Even if these papers provided a lot of insights to the emergence and evolution of institutions, no conclusive result was obtained proving the validity of PD game.

The evolutionary approach appears to be particularly useful for analyzing the self-enforceability of institutions in the form of norms and conventions. In order to explain how conventions can evolve without conscious design and how they can be self- perpetuating, Sugden (1989) argues that the classical game theory's assumptions of perfect rationality and

unrepeated interaction are inadequate. According to the author, a convention is an evolutionary stable self-enforcing pattern of behavior in a game that has two or more evolutionary stable strategies. This equilibrium is such that if followed by the majority of the population, agents that choose to deviate from it will be left worse off than the others. Therefore, a sufficient condition for evolutionary stability is that a given strategy profile represents the unique best reply to itself. Besides, the more people follow a convention, the more – other things being equal – it pays to conform to this behavior, thus implying that conventions can be stable, although not necessarily Pareto efficient. Nonetheless, conventions become norms when people start to believe they must behave in ways that maintain a particular pattern of behavior.

A more formal approach to study how a convention does emerge has been proposed by Young (1993). More in detail, having defined a convention as an equilibrium that everyone expects, the issue under analysis is the process that leads to the emergence of one particular expectation when multiple equilibria exist. Assuming that the game is played repeatedly by different agents having adaptive expectations, incomplete information and can make mistakes, Young shows that since past play has a feedback effect on the expectations and behaviors of the agents, expectations tend to converge to a stable equilibrium in the long-run.

The theory of repeated games proves particularly effective to analyze the self-enforceability of institutions such as norms, contracts and various governance structures. Compliance with the rules implied by these institutions is based on the rational beliefs of self-interested agents.

D. Cooperative games

The crucial difference between a noncooperative and a cooperative situation is that, in the former situation, agreements between decision-makers have to be self-enforcing. In the noncooperative games are self-enforcing, there are no institutions that coordinate collective actions. But the above incentives for cooperation and constraints for independent actions motivate agents to design institutions. Or in such situation, each player may find cooperation a desirable strategy and a norm of cooperation will arise.

In a cooperative game on the other hand players can coordinate their strategies and share the payoff. In particular, sets of players, called *coalitions*, can make binding agreements about joint strategies, pool their individual agreements and redistribute the total in a specified way. This definitely require agents to communicate both to make form coalition and to monitor the adherence of agents to the agreement. A *coalition* is simply a subset of the set of players which forms in order to coordinate strategies and to agree on how the total payoff is to be divided among the members. The non-cooperative game is a hypothetical construction to see how agents can behave in the absence of institutions. The cooperative game is the study of how players behave in a given institutional arrangement. In this case, bargaining becomes important in bring actors into agreement.

Cooperative game theory looks for the possible set of outcomes, study what the players can achieve, which coalitions will be formed, how the coalitions will distribute the outcomes and

whether the outcomes are robust and stable. The cooperative game theory attempts to answer how the total value is divided up among the players and this answer will depend on their bargaining power. Furthermore, in cooperative game theory, a player's bargaining power depends on how much other players need him to form coalitions, or his marginal contribution.

Formation of cartel in some key products are largely explained using the cooperative game theories. The theory shows how economic agents recognizing the potential benefits that could be gained from cooperation come to an agreement to form cooperate in one or more economic issues. This can range from forming lobby group to forming a central organization to amalgamation. The central organization can perform such activities as economize information, coordinate actions of members, monitor and enforce agreements, and allocate activities and benefits. The theory demonstrate that members will have the incentive to take some hidden actions that maximize individual benefits but that reduce the collective benefits. A common example is the cartel – OPEC.

The main purpose of OPEC is to raise price by limiting quantity. Accordingly, it allocates production quota to each member oil producing country. Assuming all the rest of member countries will produce the amount equal to the quota, one member state see the opportunity of increasing profits by increasing quantity. That is, producing an amount higher than the quota will pay a member state if all other member states produce the respective quantity specified in the quota. Then each member increases quantity thinking other members will keep quantity equal to the quota. But the problem is every others will think the same and increase quantity. The outcome will be that all member will increase quantity. The outcome then will be all members will receive low price equal to Nash equilibrium price. The main problem in cartel is the inherent incentive for members to cheat on the agreed upon price and quantity. The success of such cooperation thus mainly depends on the ability the central organization in creating trust among members and ensuring that each member is living up to the collective agreement. The formation of various forms of cooperative organizations in the rural areas can be conceptualized in terms of cooperative games.

Collective action theories emphasize the roles of social capital in creating trust, enforcing contracts and property rights and in reducing opportunism. Using game theories, these theories show how social network provide the institutional context that encourage cooperative actions of members in allocating, using and managing natural resource. Empirical evidences show the various collective actions group members take to discourage non-cooperators that ranges from gossip to social ostracism to punishment of many kinds. Yet there are doubts on the roles of social capital in promoting economic transactions outside public goods. Note that the theory of social capital will be discussed separately later.

In addition, game theory is also used to explain the historical and evolutionary developments of informal and formal institutions.

E. Sequential Games and Entry Deterrence

Dear student, in some type of games the players make their moves sequentially rather than simultaneously. As is the case in many situations, one player get to move first and the other player responds. But in the previous sections we have assumed players make their moves simultaneously. What type of equilibria would sequential games entail? We will review the theory and its applications.

Examples of such type of games include the Stackelberg model of oligopoly – one firm sets output before the other does; an advertising decision by one firm and the response by its competitor; entry-deterring investment by an incumbent firm and the decision whether to enter the market by a potential competitor; or a new government regulatory policy and the investment and output response of the regulated firms.

Entry Deterrence

Dear student, do you remember the sources of monopoly from our Microeconomics I? Good. The sources of monopoly power and monopoly profits include economies of scale, patents and licenses, ownership of strategic inputs, exclusive knowledge of a production technique and so on. However, firms themselves can sometimes deter entry of potential competitors.

To deter entry the incumbent/existing firm must convince any potential competitor that entry will be unprofitable. To see how this might be done, put yourself in the position of an incumbent monopolist facing a prospective entrant, firm X. The entrant will decide whether or not to come into the market and the incumbent will of course would like to induce firm X to stay out of the industry so as to continue to charge a high price and enjoy monopoly profits. That is the potential entrant's strategies are to enter or to stay out while the incumbent's strategies are either to accommodate the entrant (maintain high price in the hope that the entrant will do the same) or to wage warfare (charge low price to make entry unprofitable). The payoffs from such a game are depicted in Table 3.27.

Table 3.27 entry deterrence

		Potential entrant	
		Enter	Stay out
Incumbent	High price (accommodation)	100, 20	200, 0
	Low price (warfare)	70, -10	130, 0

If the incumbent want to be "accommodating", and hence continue charging high price and allow entry, it will earn only Br 100 million profits since it has to share the market with the new entrant. But if it successfully manages to deter entry and maintain its higher price, then it gets Br 200 million. Alternatively, the incumbent can increase its production capacity, produce more, and lower its price – engage itself in a price war. In this case if the new entrant decides to come in, the entrant will face a loss of Br 10 million. Finally if firm X stays out but

the incumbent expand its capacity and lower price nonetheless, its net benefit will be Br 130 million. Certainly this last choice would not make much sense.

If firm X thinks the incumbent will be accommodating and maintain a high price after it has entered, it will find it profitable to enter and will do so. Suppose the incumbent threaten to expand output and start a price war in order to keep X out. If X takes the threat seriously, it will not enter the market because it can expect to lose Br 10 million. The threat, however, is not credible. As Table 3.27 shows (and the potential competitor knows), once entry has occurred, it will be in the best interest of the incumbent to accommodate and maintain a high price. Firm X's rational move is to enter the market; and the outcome will be the upper left hand corner of the matrix.

But what if the incumbent makes an irrevocable commitment that will alter its incentives once entry occurs – a commitment that will give it little choice but to charge a low price if entry occurs? Suppose it invested in the extra capacity needed to increase output and engage in competitive warfare should entry occur. Of course, if the incumbent maintain a high price (whether or not X enters), this added cost will reduce its payoff. The payoff matrix will now change.

As a result of its decision to invest in additional capacity, the incumbent's threat to engage in competitive warfare is completely credible. Because it has already have the additional capacity with which to wage war, it will do better in competitive warfare than it would by maintaining a high price. Because the potential competitor now knows that entry will result in warfare, it is rational for it to stay out of the market. The incumbent, having deterred entry, will maintain a high price and earn a profit associated with the new capacity.

Indeed, this seems to be the basis for much of the entry-preventing behavior that goes on in actual markets. The potential entrant must consider that rational industry discipline can break down after entry occurs. By fostering an image of irrationality and violence, an incumbent firm might convince potential entrants that the risk of warfare is too high.

It is in view of the undesirable welfare loss associated with monopoly firms, society design anti-trust low to limit the manipulative power of such firm. How such rules evolve and become effective depends on the overall institutional environment. In the context where the institutional environment is weak, such firms maintain their monopoly power by bribing the enforcing organizations.

The first one, in order to investigate the impact of the internalization of traits, focuses on the learning and evolutionary processes of the relevant rules. It mainly relies on evolutionary game theory and learning models.

2.5. New institutional economics vs standard neoclassical economics

Neoclassical economics construct competitive market model largely based on clearly articulated assumptions. To relevantly use the theory to real world economic problems, it

extend one or more of these assumptions. Assumptions are important tools in scientific enquiry, because they allow analysts to focus on one set of issues at a time.

Do other fields of studies outside social science such as physics use assumption to simplify understanding? Yes! Contrary to the conventional view, natural sciences also use assumptions to simplify understanding. For instance, introductory physics courses often begin with assuming a hypothetical world of frictionless plane. This helps beginners to understand the basic concepts. But finding a frictionless plane may be unrealistic. For a given concept to be useful for real word problem, it has to address the real world situations. To do so, the subject relaxes the assumption in order to deal a world with frictions.

Exercise

Supposing the following real world situations:

1. When a firm hires a worker, the firm knows less about the ability of the worker than the worker does about herself;
2. A financial firm knows less about the repayment capacity of a borrower than the borrower does about himself;
3. A financial firm knows less about the action a borrow is taking in order to avoid repayments;
4. A buyer knows less about the quality of honey than the seller farmer;

Write the core assumption(s) violated and the corresponding alternative theories proposed to address market failures/imperfections.

Institutions arise to correct these market failures.

Activity

In recognition of the various realities and the adverse welfare consequences, governments, economic agents and markets design different strategies to minimize or correct the various market imperfections and failures. To help you understand the roles of institutions, try to answer the following questions.

1. We have a Coffee Quality Assurance and Inspection organizations in the central coffee markets. The main tasks of this organization is to standardize, grade and label coffee. Why do we need this regulatory organ?
2. When an entrepreneur requests loan, he/she has to present a project proposal. The lender undertake financial assessment of proposed project. But this is not enough. The lender require some collateral. Why?
3. Why an insurance company require birth and health certificates before it provide life insurance?

4. In addition to the minimum CGPA required for graduation, sometime graduates are also required to have some certificate in addition to the MA/MSc degree e.g. Certificate of Competence (CoC). What is the purpose of this certificate? Even then, firms want to test *qualifying exam* (written and/or interview) to screen among job applicants who already have both the degree and CoC. Why firms want to use their own test in addition to (instead of) the CGPA and CoC scores?
5. Why a farm hires a supervisors to monitor daily laborer?
6. If you closely observe local markets, both traders and consumers have specific client. Why agents need clientele relationships?

Try to answer these questions, first you need to identify the assumption violated in these economic activities. Then attempt to explain the reasons in relations to these assumptions. You will find that these institutions arise in order to correct market imperfections caused by the non-fulfilment of one or more of the assumptions underlying the perfectly competitive markets.

You must have now recognized that the emergence of institutions are in response to the non-fulfilment of assumptions underlying the perfectly competitive markets. Contributes of NIE to provide broader explanation to real world within the framework of neoclassical economic theories.

However the particular focus and contribution of NIE approaches have been their emphasis on (1) the problems that economic actors face as a result of imperfect information in transactions and (2) the role of institutions in addressing (or exacerbating) such problems. NIE becomes the building block upon which various theories, proposed within the framework of neoclassical economics, in order to address market failures associated with the non-fulfilment of key assumptions underlying perfectly competitive markets. Theories in the areas of information (moral hazard and adverse selections, principal-agency problem, associated with information asymmetry), property right theories; organizational theory; transaction cost theories; and the like. NIE is not a replacement of neoclassical economic theories but an attempt to complement it in order to relevantly apply neoclassical economic theories to real world problems.

Yet NIE has made slight modifications of behavioral assumptions (mainly bounded rationality and self-interest with guile which is the basis of opportunistic behaviors), explicit recognition the non-fulfilment of stringent assumptions underlying perfectly competitive markets (mainly the assumption of perfect knowledge).

But NIE is not neoclassical economics

The primary decision making unit in neoclassical economics is the individuals (individual households, worker, firms, markets, etc.) and broaden the scope by aggregating the outcomes of individual decisions. Contrary to this, NIE assess the complex interplay between the individual and the institutional environment.

While neoclassical economics assess the real world economic problems in the lens of perfectly competitive markets to the inefficiency gaps, NIE usually use other alternative institutional arrangements as reference point to find any intervention points. In addition, efficiency play a central role in neoclassical economics and normative analysis are largely based on this fundamental objectives. NIE on the other hand refrain from taking any single objective as fundamental.

Neoclassical economics takes perfectly competitive markets as a reference point and build other theories upon it. It takes institutions as frictional. NIE on the contrary takes perfectly competitive markets just as one form of institution along the continuum of institutional arrangements. While mathematical and econometric models play a dominant role in building theories and undertaking empirical analysis, NIE utilize case studies and empirical evidences as an important tools. It attempt to blend mathematical and econometric models with other social theories to explain real economic problems. Moreover, historical and evolutionary aspects play important roles in understanding the existing problems.

2.6. Summary

- Game theory is the right tool for examining strategic behavior in economic circumstances
- A game is any situation in which *players* (participants) make *strategic decisions* – i.e, decisions that take into account each other's actions and responses.
- Strategic decisions result in payoffs to the players and the optimal strategy for a player is the one that maximizes her expected payoff.
- we will say that a pair of strategies is a Nash equilibrium if A's choice is optimal, given B's choice, and B's choice is optimal given A's choice**.**
- Games may have no, only one or more than one Nash equilibrium
- A pure strategy is strategy in which a player makes a specific choice or takes a specific action**.**
- Repeated games might affect the strategic choice of players depending on whether the game is going to be played a fixed number of times or an infinite number of times.

- When games are repeated finite number of times, then cooperative strategies are not expected to be made.
- Infinitely repeated games will possibly result in cooperative results as there is the room for players to build reputation and as the players have the tit-for-tat instrument that helps them enforce cooperation.
- In sequential games, one player get to move first and the other player responds.
- In sequential games if followers can come up with credible threats, they can affect the final equilibrium of the game.

2.7. Suggested Readings

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2.8. Question for Review

3. TRANSACTION COST ECONOMICS

3.1. Introduction

One of the implicit assumption in the main stream economics is that transactions are frictionless and hence costless. Though transaction costs has been present in economics discourse for centuries in relation to market frictions (Hardt, 2009), its significance was revealed recently. Especially, two articles have made important contributions in pushing the standard assumption of zero transaction costs to completion: Coase (1960) in relation to externalities and Arrow's (1996) in relation to vertical integration. One of the important contribution of NIE is thus the explicit recognition of positive-transaction cost assumption. But it is not just explicit recognition of positive transaction costs but it provided the theoretical foundation for NIE economics. This chapter thus deal with the concept of Transaction Cost Economics (TCE).

The chapter begin by introducing the concept of transaction costs in general. Here we will explain the implications of recognizing positive transaction costs on neoclassical economic theory. We will then attempt to explain the connection between transaction cost economics with institutions in particular and NIE in general. Before we go to the relevance of transaction cost economic theory for agricultural development, we will try to identify the various sources of transaction costs.

3.2. Learning Objectives

After reading this chapter, students will be able to:

- State the meaning of transaction costs;
- Identify the sources of transaction costs;
- Explain the two key behavioral foundations of transaction costs;
- Explain the three attributes of transaction costs;
- Explain the relationships between transaction costs and choice of governance structure.

3.3. Thematic Plan

3.4. What are transaction cost

It was Ronald Coase who brought the concept of transaction costs in to economic theory in his influential paper "The Problem of Social Costs" (1960). He took two neighboring farms – rancher and crop producer whose increase in production by one are assumed to inflict external cost on the other. Based on these hypothetical case, he showed that, independent of the initial assignment of property rights, the rancher and the farmer could rearrange a property rights regime that would increase their overall benefits *if it was costless for the two owners to bargain*.

The issue are as follow:

There are neighboring rancher and crop producer. Increase in cattle production requires reduction in crop production as cattle damages crops. Each have alternative options in front of them. If for instance the price for cattle in the market rise, the rancher may find profitable to expand cattle productions. What he can do? The rancher can pay crop producer to damage the crop; the rancher can pay for fence to contain the crop damage; the rancher can pay the farmer for abandoning crop production; or the rancher can just rent or buy the crop land. Similarly, the farmer can pay the rancher to reduce cattle; the farmer can pay for fence to protect crop damage from cattle encroachment; or the farmer can rent or buy the ranchland. Given these alternative options are open to each, both can strike a bargain that would maximize the total production. He thus showed, if it was costless for the two to bargain, both could agree to choose one of the above alternatives depending on the liability laws and the relative values of land, crops, and cattle. ***The main economic outcome is that voluntary exchange would have produced efficient outcome, independent of the initial assignment of property rights, if the voluntary bargaining does not involve some cost***s.

Contract agreement: bargaining, monitoring and enforcement costs

What possible costs could arise in such agreements? Both easily come to bargaining table and agree on terms beneficial to both? Or each drive a hard bargain by disparaging each other's offer and hence cannot come to agreement without the involvement of third party? Or it is entirely possible for the two to come to agreement even with the involvement of third party? Or does the society consider such bargaining as enormity or villainous act and thus unimaginable? Or is it something that both parties are willing to bargain but they couldn't do so just because it conflicts with the traditional value. Note that even if both are willing to agree on a certain terms, its enforcement involves a lot of risk if the act is socially acceptable.

But unfortunately, such bargaining involves costs such as *costs of bargaining, drafting and signing agreements, and monitoring and enforcing the agreement*. In a world of positive transaction costs, there are two possibilities. One possibility is the two may not reach agreement if the costs of bargaining is so high to block agreement. The second possibility is that the two may reach agreement if the costs of realizing the transactions is not so high to erode the potential benefits both can gain from the transactions. Suppose the rise in the prices of cattle relative to crop is so high. The rancher *can* capture some gain if he compensate the farmer for possible *crop damages* that *may* arise due to the increase in number of cattle. But this transactions is surrounded with many risks and uncertainties. Above all, given the future prices of both cattle and crop are unknown, how can each be sure that agreed terms are profitable? If the price of cattle relative to crop declines, the rancher will lose and the farmer will gain and vice versa if the price of crop relative to cattle declines. Let us assume, after a lot of bargain, they agree on a term where the rancher to pay farmer the market value of crop damaged. Yet how can they determine the amount of crop damage? Even if they agree on how to estimate the damage levels, how can one be sure that the other will not take some actions that underestimate/overestimate the

damage level? Even if there is a precise estimation technique, how can one be sure that the other will *pay the agreed amount on time*? Given these uncertainties about each other's behavior and the market environment, it is not likely that the two will reach on a sustainable agreement. Suppose they may need third party to enforce the agreements. Suppose there is a third party to facilitate the bargain, enforce the agreement and the like. A sustainable agreement may be reached but with certain costs. Unfortunately reaching the initial agreement and processing compensations every cropping seasons require both rancher and farmer to devote resources that would have otherwise been used in the production of ranch and crop. In other words, these transaction costs have no contributions in adding the value of crop and cattle.

The above case show that reaching an agreement entail costs. Will this be the end of the story? How can one ensure that the other is going according to the agreement? How can one enforce if one explicitly breaches the agreement?

Whether the agreement occur and at what cost if it does depend on: the social environment (the norms, the social bond, the culture and belief of society), the knowledge of agents about each other's behavior (the level of trust and malfeasance, their mental model, the power balance), the political environment, the legal environment, the depth of the market, etc.

Assuming the transaction occurred with positive costs, would the outcome be the same as the costless transactions? What possible implications does this transaction costs will have on the efficiency the outcome? What implications the presence of positive transaction cost has on the way society respond to basic economic questions: production, allocation, and distribution

Since the resources devoted to facilitate this transactions are dead-weight losses as they constitute neither the producer surplus nor consumer surplus. The outcome will be suboptimal if the transaction involve positive cost. This is because the time, energy, and other resources to facilitate this transactions would have been used in productive somewhere else in the economy. If making such transaction is nearly costless, the outcome from reallocation would have been efficient regardless of the initial assignments of property rights.

Thus **transaction costs** refer to the costs originating from the various actions taken to reduce the risk of transaction failure. Transaction costs therefore the value of resources devoted to (1) establish and enforce exclusive property rights and/or (2) define and enforce the attributes of the good or service being exchanged and (3) the losses incurred because of failure to (a) enforce exclusive property rights, (b) enforce required attributes, or (c) complete the transaction.

The point we want to show in the above hypothetical case is that most transactions from simple purchase of good to complex contracts involve positive transaction costs. The 'real world' is beset by positive transaction costs — on which account the assignment of **property rights and choice of governance structures** do matter. Assuming that positive transaction costs are not so great as to block the assignment of property rights altogether, then differential

transaction costs will warrant the assignment of property rights one way rather than another. Similarly respect to organization: except where positive transaction costs block the organization of some activities altogether, differential transaction costs will give rise to discriminating alignment — according to which some transactions will (for efficiency purposes) align with one set of governance structures and other transactions will align with others. In some, transaction costs will have a lot of bearing on the allocation, production and distribution activities.

✍ *Note that when we refer cost in economics, we are referring to opportunity costs not just the financial/accounting costs. We don't consider only the direct money expenditures rather we estimate the opportunity costs of the resources (including the agents' time) devoted in realizing the transactions. This is the correct meaning of cost in economics.*

The concept of transaction costs is the foundation of New Institutional Economics. As Ronald Choase pointed out, the organization of transactions, with the inevitable costs it incurs, determines what goods and services are produced and the capacity of any economy to take advantage of the division of labor and specialization – the two key concepts of economic theory since Adam Smith. Thus, transaction costs profoundly influence not just individual firms but the size and activities of the entire economy.

The extent of transaction costs thus determine the level and types of economic activities. The extent of transaction costs then depend on the institutional environment that determine: the degree of information problem (on prices, new technologies, and other potential market players), the extent of opportunism, the strength of defining and enforcing property rights and contract and the level of risks posed by exogenous shocks.

3.5. Sources of transaction costs

Given the above example, we can identify transaction activities that involve costs. Although there are many other cost involving transaction activities, we will discuss the most common one.

3.5.1. Information and search costs

As we discussed in earlier chapters, in perfectly competitive markets economic agents are assumed to have perfect knowledge. The presumption is they can access whatever information they need without incurring considerable costs. But in reality information are not only imperfect but also involve costs. In addition, human being has limited ability to gather and process information. The implications are that economic agents devote a lot of resources to gather information. In the above example, determining the amount of payment require a lot of information such as future relative prices, the level of payments in other areas for similar agreements (if there is), estimation of each other's potential gains, and the like. More importantly, each agent must collect information about each other's trustworthiness, reputations, past history, social status, network, and the like. Searching appropriate partner (if

there are two or more alternative partners) also require a lot of efforts. All these tasks involve costs that would otherwise been used for productive activities elsewhere in the economy.

3.5.2. Bargaining and decision costs

Having equipped with the required information, the transacting parties must make a lot of bargaining in order to reach at profitable terms of agreement. Depending on the complexity of the transaction, this can involve a lot of resources –lobbying, financing meetings, payment for third party mediating the bargaining, and the like. To achieve favorable terms and avoid possible risks, parties will have to devote time and resource in the bargaining. Once agreement is reached on general and key issues, drafting, reviewing and signing the agreement is not a simple task. It can involve a lot of cost.

3.5.3. Supervision and enforcement costs

Once the agreement is signed, each party need to monitor the other. Still this can take a lot of surveillances, supervision, hiring consultants or forming an independent organ, etc. Enforcing when there are deviations could also involve a lot of costs. This can be through legal court or through informal ways.

In short we can find these three classes of transaction costs in many economic exchanges. For instance hiring a worker require finding a suitable worker, examining potential applicants, bargaining on the wage rate, assessing the prevailing wage rates, metering performances (marginal contributions), designing appropriate incentive structure, penalizing shirking and malfeasances, and the like.

Why firms need supervisors? It is because workers may shirk, underperform, abuse firms resources, and the like. The various resources to devoted for management activities can be considered as transaction costs that would have been used for other productive activities.

The magnitude of these costs depend on a number of factors.

3.6. Dimensions of Transaction Cost

3.6.1. Behavioral pattern of the transacting parties

As explained earlier, TCE is founded on two of the key behavioral assumptions that are spring from self-interest assumption: bounded rationality and opportunism. Economic agents are assumed to center their **own interest** when they make decisions. An economic agent is assumed to be self-interest seeking with ***guile***. First, even if the intentions of agents is to promote self-interest, their level of realization is limited. This is due to information problem: access to information and limited computational and cognitive capacity. Thus they cannot be purely rational but *boundedly* rational.

Second, agents are assumed to seek their self-interest with guile. Constructing economic theory based on simple self-interest seeking (without including guile) imply that transacting parties will act in farsighted and responsible way. For instance, even if there are opportunities that maximize short-term gains at the cost of substantial reduction of future mutual gains, individuals are assumed to be committed not to take such opportunities. Simple self-interest seeking behavior when coupled with (perfect) rationality, also imply that parties precisely know the adverse effects of taking myopic opportunistic actions. That is such adverse effects can be avoided by asking parties to act responsibly. Contrary to this, TCE modify the self-interest-seeking by including guile. This guile coupled with bounded rationality help to alert agents to avoidable dangers of reneges, commitment failures, and the like. As a result, TCE takes opportunism as important behavioral assumption. Agents attempts to meet their self-interest by taking advantage of opportunities. Whether agents can realize the advantage or not depend on the environment the transacting parties are in. Thus, agents are generally assumed to be opportunistic.

Take a simple example. Suppose you lend someone money to be repaid after three years. You lend the money without interest. The reason you did this is just to assist the person to enter into business and in the hope that the person will reciprocate by doing some favor in the future. But you made the agreement verbally. Secondly, under the current circumstances, you have all the power to force him repay the loan if he fails to do so. Suppose you lost that power for some reason. Can you be sure that the person will pay his loan? It depends. Your current condition has provided the borrower an opportunity to refuse to repay the loan. That is the person can act opportunistically. What will be the outcome of this behavioral condition on the confidence of people to lend money to others? Since the future is always unknown, people in such environment will not be interested to take such risks - risk cost that block the development of credit market. Such *ex post* hazards of opportunism arise in when such long-term and incomplete contracts are implemented such environment fraught with uncertainties.

There are three options to constrain this opportunistic behavior: self-enforcement, second-party enforcement and third party enforcement. Self-enforcement require psychological conviction that such behavior is bad. The traditional belief that a person who did bad actions on someone will face bad luck in the future and this bad luck can even pass on to her family member. Similarly a feeling by opportunist person or his children that sometime in the future can fall in the hand of the victim will also create a psychological restraint from being opportunist. The emergence of the institutions of religion of various forms, norms of trust, keeping promise, oath, swearing in the name of God, and the like are society's attempt to restrain opportunistic behavior. These institutions are intended to impose some psychological cost (guilty feeling) so that the person will not act opportunistically. If we closely scrutinize our culture, belief, conventions and traditions, we can learn that many of them are to facilitate transactions by creating self-restraint on behavior people.

The other mechanism is second-part retaliation. If a person act opportunistically, the victim can retaliate. The type of retaliation the victim will take depend on the various factors: the power balance of the two (political, social and economic power), the norm of retaliation, the

legal framework, etc. If the victim is more strong (socially, economically, or politically) than the defector, he can force the defector, give ultimatum for impending retaliation, or he can take very sophisticated actions that will bring the defector at the mercy of the victim. Even if the victim is weaker, fear of retaliation may not be effective.

The last option is third party enforcement. Institutions have evolved to provide many third-party enforcement mechanisms. The victim can use social groups to take some actions on the opportunist person. This can take the form of social sanction, ostracism, use of powerful close person to retaliate, calling for local leaders (administrative and religious leaders) and other social connections. These alternatives require strong social connections. Unfortunately, it is those economically powerful who are likely to have more of this. Society also provide the weaker members other alternatives. The weak can use witchcraft/sorcery and other supernatural power to do the job. These institutions provide strong and invisible instrument to the wider society. Strong belief on sorcery/witchcraft in most traditional societies of Africa could be thought as institutional response to the problems of opportunism. These above assume the absence of formal institutions. When there are formal institutions, people can use to enforce contracts and discourage opportunism legal rules.

These and many other culture, traditions, conventions and beliefs can be thought as an institutional response by society to provide alternative enforcement and constraints: first-party, second-party and third-party constraints.

Activity

Identify at least two ***informal*** constraints for each of the following and describe the mechanisms

1. First-party restraint
2. Second-party restraint
3. Third-party restraint

Do you think these are effective means? If then, why then we see opportunism of various kinds: adulteration of products, breaching of promises and contracts, shirking of workers, etc. Why also many essential markets are missing in such society.

When all these three enforcement mechanisms fail to create credible commitment, one option for the lender (in our previous example) will be to refuse to engage in such long-term transactions. A second option will be to adjust the price of the transaction to reflect the expected hazard. A third and deeper response would be to explicitly recognize the potential hazard of opportunism and to create ex ante safeguards (credible commitments) that mitigate opportunism. Transaction cost economics advises agents to devise (give and receive) credible commitments. Farsighted agents who give and receive credible commitments will thus outperform myopic agents who are grabby.

In fact, in an environment where formal institutions are weak, these and other informal institutions will play important roles in reducing transaction costs. But mostly such institutions are not as efficient as some social scientists attempt to portray. Enforcement

through informal institutions can involves a lot of costs. In addition, handling complex transaction that go beyond the narrow social boundaries require strong formal institutions. This is one of the reasons markets thin and many markets are missing in societies where formal institutions are weak and thin. Note that these informal institutions were also common in advanced countries in the early stage of their development. It is difficult to imagine all the complex transactions we seen now in advanced countries would have been possible without complex formal institutions. Yet it must also be recognized that formal institutions can be panacea for all problems of opportunism. Informal institutions still play some roles even in advanced countries too.

In sum, one of the reasons for the emergence of diverse informal and formal institutions is to reduce *opportunistic behavior* of agents and *information problems* associated with transactions. The general hypothesis of transaction-cost economics (TCE) is that institutions are transaction-cost–reducing arrangements that may change and evolve with changes in the nature and sources of transaction costs.

3.6.2.Nature of the transactions

Uncertainty

TCE recognize two sources of uncertainties: behavioral uncertainties and uncertainties posed by the transaction environment.

The two behavioral assumptions (bounded rationality and opportunism) means that when two parties transact, it poses a lot of uncertainties. That is, transacting parties lack information about each other's behavioral attributes, attributes of the exchange (attributes of the goods or service), and the environment they are in. This generally pose a lot of risks and uncertainties. To minimize risk costs, transacting parties have to devote resources to collect information about the attributes just mentioned above. These costs are generally referred to as search costs. But one agent after devoting resources to gather, interpret, and process information, still the agent cannot have perfect information about the behavior of the transacting party, the attributes of the exchange and attributes of the environment. Agents then still assume some risk premium. The search costs plus the risk premium provide the total transaction that arise from uncertainty. In addition to the uncertainties that arise from transacting parties, strategic interaction of firms can also pose uncertainties. Rival firms can mislead information, take costly strategic moves and the like. Uncertainty of a strategic kind is attributable to opportunism and will be referred to as behavioral uncertainty.

Even if there are no behavioral uncertainty, exogenous shocks from the environment can still pose a lot of uncertainties. The stability and predictability of the macroeconomic environment, the stability of the legal environment, the social and cultural environment that determine the preferences, the political stability and the like pose a lot of uncertainties. The extent of these uncertainties determine the level of economic transactions and their profitability. These transaction cost could be so high as to block the transaction altogether. The technological level together with the institutions determine the level of the transaction cost.

If there are efficient institutions that transmit information efficiently and with small costs, if the institutions are efficient in constraining opportunistic behaviors and if the overall environment is stable and predictable, then the transaction costs tend to be small. That is if the future is certain and agents have perfect information as conceptualized in the perfectly competitive markets, then there is no resource devoted to realize the transaction. But in reality, transactions involve costs. Institutions thus arise to economize transaction costs. If society is successful in minimizing this cost, people will have the incentive to capture the gains from exchange.

Notice that this concept can also apply in political and social arena. The level of transaction costs play important role in determining political and social exchange.

Frequency

The frequency of transaction determine the level of transaction costs. Frequency is the number of times the transaction takes place within a given period of time. Frequency can range from making a one- time transaction to making frequent transaction with a given firm. The frequency of the transaction affects the costs involved to make the exchange.

Suppose there are two honey buyers: buyer A and buyer B. Buyer A is a honey trader and buyer B is a consumer who buys honey once in a season. The frequency of transactions are higher for buyer A than buyer B. Buyer A is likely to incur smaller costs for each unit of transactions than buyer B. Why? The reason is Buyer A incur smaller search costs, lower uncertainties, lower bargaining costs and the like. If you are a frequent buyer, you will have the chance to retaliate for any malfeasance behaviors by sellers. It is like comparison on the outcomes between original PD game and repeated games. Cooperation instead of opportunistic behavior is likely to be higher in latter than the former. In addition, if you are a frequent buyer, you will have better information about the trustworthiness of sellers. If you are frequent buyer, you will also develop skill in bargaining, measuring the quality of the product, the behavior of transacting parties. In sum, TCE predicts that transaction costs tend to be lower as the frequency of transactions increases.

For instance, compare the magnitude of transaction costs between the following transactions: one a fly-by-night kind of seller and the other a client seller.: Which of the two sellers

1. provide relatively reliable information about the product/service? Why?
2. have more incentive to take opportunistic actions? Why? What potential risks could be involved?
3. is likely to offer a better price? Why?
4. you will have better chance for retaliation?

The main reason you establish client relationship for the products/services you transact frequently is to minimize transaction costs. Similarly, for transactions that involve frequent transactions, firms attempt to reduce transaction costs by designing some long-term relationships.

Asset specificity

Investments on assets are of two types. Some investments are special purpose and others are general purpose. A specific purpose asset has little or no alternative use. Contracting around specific assets can be risky in that the specialized assets cannot be *redeployed* without sacrifice of productive value if contracts should be interrupted or prematurely terminated. Asset specificity arises in an intertemporal context. General purpose investments do not pose the same difficulties. For instance, one party may invest on durable **specific assets** on the agreement that a contracting party will use the specific assets. Once the investment is made and if the contracting party terminated its contract, then the specific asset will have no value as it cannot be redeployed for some other purpose. This situation can provide the contracting party the incentive to threaten the party who invested on the specific asset. The cost savings afforded by the specific assets must justify strategic hazards that arise as a consequence of the nonsalvageable character of specific assets.

Such contract hazard is called ***hold-up problem*** and the costs that arise from such risk are called ***maladaptation costs***. The most-often-discussed example of maladaptation is the 'holdup' problem associated with relationship-specific investments. Investment in such assets exposes agents to a potential hazard: If circumstances change, their trading partners may try to expropriate the rents accruing to the specific assets. The more the asset is specific, the more likely for its contracts to suffer from the hold-up problem and the higher risk costs tend to be. Hold-up problem leads to the risk of underinvestment. Changing the allocation of asset ownership between the trading parties may partially solve the hold-up problem. Overall, several governance structures may be employed. TCE holds that parties tend to choose the governance structure that best controls the underinvestment problem, given the particulars of the relationship.

The three dimensions of transaction costs are: uncertainties, frequency and asset specificity. The extent to which these dimension determine the actual level of transaction costs depend on the behavioral pattern and the extent of information problem existing in the transacting environment.

TC are not replacements neoclassical cost theory. The neoclassical production cost theory still hold. In the NIE sense then, costs are neoclassical production costs plus transaction costs.

3.7. Attributes of transactions and choice of governance structures

Transactions differ in frequency, uncertainty and asset specificity (redeployablity). However, Williamson (1991) argues that transaction costs increase with a higher degree of asset specificity, a higher degree of uncertainty, and lower frequency of transaction. Depending on the total level of transaction costs, agents align governance structure in transaction cost minimizing way. As transaction costs increases, governance structure moves from spot markets to hybrid to hierarchical forms of governance, the last form involving vertical integration or a variety of alternative governance structures or institutional arrangements of economic organization.

According to Williamson (1995), crucial features of analysis of TCE include the following:

i. the transaction is the basic unit of analysis;
ii. the critical dimensions with respect to which transactions differ (for transaction cost purposes) are frequency, uncertainty and, especially, asset specificity (this last being a measure of asset redeployability);
iii. each generic mode of governance (market, hybrid, private bureau, public bureau) is defined by a syndrome of attributes, whereupon each displays discrete structural differences of both cost and competence;
iv. each generic mode of governance is supported by a distinctive form of contract law;
v. predictive content turns on the argument that transactions, which differ in their attributes, are aligned with governance structures, which differ in their costs and competence, in a discriminating — mainly, transaction cost economizing —way;
vi. additional predictive content obtains by treating the institutional environment (political and legal institutions, laws, customs, norms (North, 1991)) as the locus of shift parameters, changes in which induce changes in the costs (and, especially, in the comparative costs) of governance; and
vii. transaction cost economics, always and everywhere, is an exercise in comparative institutional analysis — where the relevant comparisons are between feasible alternatives, whence hypothetical ideals are operationally irrelevant and the test for inefficiency is one of remediableness.

3.8. Summary

3.9. Question for Review

3.10. References

4. INFORMATION ASYMMETRY AND INSTITUTIONS

4.1. Introduction

Dear students, so far we have examined different microeconomic theories and models in which everyone in the market is equally knowledgeable or equally ignorant. In competitive model, everyone has the relevant facts such as price, technology, demand of consumers, etc. However, when we come to the real world situation, in most cases, there is no such symmetric information. In this chapter, we will discuss the case of *asymmetric information.* Specifically we will discuss the two twin problems associated with asymmetric information: *moral hazard* and *adverse selections* and the associated transaction cost implications. We then discuss the role of institutions in reducing these problems.

4.2. Learning Objectives

After going through this unit, students will be able to:

- define and explain asymmetric information;
- explain the implications of asymmetric information on transaction costs;
- show the applications of the theory of asymmetric information to explain the various missing markets and market imperfections observed in the rural areas of sub-Sahara African countries; and
- explain the implications of adverse selection and moral hazard for the emergence and development of institutions.

4.3. Thematic Plan

4.4. Information problems, moral hazard and adverse selection

Information problems can arise due to information imbalance between the transacting parties which we call information asymmetries. *Asymmetric information* is a condition that exists in a transaction between two parties in which one party knows the material fact that the other party does not. The most informed party may exploit the less informed party. For example, the worker (the agent) knows more about her skill and knowledge than the employer (the principal) does. The worker also knows more about the actual efforts she is putting toward achieving the goal of her employer or immediate supervisor.

But in addition to the uncertainties that arise due to information asymmetry between parties *ex ante* the transaction, *ex post* transaction uncertainties in the process. For instance, even if the information between parties is symmetrical at the beginning of transaction, a party may not perfectly know about the future changes in the business environment and the behavioral responses of another party. Thus, not only the bounded rationality of decision makers (about the transacting parities) pose uncertainties, but also opportunistic behavior of agents could

entail additional costs of transactional uncertainties. The behavioral sources of all these information problems are *bounded rationality and opportunism*. These information problems entail transactional costs that would otherwise doesn't exist if transacting parties were unboundedly rational and non-opportunistic.

4.4.1. Hidden Action and Moral Hazard

What is moral hazard? What transaction problems does it pose?

> *Moral hazard* is opportunism characterized by an informed person taking advantage of a less-informed person through *unobservable action*.

Moral hazard is an institutional failure where institutions fail to constrain one party from taking an opportunistic actions that would leave another party bear the consequences of the actions. Because institutions fail to force an individual to take the full consequences and responsibilities for its actions, the individual may have a tendency to act less carefully that it otherwise would. This will leave the other party to hold the consequences of the actions of the individual. To minimize such problems, a transacting party devote resources in an attempt to make sure the other transacting partner is taking appropriate actions and not taking inappropriate actions. Even then, a boundedly rational transacting party may face transaction risks associated with moral hazard. The monitoring costs added to the risk costs give rise the transaction costs associated with *moral hazard*.

Moral hazard can occur in many transactions. For example, you wanted to buy a semi-processed food product. How can you be sure that what you buy is a quality product or poor quality product (what Akerolf (1970) called it a *lemon*. To what extent the product the seller has not adulterated the product with foreign materials? In a condition where you don't know what actions has taken in processing the product, you cannot be sure that what you buy is a good quality.

Another common example is the problem observed in the insurance markets. For example, insured people (the agents), feeling that they will claim the necessary indemnity payment, may engage in risky behaviors that increase the probability of large claims against insurance companies, or they fail take reasonable precautions that would reduce the likelihood of such claims. Similarly, an insured homeowner may fail to remove fire hazards. A person who is unable to pay his debt on time may not be able to build capital goods in order to just appear that he is really poor. But in some cases individuals may go beyond such less careful act and can intentionally take sophisticated and unobservable actions in order to capture some benefits from other parties inappropriately. In some circumstances, individuals can even take observable opportunistic actions. If an ordered institutional environment turns out to anarchic for some reasons, the situation may provide the individuals the incentive to openly refuse to pay their debt. All these pose risk and uncertainty on a transacting party and hence raise the transaction costs. The implication of the rise in transaction costs is clear, it constrain the markets from attaining efficient outcomes. If the transaction costs are high, it can entirely block the emergence of these transactions. Livestock and crop insurance, for example, gives

farmers an incentive not to invest in the prevention of crop failure but rather to rely on cash income from the insurance proceeds of the failed crop.

4.4.2.Hidden Information and Adverse Selection

What is adverse selection? What transaction problems does it pose?

> *Adverse selection* is opportunism characterized by an informed person's benefiting from trading or otherwise contracting with a less informed person who does not know about an *unobservable characteristic* of the informed person.

A trading party may select an individual who is opportunistic and can face transaction costs. Adverse selection problem is associated with the difficulty of one party in selecting a honest and trustworthy transacting partner. In circumstances where the seller knows more about the product it is selling, the buyer cannot be sure what standard the quality of the product is. In such conditions, buyer devote a lot of resources in searching a reliable seller. Even then, a boundly rational still face transaction risks of *selecting adverse* seller. The search cost added to the risk provide the transaction costs associated with *adverse selection*.

For example, farmers who buy insurance policies for their livestock could be better informed about livestock health risks than a prospective livestock insurance company does. The consequence of this is that it is those farmers whose livestock are in greater risk willing to buy insurance policy than those farmers whose livestock are relatively in less risk condition. Since the insurer does not perfectly know about the risk distribution, it tend to raise the insurance premium to minimize the costs. In effect, the market for livestock insurance may be sub-optimal. For research purpose, this can be tested assessing the positive correlation between insurance coverage and risk occurrence.

4.4.3.Implications of asymmetric information

The presence of asymmetric information is the major causes of many of the market failures: market imperfections and missing markets. The fact that one transacting party has better information over the other means that the better informed party can exploit the less informed party. To minimize this unnecessary exploitation, the less informed party will devote a lot of resources in searching a reliable party.

We have seen that the monitoring costs plus the risk costs give rise to transaction costs associated with *moral hazard.* Similarly, the search costs plus the risk costs give rise to transaction costs associated with *adverse selection.* Depending on the observability of the *actions* a transacting party may take and the observability of the behavioral attributes of party, moral hazard and adverse selection can involve large transaction costs. Many of the transactions in the rural areas suffer from one or both of these information problems.

The critical issue constraining the agricultural sector in sub-Sahara African country is information problem. The primary reason for the slow adoption of agricultural technologies by African farmers is that the market fail to provide the right incentive for quality products.

Because the market fail to discriminate the good quality product from poor quality product, both poor and good quality products will receive very similar prices. In such circumstance, devoting resources and efforts to improve quality will not pay. Thus farmers will not have the incentive to improve quality. As a result, all farmers will tend to produce the *lemon*

This is also the main factor constraining the agricultural export markets. As long as these countries fail minimize the information asymmetry between exporters and importers about the quality of agricultural products they are buying and about the reliability of exporters, these countries cannot exploit the full potential of the benefits of exports.

4.4.4.Alternative institutional responses to asymmetric information

In response to transaction costs problems, transacting parties and society at large take a lot of measures to reduce information asymmetry. The extent of the information problems and the associated transaction costs depend on the efficiency of institutions. Given the technological levels, set of institutional responses to the above transaction cost problems can be taken at two levels: organizational level and societal levels. While the strategic responses of the principal are discussed under organizational theory (along Williamson approach). The latter are discussed from the perspective of the institutional environment and its evolution (along North's approach). Here we will discuss the most common alternative responses.

Information sharing

Firms to economize information cost can design some way of sharing and pooling information. For instance, banks can easily pool borrowers profile and history. This information sharing will help banks to reject borrower who failed to pay their debt in another bank. It will help banks to reduce default risks that arise from adverse selection problems.

Equalizing information

These are strategic responses to reduce information differences between the principal and the agent. The following are some of the strategies.

Screening - Uninformed people may try to eliminate their disadvantage by screening to gather information on the hidden characteristics of informed people. If the originally uninformed people obtain better information, they may refuse to sign a contract or insist on changes in contract clauses or in the price of a good. Insurance companies' request for health certificate for life insurance policy seekers is to economize transaction costs of adverse selections.

Activity

Can this be effective for livestock health insurance? Discuss.

In addition, insurance companies also collect information up to the point at which the marginal benefit from extra information equals the marginal cost of obtaining. Over time, insurance companies have increasingly concluded that it pays to collect information about

whether individuals exercise, have a family history of dying young, or engage in potentially life-threatening activities. If individuals but not insurance companies know about these characteristics, individuals can better predict whether they'll die young, and adverse selection occurs.

Signaling - Signaling is used primarily by informed parties to try to eliminate adverse selection. The agent can create a condition where agents provide signal. Likewise, potential employees use a variety of signals to convince firms of their abilities. Only people who believe that they can show that they are better than others want to send a signal. In addition, the principal can also identify which attributes that signal the right customer. For example, insurance companies intentionally put their offices at the top floor of many story building without lift. The purpose is to examine the physical fitness of the individual as it climbs to the office. To what extent this reduce adverse selection depend on the accuracy of the signaling.

Universal coverage – adverse selection can be prevented if informed people have no choice. For example, a government can avoid *adverse selection* by providing insurance to everyone or by mandating that everyone buy insurance. Many states require that every driver carry auto insurance. They thereby reduce the adverse selection that would arise from having a disproportionate number of bad drivers buy insurance.

Laws to prevent opportunism – product liability laws protect consumers from being stuck with non-functional or dangerous products. Moreover, many state supreme courts have concluded that products are sold with an implicit understanding that they will safely perform their intended function. If they do not, consumers can sue the seller even in the absence of product liability laws. If consumers can rely on explicit or implicit product liability laws to force a manufacturer to make good on defective products, they need not worry about adverse selection

Third-party comparisons – Some non-profit organizations, such as consumer groups and non-profit firms publish expert comparisons of brands. To the degree that this information is credible, it may reduce adverse selection by enabling consumers to avoid buying low-quality goods.

Standards and Certification - The government, consumer groups, industry groups and others provide information based on a standard: a metric or scale for evaluating the quality of a particular product/service. For example' numerous attributes related to body size and cup test are used to standardize coffee types into different brands and grade levels. This is to equalize the information about quality of the coffee between the buyer and the seller. In addition to providing access to market information can help consumer learn about coffee quality levels.

Activity 5.2.

1. Suppose the institutional environment is such that any pharmaceutical products can be sold in a supermarket by any salesman who study marketing not pharmacy. How can you be sure that a tablet is a ‘medicine’ or a ‘candy’?

2. Suppose any layman is allowed to provide veterinary service?
    a. How can people identify a 'medical doctor' from a 'carpenter'? Discuss
    b. Discuss the advantages and the disadvantages of licensing veterinary experts.
3. What would happen if there was no institutions of traffic - the driving rules, different sign posts, driving license, etc.? Discuss
4. Suppose there is no grading and standardization in the coffee markets in the country (both in the domestic and export market).
    a. What opportunistic actions farmers could take under such circumstances?
    b. What potential costs these opportunistic behaviors of farmers will pose on buyers? Discuss traders and consumers separately as buyer.
    c. What strategic response do each group of buyers take to minimize these costs?
    d. To what extent are they effective?
    e. Can the strategies used by domestic buyers be equally used by foreign buyers (importers)?
    f. What effects will this situation have on the performance of the export market?
    g. What this effect in turn have on the coffee producers?
5. Suppose now there is an institution that standardize and grade coffee for the export market.
    a. What possible costs this activity will have on the society at large? In terms of the societal costs of devoting resources for the activities
    b. What effects this will have on the performance of the export market? Both positive and negative
    c. What challenges this institution could face?
    d. Are there any potential long term adverse effects?

All these are societies' attempt to reduce asymmetric information.

When one or more of the above institutional responses inexpensively and completely inform consumers about the relative quality of all goods/services and reliability of the trader without restricting the competitive environment, the institutions will be considered efficient and their outcome socially desirable. Not only these activities involve a lot of costs from societal point of view, in some conditions, such programs can also have harmful effects. The efficiency of such institution thus depend on the extent to which they minimize transaction costs. Remember that we conceptualize transaction costs in terms of societal cost. Thus, the transaction costs existing in a given institutions should not only include the opportunity costs of realizing the rules, it should also include the adverse effects of its existence. This second cost, however difficult, can be judged by comparing the outcome it would otherwise be in the next best institutional arrangement.

For instance, standard and certification programs that provide degraded information, for instance, may mislead consumers. Many standards use only a high- versus low-quality rating even though quality varies continuously. Such standards encourage the manufacture of products that have either the lowest possible quality (and cost of production) or the minimum quality level necessary to obtain the top rating. If standard and certification programs restrict salable goods and services to those that are certified, such programs may also have anticompetitive effects. Many governments license only professionals and craftspeople who meet some minimum standards. People without a license are not allowed to practice their profession or craft.

Society may align governance structure in a cost minimizing ways. Yet the level of transaction costs could be so high as to make no alternative governance structure, given the current institutional context, economically feasible. Particularly the institutional context in the rural areas of sub-Sahara African countries are such that that generally create great information asymmetry between transacting parties. The fragmented and scattered settlement pattern, the infrastructural problems, the legal systems, the social structure and the small individual farmers (in terms of individual effective demand and marketed supply) pose special challenges to improve institutions. In addition to these micro-contexts, it is also common to observe macroeconomic, political and institutional (formal) instability. Such political instability may provide parties incentive to take opportunistic actions. Due to this institutional failures, many markets that require long-term commitments that are critical for development are missing in these countries. Thus, institutions are very important in reducing such costs and creating stable and predictable business environment.

In such cases, if the transactions have to occur, parties use create some forms of institutions that economize transaction costs. In most local agricultural markets of sub-Sahara African countries various social institutions to minimize information asymmetry.

Most of the formal regulatory institutions discussed above that reduce information asymmetry are missing in the rural areas of sub-Sahara African countries. But even if they exist, the small and infrequent size of individual transactions make the use of these institutions less economical. As a result, parties attempt to use personal connections and social networks to economize transaction costs. Clientelization, the use of family and social groups in transactions are all different forms of social institutions used to constrain opportunistic behaviors and incentivize commitments. Theories in the social capital theory argue that interpersonal connections and social networks reduce transaction costs, some of these reductions were made at the expense of limiting transactions within a narrow social boundaries. To what extent these social institutions are efficient in minimizing transaction costs and in expanding markets is an empirical questions. Recently, researches have attempted to evaluate the effectiveness and efficiency of social capital in reducing transaction costs.

In an institutional environment where such social networks are less feasible, informal **brokers** emerge to profit by economizing information costs. The use of brokers in the livestock markets and interregional agricultural trade is common in these countries. In other contexts, parties also attempt to minimize information asymmetry by signaling reputations.

One of the important tasks of institutional economics is to compare the existing institutional arrangements with feasible alternative institutional arrangements.

4.5. Summary

The foundation of Agency Theory (Principal-Agent problem) is the two transaction problems that arise mainly due to asymmetric information

The two information problem that underlay Agency Theory are *moral hazard* and *adverse selection*

These two information problems causes for the transaction costs to be higher. When a transaction is fraught by one or both of these problems, transaction costs will be high to the extent to block many potential transactions.

We have seen, many of the transactions in the insurance, the credit, labor and many input and output markets suffer from these twin problems of asymmetric information. These problems are especially more serious in the rural and pastoralist settings of sub-Sahara African countries.

The principal-agent problem generally arise in transactions that require long term contracts.

It arises when a principal compensates an agent for performing certain acts that are useful to *the principal* and *costly to the agent* and there are elements of the performance that are *costly to observe.*

At organizational level, the principal can design incentive compatible strategy that minimize these problems. IBLI is an example used to eliminate transaction cost problems that arise as a result of moral hazard and adverse selections.

Cooperation among principals to share and pool information about agents contribute in reducing the level of information asymmetry. In addition, strategies such as signaling and screening are also alternative strategies used by the principal to minimize adverse selection problem.

In addition to the strategies taken by the principal, society can improve the institutional environment in such a way that incentivize honest behaviors and discourage opportunistic behaviors. A variety of institutions that reduce information asymmetry are discussed.

Development of rules enforcing universal insurance coverage such as health insurance and auto insurance are example of these.

Different laws that discourage opportunism such as product liability laws, product safety rules and the like.

Third-party comparisons by non-profit organizations, such as consumer groups and non-profit firms publish expert comparisons of brands. To the degree that this information is

credible, it may reduce adverse selection by enabling consumers to avoid buying low-quality goods.

Standards and certification –is the most prevalent and important institutional mechanism that discourage opportunism and that incentivize commitments.

IBLI is a pilot institutional innovations in response to the **eliminate** the twin information problems of moral hazard and adverse selection that cause the principal-agent problem. To what extent this institutional innovation will be effective is a matter of time.

4.6. Questions for Review

4.7. References

5. CONTRACTING AND AGENCY THEORY

5.1. Introduction

Dear students, in our discussions of behavioral aspects in Chapter two, we have discussed about information problems. There, we have explicitly acknowledge the information problems and its implications on behavioral patterns. We saw not only the environment cannot provide costless information, but the computational and cognitive capacity of human agency. This provided the way for both opportunism and bounded rationality. In this chapter, we will discuss the implications of this information imperfections on the long term contract relationship between two ((or more) parties designated as **Principal** and **Agent**. We will emphasize the effects of institutions (which is the main subject areas of NIE) in governing the relationships of these parties and the role it plays in reducing transaction costs that arise due to the imperfect information.

The purpose of this chapter, as in the other, is not to discuss the detail microeconomics of agency theory. But to magnify the institutional aspects underlying the theory. We will discuss the problems arising in long term contracts. This is because, principal-agent problem arise in long term economic contract relationships. This will take us to the agency theory. In this section, we will first give an overview of Agent Theory (or sometimes called Principal-Agency Problem). We will then show how the problems of *moral hazard* and *adverse selection* (Principal-Agency Problem) poses contract problems and the strategic responses of the principal to minimize the transaction costs that arise from these twin problems of information –adverse selection and moral hazard. To show the importance of these two behavioral problems, we will discuss the difficulties that arise in livestock insurance and other markets. This will show as how these problems raise the transaction costs to a level so high to block livestock insurance market to emerge in the pastoralist (rural) areas. This will also show how the conventional insurance contracting fail to resolve the problems in the rural context. We will then move to an interesting case where pilot institutional interventions made to provide livestock insurance service to the pastoralist areas of Ethiopia and Kenya.

5.2. Learning Objectives

After reading this chapter, students will be able to:

- List the different types of contracts;
- Explain why real world contracts are largely incomplete;
- Describe the sources of Principal-Agent Problem;
- Explain the relationship between information asymmetry and agency theories;
- List the important principles for efficient contracts; and
- Elaborate the relevance of IBLI in terms of agency theory.

5.3. Thematic Plan

5.4. Contracting

5.4.1. Types of Contract

Contracts in neoclassical economic theory are generally assumed to be complete. According to the theory, when contracts are incomplete, adaptation to changes can be enforced through appropriate legal system.

To what extent real world contracts will be complete depend on the behavioral assumptions. Let us see the outcomes of contracts under alternative behavioral assumptions. Let us take four combinations of behavioral assumptions:

1. **unbounded rationality/nonopportunism** – a condition of contractual utopia;
2. **unbounded rationality/opportunism** – a case where contracts can be made to work well by recourse to comprehensive contracting;
3. **bounded rationality/nonopportunism** – where contracting works well because of general clause protection against the hazards of contractual incompleteness; and
4. **bounded rationality/opportunism** – which reflect more the real world contracting problems and the difficult contracting issues reside. The entries that appear in the following four-way classification of contract are offered as an overview.

		Rationality	
		Unbounded	Bounded
Opportunism	Absent	No contract problem (1)	'General clause' (2)
	Present	Comprehensive contracting (3)	Serious contracting difficulties (4)

Table --- Contracting problems associated with alternative behavioral patterns Williamson (1995)

In the first case (upper left), since there is no information problem and computational capacity, all contracting parties not only know what desirable terms of their own but also others. They can thus agree on contract terms that exactly meet their self-interest. Since agents are assumed to be self-enforcing and trustworthy to the agreement. Then not only the contract will be perfect ex ante, parties also take appropriate measures to *ex post* contract problems. In the second case (upper right), contracting parties are boundedly rational and hence the may not develop complete contracts *ex ante*. But since they are assumed to be non-opportunistic, agreeing on general clause will be enough as they take appropriate measures when there are contracting problems ex post.

In the third case (bottom left), the transacting parties know perfect terms of contract *ex ante* but since parties can act opportunistically, they need to develop a *comprehensive contract* that describe each and every details. The last (bottom right) represent real world contracting situation. In this case, not only parties are boundedly rational, they are also assumed to be opportunistic. Since they are boundedly rational, the contract tend to be incomplete *ex ante*. This parties are opportunistic, they tend to use every loophole provided by the incomplete contract to act against the interest of each other. This situation pose a lot of contracting problems and raise the transaction costs.

Transaction costs of *ex ante* and *ex post* types are usefully distinguished. The first are the costs of *drafting, negotiating, and safeguarding an agreement.* This can be done with a great deal of care, in which case a complex document is drafted in which numerous contingencies are recognized, and appropriate adaptations by the parties are stipulated and agreed to in advance. Or the document can be very incomplete, the gaps to be filled in by the parties as the contingencies arise. Rather, therefore, than contemplate all conceivable bridge crossings in advance, which is a very ambitious undertaking, only actual bridge-crossing choices are addressed as events unfold. Safeguards can take several forms, the most obvious of which is common ownership. Faced with the prospect that autonomous traders will experience contracting difficulties, the parties may substitute internal organization for the market. This is not, to be sure, without problems of its own. Moreover, *ex ante* inter-firm safeguards can sometimes be fashioned to signal credible commitments and restore integrity to transactions.

The frequency and asset specificity of transactions give rise different forms of contracting: market, trilateral, bilateral and unified governance structures.

Relational contracting

Relational contracts are usually embedded in some forms of social relationships, The reference point for effecting adaptations remains the original agreement, the reference point under a truly relational approach is the entire relation as it has developed through time. Such contracts are loosely defined, their implementations are flexible and their enforcements are provided by the social relationships.

5.4.2. Contract incompleteness

Contractual incompleteness exposes the contracting parties to certain risks. We will discuss these costs under *ex ante* and *ex post* transaction costs.

Ex ante problems

The adverse selection problem where one party to the trade has private information that it can choose selectively to disclose, which asymmetry the other party cannot overcome except at great cost. The condition is a manifestation of a more general problem that is responsible for measurement difficulties, namely, idiosyncratic information.

Ex-post problems

Information asymmetries of two kinds can be distinguished at the contract execution stage. The more familiar is where one party to the trade has more knowledge over the particulars than does the other. A second, less widely recognized type of asymmetry takes the form of discussed by Alchian and Demsetz (1972) about shirking of workers. Here each party to the transaction knows the full truth of what has occurred, but it is costly to disclose the facts to anyone other than an on-site observer. Even if workers know each other's contributions in a given cooperative work activities, they will prefer the supervisor do the assessment. Ex post costs of contracting take several forms. These include

1. the maladaption costs incurred when transactions drift out of alignment
2. the haggling costs incurred if bilateral efforts are made to correct *ex post* misalignments,
3. the setup and running costs associated with the governance structures (often not the courts) to which disputes are referred, and
4. the bonding costs of effecting secure commitments.

Monitoring and enforcing costs depends on many factors: the complexity of the agreement, the uncertainties arise from exogenous shocks (macroeconomic, socio-cultural, political and legal environment) and behavioral pattern of parties, specificity of the asset, the repetitiveness of their agreement.

The incompleteness of contracts means that there are non-contractible elements due to difficulties in contemplating in advance all possible future contingencies and measuring performance under each contingency. Because of this unspecified portion of the contract, there are potential economic problems in the sharing of joint output between contracting parties, and hence incentive problems in investing (up-front) in relation-specific assets.

5.5. Principal-Agent Problem

The principal agent problem is associated with the principals difficulty of knowing the right agent and the actions agent takes in a long-term contracts. To be clear, we will discuss this by taking an insurance contract as an example.

As we discuss at the beginning of the module, compared to business in other sectors, business activities in the agricultural sector are fraught with a lot of risks – natural and market risks. Thus, insurance markets are especially more important in the agribusiness than other business activities. Yet the insurance market suffer from these two agency problems: adverse selections and moral hazards. Unlike other transactions, insurance transactions require long-term contracts that require long-term commitment. The two principal-agent problems - *moral hazard and adverse selection* – pose transaction challenge. *Ex ante* problems are that the insurer (principal) cannot specify appropriate term as it cannot determine the individual's (agent) risk level. Theoretically the insurer may not need to know the individual risk level if the distribution of insurance seekers follow the actual distribution of risk levels in the population. In this case, the insurer can specify some average premium in such a way that the

likely claim of the high-risk individuals offsets the low-risk individuals. But in reality, not only the insurer may not perfectly know the distribution of the risk, the distribution of the insurance seekers may not follow actual distribution. Rather, it is argued the high-risk individuals are **more likely** to be willing to buy insurance compared to low-risk individuals. In such cases, the insurer can set a high premium for all insurance seekers. This will discourage the low-risk individuals because the high-premium is not proportional to their individual risk levels. Even if we ignore the problem the above strategy will create on low-risk individuals, it still pose a problem because the insurer doesn't also know how high is the risk level of the high-risk individuals. It can be that only those individuals whose risk level are so high as to be justified by the 'high premium'. To determine an appropriate premium and to make sure that it is not selecting only the adverse insurance seekers, it will have to collect a lot of information. The search cost will be high. For example, the insurance company may demand health certificate for livestock to determine the health risk. This will involve cost. Similarly, the insurance company need to collect a lot of information. Even after doing all these, a boundedly rational insurer will still face uncertainty. The information cost plus the risk cost give the transaction costs posed by *adverse selection*.

But in addition to this, the insurer also face another information problem. Once the individual bough the insurance policy can take hidden action that entail additional cost on the insurer. It may be very difficult to monitor the actions of livestock herders. Livestock herder can slaughter the livestock and still claim insurance payment for deaths whose causes are not in the policy. Moreover, the insured livestock herder may not take the necessary precautionary actions to avoid the hazard. It can rather take risky actions. To minimize these uncertainties, the insurance company incurs monitoring costs. Yet, a boundedly rational monitor can still face uncertainty. The monitoring costs added to this uncertainty costs give rise to transaction costs posed by *moral hazard.*

The transaction costs posed by the adverse selection plus the transaction costs that arise due to moral hazard give rise to total transaction costs. Depending the institutional environment and the technology level, this transaction costs could be so high as to block insurance transactions.

Exactly the same argument can be made for credit services. Principal-Agent problems also pose a similar transaction costs issue in the labor market. The employer may not exactly know the distribution of individual abilities of job applicants. In addition to the costs the searching, testing, selection, bargaining and agreement tasks, the employer may still cannot be certain that incompetent individuals are not recruited. It is to minimize this most employers assign probation period before they approve the recruitment. But even after all these efforts, an employer cannot just leave for the workers to manage themselves. The employer will have to devote a lot of resources to monitor and measure the performances of the worker. Even then, hidden actions such as shirking, using principal's asset for personal use, and the like that whose costs are born by the principal but whose benefits accrue to the agents (workers). All these are transaction costs that

arise due to information problems. The theory can be extended into numerous long-term contracts.

In all these cases, contract incompleteness becomes the main reason for the emergence of many institutions (norms, traditions, conventions, etc.) in the society. Close examination of the social relationships in developing countries can provide insights on the purposes of many informal institutions.

1.1. Agency Theory

An ***agent*** is a designated economic actor who, acts for, on behalf of, or as representative for other economic actor designated as ***principal.*** Agency relationship is then the relationship between the principal and agent in a particular domain of decision problems. The relationship between employer (principal) and manager (agent); the manager (principal) and workers (agents) can both be considered as agency (principal-agent) relationships differing in the domain of decisions.

It arises when a principal compensates an agent for performing certain acts that are useful to *the principal* and *costly to the agent* and there are elements of the performance that are *costly to observe*. This is the case to some extent for **all contracts**, given that we live in a world of information asymmetry, uncertainty, and risk. Principals do not know enough about whether (or to what extent) a contract is being or has been satisfied. The solution to this information problem, closely related to the moral hazard problem, is to ensure (as far as possible) the provision of appropriate incentives so that agents act in the way principals wish them to. It involves changing the institutional arrangement (rules of the game) so that the choices that the principal predicts the agent will make coincide with the choices the principal desires.

Agency theory studies the design of *ex ante* incentive-compatible mechanisms to reduce agency costs in the face of potential *moral hazard* by agents: it addresses the question of how a principal (for example, an owner of capital or manager of labor) can structure contracts, incentives, and sanctions to encourage, at low cost, agents (users of capital, or laborers) to behave in ways that will lead to the achievement of the **principal's goals**. Alternative strategies can also be designed to minimize the costs of constrain adverse agents and encourage suitable agents. They are largely concerned with the motivational problems posed by the relationships and the design of incentive-compatible mechanisms to reduce agency costs and in some case constrain opportunistic actions.

The agency theory is very relevant in explaining the transaction problems observed in many markets. This approach address principal-agent problem in terms of principal's strategy in designing incentive compatible arrangement that economize the transaction costs posed by the agency problem. Such strategic responses of the principal is discussed in the theory of economic organizations.

5.6. Principles of contracts

In a voluntary transaction context between the principal and the agent, the principal has to design incentive-compatible contracts. Milgrom and Roberts (1992) identify four basic principles of contract design:

1. The informativeness principle: any measure of performance that (on the margin) reveals information about the effort level chosen by the agent should be included in the compensation contract.
2. The incentive-intensity principle: an optimal intensity of effort is devoted to solving the principal-agent problem, so it will to some extent always be "not fully resolved," and thus principal-agent issues are always subject to further experiment and contest in the public and private sectors.
3. The monitoring intensity principle: situations in which the optimal intensity of incentives is high correspond to those in which the optimal level of monitoring is also high.
4. The equal-compensation principle: activities equally valued by the employer should be equally valuable (in terms of compensation, including such nonfinancial aspects as pleasantness) to the employee. This principle relates to the problem that employees may be engaged in several activities, and if some of these are not monitored or are monitored less heavily, they will be neglected, as activities with higher marginal returns to the employee are favored. Targeting certain measurable variables may cause others to suffer. For example, if agricultural extension workers are rewarded by the volume of input packages sold to farmers or the number of loans granted to farmers, they may de-emphasize equally or more important aspects of their role that were not explicitly targeted in their performance contract.

5.7. Index Based Livestock Insurance (IBLI): principal's strategy

Rural institutional environment is characterized by pervasive risk, information asymmetry, and high transaction costs. As a result, moral hazard and adverse selection are the key problems constraining the insurance and the credit markets. In response to these problems, rural societies have developed agrarian institutions as substitutes for missing credit or insurance markets. These institutions include sharecropping and other forms of interlocked contracts among land, labor, credit, inputs, and outputs.

Some transactions may suffer from both problems of asymmetric information. For instance, the livestock insurance company may suffer from the problems of moral hazard and adverse selection. The insurance company doesn't know about the risk distribution and hence likely to select adverse farmers. This increase the costs. In addition, the insurance company, however it monitors the actions, it can still take unobservable actions that entail costs on the insurer. What possible institutional design can solve these problems.

An institutional innovation is attempted in recent time in the insurance market to minimize the two key problems: moral hazard and adverse selection problems. This is called Index-Based Livestock Insurance (IBLI) initially implemented in Northern Kenya and recently in Southern Ethiopia.

The purpose is to protect pastoralists against livestock mortality losses due to serious forage scarcity. The conventional insurance system cannot work due to the high transaction costs that arise due to the inherent problems: moral hazard and adverse selection problems. The traditional and indigenous insurance methods may solve these problems through social relationships. But the problem is such drought hazard are *covariate risks* i.e. they occur at a time on all social groups. In such conditions, no member will have the capacity to help other members. If the conventional and the traditional insurance methods cannot work, a new incentive compatible approach is necessary. It is in view of this IBLI is introduced.

The idea of IBLI is this. It doesn't measure individual risk level, but it measures covariate risk levels such as drought hazard. It is measured with an index. The index is a single-valued, specific measure associated with insured-risk upon which payment decisions are made. The index has a threshold level below which livestock mortality is considered not serious and no payment will be made and payment will be made for observed index level above the threshold level. Thus, if the drought was found to exceed the threshold level, at a given season, all farmers who bought the insurance policy will be get indemnity payments whether individuals lost livestock or not. If on the contrary, the drought level was found to be below the threshold level, no one will get indemnity payment whether the individual lost some livestock for any reasons or not. These are to eliminate the transaction costs that arise due to twin information problems - moral hazard and adverse selection.

For index based insurance to work, the type of **risk must be**:

- *covariate* in nature – this is to avoid individual opportunistic behaviours – moral hazard
- quantifiable and predictable – it will be difficult for the insurer to determine the insurance premium
- indexable

The index level is objectively measured using the increasingly popular remotely sensed Normalized Differential Vegetation Index (NDVI). NDVI is indicator of vegetative cover on rangelands and is used to predict covariate herd mortality in a particular location. An objectively measured predicted herd mortality index constructed from such strong predictive relationship is then used to trigger IBLI's indemnity payments for the insured in such coverage area.

A good index must be:

i) Easy to measure,
ii) Precise indicator of insurable risk (in this case covariate drought risk),
iii) Cannot be easily manipulated (by the insuree, insurer or any other party) and
iv) Consistently available

Index insurance avoids problems that make individual insurance unprofitable for small, remote clients:

- No transactions costs of measuring individual losses,
    - N*o moral hazard* problem as no single individual can influence index
    - *No adverse selection* as payouts do not depend on the riskiness of insuree
- Available on near real-time basis: faster response than conventional humanitarian relief

5.8. Summary

5.9. Question for Review

5.10. References

6. THE ECONOMICS OF PROPERTY RIGHTS

6.1. Introduction

This chapter discuss about one of key economic element: property rights. It starts with comparison between property right theory neoclassical economists and new institutional economists. In order to facilitate subsequent discussions and to present a relevant case for sub-Saharan African countries, we provide highlights of Hardin's 'The Tragedy of the Commons'. It then discuss the long standing debate between private and common property ownerships from NIE perspective. It then short description of Coase theorem and its implications to institutional aspects of property rights. This will take us to the discussion of the role of efficient property rights institutions in determining economic performances.

6.2. Learning Objectives

After reading this chapter, students will be able to:

- Explain the distinction between neoclassical property right theories and NIE property rights theories;
- Explain Hardin's tragedy of the commons;
- Draw implications of Hardin's tragedy of the commons to common-pool resources in sub-Saharan African countries;
- Describe the pros and cons of private and common properties;
- Explain Coase theorem; and
- Explain the roles of property rights institutions in economic performances.

6.3. Thematic Plan

6.4. Neoclassical and NIE Theories on Property rights

Neoclassical economics assume private ownership of resources in most economic analyses. When the unit of analysis is property rights itself, it predicts private ownerships as the most efficient property rights arrangement. Thus, any departure from private property rights imply that inefficient allocation of resources. That means, economic agents can gain from changing the property right arrangements toward private ownership. The presence of this economic incentive provides economic agent to modify the existing ownership toward private ownership. For instance, given the economic losses that arise from common property rights, economic agents attempt to minimize the losses by modifying the common property rights regime into private one as soon as the private benefits of so doing outweigh the private costs. Changes in relative price changes induced by technological changes or some other exogenous shocks may induce adjustments in property rights. Neoclassical economics fail to deal the process by which property rights institutions changes and stagnates.

NIE on the other hand analyze the efficiency of existing property rights institutions and the process of their change in the wider context of institutional environment. Accordingly, NIE take political institutions at the primary determinant of property right institutions that defines and enforce property rights. And changes in the property right institutions comes as a

political process that involve negotiation and bargaining among immediate members or lobbying and power friction at the higher levels of government. In this sense, however the existing property rights institutions are inefficient from societal point of view, beneficial changes may not occur if the distributional implications of the change compel influential parties to oppose it. Thus inefficient property rights institutions can persist.

There are three lines of analysis in the New Institutional Economics about property rights: Williamson's work on *contracts*, in the lens of governance structures, demonstrated that property rights are vulnerable to *opportunistic predation* and that *private ordering is usually less costly than the legal system* in enforcing rights. The second line of works by Douglass North, in the lens of historical and institutional evolution, show how differences in the distribution and quality of enforcement of property rights affect the different ways societies develop. The third line of work by Elinor Ostrom, in the areas of natural resource management and collective actions, expanded the concept of property rights by analyzing how the damaging effects of poorly defined and enforced private property rights can be avoided through community governance.

Though both theories emphasize the role of property rights in determining incentive structure, neoclassical economic theories assume the evolution toward private property ownership as an efficient long run outcome. In addition, neoclassical economics put heavy emphasis on private property rights. On the contrary, NIE emphasize the role of institutions in securing property rights and the possibility that institutions perpetuate inefficient property rights. Moreover, NIE recognize mixture of property rights in addition to private property ownerships.

6.5. Hardin's Tragedy of the Commons and the Problem of Open Access

Hardin to the case of open-access grazing land as common property. In this case, the marginal private pasture costs of adding one more animal will be zero. For simplicity, assume there are no other costs of rearing animals, The marginal benefits of rearing animal will be given by the market price of the animal. In this case, the rancher achieve maximum profits at the level where the marginal benefits of rearing animal is equal to zero (because by our assumption MC=0). The rancher will increase the number of animals until the marginal benefits of the last animal reaches zero. This imply, every individual farmer attempt to have as large number of livestock as it can. This will put a great pressure on the grazing land and lead to deterioration of the land. This is a common case in most communally grazing lands in the farming and pastoralist communities. The implication is that these common properties will be efficiently used if they are owned privately.

Some economists since the Hardin's work of the tragedy of the commons, a lot of controversies prevail on the performance and effectiveness of the private vs collective ownership of especially natural resources.

Activity

Taking a case of pastoralist areas you know (or by collecting information from various sources), try to compare the natural resource base of the pastoralist society in some distant past (say 100 or 200 years before) with the current situation. Try to test both arguments and

explain which alternative theory explain more the current natural resource situation. Are things in these areas turned out to be worse as predicted by Hardin or is it the collective actions that enabled these societies to resolve natural resource management problems as argued by Ostrom.

1. Try to explain the realities of the areas under consideration based on one of the two theory.

2. Which theory do you think relevant for your case?

3. Indicate key strengths and areas of applications in the context of your case.

Important not for the discussion - *in your argument, you are requested to avoid (or undermine even if sounds true) some simple and romantically biased explanations founded on conspiracy theories. This and similar theories externalize every natural resource and other economic problems observed currently in society as caused by, say government, the Western society, neighboring society or any other external agent). Carefully note that this is not to entirely deny that external forces has no adverse effects on societies but it is not only to intentionally limit the boundaries of your discussion, but also to help you consider the intricate and self-enforcing socio-economic problems hampering the progress of societies.*

Recently theories in the areas of collective actions (Ostrom and others) strongly argue against Hardin's proposition. The main critic of this theory is that private property rights are not a panacea for all resource problems. Their main argument is that institutions encourage cooperative actions to constrain in appropriate exploitation of common-pool resources. Informal institutions have a variety of mechanism to constrain opportunistic actions, to encourage cooperation and appropriately govern common-pool resources.

Note that even if property rights are established and enforced by legal system, rights are more often enforced by etiquette, social custom, and social ostracism. Particularly, in countries like sub-Saharan African countries where the legal system is weak and informal constraints such as social norms, collective actions, etiquette, and the like plays important role in facilitating transactions.

But are these informal constraints efficient? Do they precisely enforce agreements? Do they serve members impartially? Or the one with higher social status will have more bargaining and enforcement power compared to the one with lower social status? Do these informal constraints involve no costs?

6.6. Property rights

In a world of Robinson Crusoe property rights play no role.[1] Property right is a societal issue. Property rights define the expectation one can hold in dealing with others. The expectations can be explicitly stated in the laws in which case may be enforced formally or they can simply imbedded in the norms, customs, and conventions of the society in which case expected to be understood and accepted by the most of the members. Thus, institutions define property rights. As we mentioned earlier, even if there are laws that define rights of a given property, they cannot be considered as institutions if they are not enforced.

Property rights specify how persons may be benefited and harmed and, therefore, who must pay who to modify the actions taken by persons. As in the case of the ranch owner and crop farmers, if there is no a clearly defined land rights, the rancher may let its livestock to encroach and damage the crops of the farmer.

According to Demsetz (1967) – transactions in the market involve the exchange of two bundles of property rights: a bundle of rights often attaches to a physical commodity or service and the value of the rights which determines the value of what is exchanged. When you buy fruit, the seller is transferring the right to use the fruit – the physical good – to you so that you can consume it, give it to someone or feed your pet or you can through away. Once you bought, you can apply the bundle of rights on the physical good as defined by the property rights institutions. On the other hand, when you buy the fruit, you transfer the right on a given sum of money to the seller.

Property rights may be defined as:

"the capacity to call upon the collective to stand behind one's claim to a benefit stream" (Bromley 1991, 15),

"the claims, entitlements and related obligations among people regarding the use and disposition of a scarce resource" (Furubotn and Pejovich 1972).

While the first emphasize with the enforceability of the rights, the latter emphasize on the types of rights.

Although exact definitions of these rights vary, there are several key elements. First, property rights are fundamentally a social relation: they are not about the link between a person and a thing (object of property), but rather about the relations between people with regard to a thing, or more particularly, with regard to the benefit stream that is generated. Unless others respect one's property rights, they are meaningless. Thus, all property rights are associated with corresponding duties of others to observe them. They are also frequently associated with specific duties of the rights-holder to do certain things to maintain the right to the resource.

Depending on the existing institutional framework, society can provide different types of rights on different types of resources and goods. The different types of resources include:

[1] A fictional autobiography first published in 1719 by Daniel Defoe about a person named Robinson Crusoe who spends years on a remote tropical island of Trinidad until rescued. This tale is usually used in many social science fields to represent a one-man world.

- use rights (usufruct) - controlling the use of the property;
- extraction rights - the right to capture the benefits from the property through, for example, mining or agriculture;
- transfer rights - the right to sell or lease the property to someone else;
- exclusion rights - the right to exclude someone from the property;
- encumbrance rights - the right to use property as security or for other purposes.

The property rights institutions thus define which of the above rights are assigned to whom and which of the others are assigned to whom. Society assign one or more of these rights to individuals leaving the others to groups or state. Property rights are the social institutions that define or delimit the range of privileges granted to individuals of specific resources, such as parcels of land or water. Private ownership of these resources may involve a variety of property rights, including the right to exclude nonowners from access, the right to appropriate the stream of economic rents from use of and investments in the resource, and the rights to sell or otherwise transfer the resource to others. Property rights institutions range from formal arrangements, including constitutional provisions, statutes, and judicial rulings, to informal conventions and customs regarding the allocations and uses of property. Such institutions critically affect decision making regarding resource use and, hence, affect economic behavior and economic performance.

The types of the rights, the assignment of the of the rights, the time horizon for which the rights will be effective, etc. depend on the existing the institutional environment and the type of the properties. The efficiency of the exiting property rights can be judged based on the following three important criteria:

1. *universality*—all scarce resources are owned by someone;
2. *exclusivity*—property rights are exclusive rights; and
3. *transferability*—to ensure that resources can be allocated from low to high yield uses.

Universality criteria imply that property rights for all scarce resources need to be clearly defined. If property rights for some resources is clearly defined leaving others poorly defined or undefined, the inefficiency in poorly defined resources can be transmitted into those properties whose rights are clearly defined. For example, establishing a clear property rights on capital and labor may not bring efficient utilizations of resources if for example the property rights for land is poorly defined or left undefined. Moreover, property rights focus on physical resources ignoring intangible property rights such as intellectual property rights. In a condition where individuals cannot invest on their resource and effort if they cannot capture the benefits of their inventions and creative works.

The other criteria is *exclusivity*. Non-exclusive right are rather meaningless. A given resource is non-exclusive means anyone member outside those to whom the property is assigned can also use the resource, appropriate the benefits, etc. Unless the right holder is able to exclude other non-right holders, the mere assignment of the right on given property to an individual or group will not provide the right incentive to exploit the full potential of the resource.

Transferability provide a great deal of incentive to the right holders. The fact that one resource can be transferred means, it can be used for collateral, future security and the like. It thus provide right holders the incentive to make long term investment to improve the resource. Land it a good example. If the owner of land cannot transfer the land, it implies that the will have less incentive to invest to improve the land. The result will be that the land will rapidly degraded.

Property rights can be assigned to individuals (firms), groups or government. Though mix of these assigments always exist in any society, the extent at which most properties are assigned to individual or collective (group, public or state) depend on the specific economic and political setting of the country. In every society including advanced market economies, there are some resources which are communally owned. The choice between individual rights and regulated common property would probably depend on such factors as transaction and enforcement costs, environmental and technological factors, and distributional considerations.

The classifications of economies into market, command and mixed economic system is largely based on the dominancy of private or common property rights and the allocation mechanism that emanates from it. A market economic system can then simply be described as one where private property rights and the market mechanism dominate, while a centrally planned economic system is dominated by state or collective ownership and bureaucratic co-ordination. In the so-called market economies for instance, the institutions of private property rights assign most of these rights for most of the properties (including land) to individuals (or firms) and accordingly market forces determine the allocation, the exchange and distribution processes.

One of the important contributions of NIE is it shows the role of property rights institutions in determining the performance of economies across space and time. Property rights are a fundamental institution governing who can do what with resources. Therefore an essential part of development policy is the creation of polities that will create and enforce efficient property rights.

By economically efficient property rights are where the partitions of property rights are grouped into appropriate bundles and assigned to the transacting party who is most capable of efficient production (utilizing that bundle), and the property rights that compose those bundles will be grouped so that appropriate economic incentives are created for owners of each bundle of property rights. By assigning to valuable resources and by designating who bears the economic rewards and costs of resource-use decisions, property rights institutions structure incentives for economic behavior within the society. In effect, costs of making transactions will be lower and help for the market to develop.

Since it is costly to measure all attributes of asset accurately, rights are never fully delineated, and property is consequently in danger of appropriation by others due to adverse selection, free-riding behavior, and shirking, among other reasons. The efficiency of property right institutions is thus depend on their capacity to reduce these transaction costs. Even if property rights institutions are efficient in this respect, exploiting the full potential of economic opportunities require efficient long-term contract institutions. Consider rental contracts. Even where the rights of the renter can be perfectly specified in advance, if the costs of monitoring compliance (asymmetric information) and measuring the degree of that compliance (measurement costs) are significant, the renter will be able to appropriate some economic benefits from the contractual relationship despite perfect specification of property rights.

Setting aside the argument in favor or against private property rights, property rights need to be clearly defined and enforced. One of the critical problems of developing countries in general and sub-Sahara African countries in particular is that they lack institutions that enforce contracts impartially and secure property rights over the long run. These countries even if they have considerable resource base, the institutional environment is such that the

gains from investment, specialization, and trade are so small to provide economic agents sufficient incentive.

6.6.1. Private properties

Most resources are provide the right incentive for efficient allocation and use. Generally properties will be used more efficiently when they are privately owned than when they are communally owned. Both the history of advanced Western countries and the experience of former socialist countries show that sustainable and rapid economic progresses can be better achieved under private ownership. Given the general behavior of human being is self-interest seeking, privately owned resources provide more individual incentive that collectively or communally used resources. But in addition to this, the opportunistic behavior of human being provide undesirable incentive to take free-riding actions in a collectively owned properties. While private ownership provides individual better economic incentives by aligning individual efforts with individual net-gains, such misalignments are quite likely in most communally owned properties. The efficiency argument in favor of private property rights is based on the assumptions that private costs and benefits are equal with social costs and benefits. It is based on Adam Smith's famous statement "By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it.". But there are cases where societal costs or benefits individual actions exceed private costs and benefits. In such situations individuals will promote self-interest which is against the interest of the society.

The property-rights school argues for the formalization of property rights in land, which is argued to be the most important step toward intensification of agricultural practices and thus critical for agricultural and economic growth. It is argued that well-defined (implying private) property rights guide incentives to achieve a greater internalization of externalities and thereby create opportunities to access finance and enhance efficiency in land markets. For economic specialization to develop, it is thus important that well-defined property rights are established and that suspicion and fear of fraud do not pervade transactions.

6.6.2. Common ownership property

While experience revealed that private ownership of property rights provide an appropriate incentive for economic efficiency, some resources can still be used more effectively and sustainably under a regulated communal property regime. Theories of public resources provide an important justifications for communal ownership of properties.

Ellinor Ostrom makes a distinction between *common pool resources* and *common property*. While *common-pool* resources or shared resources are types of economic goods, independent of particular property rights, *common property* on the other hand is a legal regime - a jointly owned legal set of rights. Based on empirical findings, she sets out the important principles for efficient use of common-pool resources. These principles are:

- Clearly defined boundaries should be in place.
- Rules in use are well matched to local needs and conditions.
- Individuals affected by these rules can usually participate in modifying the rules.
- The right of community members to devise their own rules is respected by external authorities.
- A system for self-monitoring members' behavior has been established.
- A graduated system of sanctions is available.

- Community members have access to low-cost conflict-resolution mechanisms.
- Nested enterprises—that is, appropriation, provision, monitoring and sanctioning, conflict resolution, and other governance activities—are organized in a nested structure with multiple layers of activities.

However these principles are sound for effective and sustainable common-pool resources, the challenge is on how to achieve these collective actions. The most of the common-pool resources sub-Sahara African countries fail to fulfil these requirements. First, the boundaries of most common-pool resources are poorly defined and poorly enforced. As a result, conflicts and disputes arise between communities and groups. Particularly, this is the main source conflicts in the pastoralist areas of these countries.

Secondly, the challenge is to match the rules to local needs and conditions. This may not lead to a closed system, the closed system will perpetuate inefficient common-pool resource use. Given that knowledge is gained through the process of continuous sifting of old beliefs and traditions, and such process spurs when society is exposed to different perspectives and becomes open, nothing insure that the rules are matched with the needs and conditions.

The other concern is on the role of individuals in modifying the rules. Given the status based relationship prevailing in most African societies, it is also difficult to insure the modifications of the rules will be participatory. Simply respecting the rules designed by local communities suffer from similar problems.

Collective action will be effective when members have self-monitoring behavior. True, if local institutions are effective in incentivizing such behaviors, the collective action may be effective. To what extent individuals develop such behavior and what types of institutions are effective in incentivizing members to develop such behaviors is not well understood. Moreover, when such behavior prevail, in some cases the outcomes of the behavioral pattern not be efficient.

The other point is graduated sanction system for inappropriate behaviors. Though informal institutions constrain some opportunistic actions that seriously harm collective interest, in some case the applications usually depend on social status (largely acquired one) and lack fairness. In addition, the constraints also constrain freedom of individuals whose outcomes would be less than it would otherwise when individuals are left to promote their self-interest. In some cases, the conformity and closer that are required for effective collective actions turn out to have unintended effects of limiting economic opportunities of society to transact outside the groups.

In a condition where external involvement are limited and most decisions and powers are left to local parties and informal institutions, there is nothing that ensure that the internal system will evolve toward an efficient common-pool resources. Nor there is nothing that ensure fair assignment of and enforcement of property rights For instance, the institution that protect private property right of its own members may not, equally and in the same way, protect the private property rights of, say, outsiders. Even within a community, the institution that protect private property rights of individuals with high social status or men may not protect (or even deny) the private property rights of certain group members such as marginalized group or women.

All these are not to say all informal institutions and local governance are replaced by formal institutions and external governances. Such external interventions and top-down approaches

have been experimented and found ineffective. Yet critical formal institutions that encourage free mobility of resources and goods and that ascertain the fair treatment of members (e.g. minorities and women) are still crucial to integrate society with the wider markets. .

Most of these arguments used in the theory of social network apply to the theory of collective actions.

The property-rights school also argues that rights, institutions, and technologies should adapt in some optimal manner to population pressure and growing resource scarcity, which are undermining the sustainability of open access and unregulated common-property resources. However, those changes need not always be in the direction of privatization, as assumed by the property-rights school.

Poorly defined common property rights has two economic disadvantages: First, because property rights to the resource are not assigned, individuals in their production decisions do not have to consider the full social costs of their activities. Further, competitive pressures under conditions of poorly defined property rights encourage short-time horizons in production. If for example the land rights are poorly defined, farmers can be discouraged to make long term investment activities to improve the land. The economic incentive to invest (e.g., in new technology) is reduced because investors cannot anticipate that they will capture any of the resulting economic returns due to insecure property rights. Second, resource values fall because exchange and reallocation of the resource to higher valued uses become more costly and less effective if property rights are absent.

How institutions of property rights arise? An important insight of property rights theory is that different specifications of property rights arise in response to the economic problem of allocating scarce resources, and the prevailing specification of property rights affects economic behavior and economic outcomes. Whether the emerged institution is promote economic efficiency or not is an empirical question. As NIE suggest, a comparative institutional assessment of the economic costs and benefits of each specification of property rights is needed.

6.7. Property rights and the Coase theorem

The starting point of Coase theorem is externalities. An externality occurs when a producer or a consumer affects the production or consumption activities of others in a manner that is not directly reflected in the market. In the case of negative externality, the marginal social costs production exceed the marginal private costs. In order to force the private producer to internalize its externalities, Arthur Pigou suggested to that an amount of tax that is equal to the difference between the marginal social costs and marginal private costs. Such tax has come to be known as Pigovian Tax. Coase's argue that this such tax would be unnecessary if property rights are well defined and transaction costs were zero.

Using a thought experiment where neighboring rancher and crop producer can bargain for possible externalities, he showed that if property rights were well-defined, the two can reach an agreement where externalities will be internalize without the involvement of government. Through bargaining process, they can agree on terms where a party causing external damage can pay the other for its external damage. He also showed that in the absence of transaction costs, the outcomes will be efficient irrespective of the initial assignment of property rights. This observation is the essence of what has been labeled the Coase Theorem.

He also showed that, in the absence of transaction costs, the outcome would be efficient and equitable regardless of who owns the property right.

His theorem can also be extended to all misallocation problems in that if one assumes rationality, no transaction costs, and no legal impediments to bargaining, *all* misallocations of resources would be fully cured in the market through bargains process.

In reality however bargaining between boundly rational and opportunistic parties involve transaction costs, different systems of property rights may yield different outcomes in terms of efficiency and equity.

Activity

Taking the case provided in chapter 3 about neiboring rancher and crop producers, discuss the potential transaction costs involved in the bargaining and explain the implications of this allocation in determining the efficiency level of the outcomes and the resulting distributional effects.

6.8. Property rights institutions and economic performance

The role of property rights in determining economic performances by providing the basic economic incentive system that shapes resource allocation was recognized. What has been largely missing is why property rights take the form that they do. In this respect, important literatures such as Anderson and Hill, 1975; Libecap, 1989; North, 1990 provide important insights on the evolutionary perspective property rights institutions. These literatures show the historical processes through which institutional choices are made. The concept suggest that the potential distributional conflicts among contracting parties that arise from a given property rights institutions can help to explain for the persistent of inefficient property rights regimes. Political institutions in political and economic markets cause inefficient property rights institutions to emerge, but the imperfect subjective models of the actors as they attempt to understand the complexities of the problems they confront can lead to the persistence of inefficient property rights.

One of the crucial institutional weakness in sub-Sahara African countries is that property rights are poorly defined. Even most properties that are assigned as private property are poorly enforced. The demarcation between common and private properties are not clear. In addition, many of the common properties are open access properties. Land in most societies are either communally owned by communities or owned by State.

Questions these arise on what encourage society to move toward private property rights. Based on Leacock's archeological findings of American Indians and Labrador Demsetz (1967) argued that the emergence of private property rights is associated, historically and geographically, with commercial fur trades. For such private property rights to emerge, the externalities of free hunting (in a free access of animals to be hunted) by one imposes a larger cost than it was in the absence of trade on the next hunter. This will provide individuals in the society the incentive to consciously design a private property right regime or for such regime to spontaneously emerge as a result of the competitive pressure.

Libecap's (1989) proposed an analytical framework that explain how change in property rights institutions. He suggest that the change depend on how the various bargaining parties view the economic welfare effects of the proposed change relative to the status quo. A number of implications can be drawn from his analytical framework:

1. All things being equal, the greater the size of the anticipated aggregate economic benefits of institutional change (the greater the economic losses of the common pool), the more likely new property rights will be sought and adopted because it is more likely that a politically acceptable share arrangement can be devised by politicians to make enough influential parties better off so that institutional change can proceed.
2. The larger the number of competing interest groups, the more likely distributional conflicts will block or delay institutional change because the greater the number of competing interest groups with a stake in the new definition of property rights, the more claims that must be addressed by politicians in building a consensus for institutional change.
3. The greater the heterogeneity of competing interest groups, the more likely distributional conflicts will block or delay institutional change. Important differences across the parties in information regarding the resource, as well as in production costs, size, wealth, and political experience, will make the formation of winning political coalitions, and a consensus on the proposed assignment or adjustment of property rights, more difficult.
4. Distributional conflicts will be intensified if there are known serious information asymmetries among the competing parties regarding the evaluation of individual claims. These distributional conflicts will occur quite aside from any strategic bargaining efforts if private estimates of the economic value of current property rights and of potential economic losses from the new system cannot be conveyed easily or credibly to politicians and the other bargaining parties.
5. The greater the concentration of wealth under the proposed property rights allocation, the greater the likelihood of political opposition and the less likely institutional change will be adopted without modification by politicians. In these circumstances, enough influential parties may see their economic welfare made worse, or at least not improved, by the change that political support for such

6.9. Question for review

7. INSTITUTIONAL EVOLUTION AND ECONOMIC PERFORMANCE

7.1. Introduction

This chapter discusses the relationships between institutions and economic performances through time. The analysis is based on historical evolution of mainly Western countries. It draws on the influential Book of Douglas North (1990) 'Institutions, Institutional Change and Economic Performance'. It first show how institutions determine economic performances. It then discuss how institutional change and their path dependences. It shows the interplay between institutional matrix and organizations in determining the directions of institutional change and the resulting economic performances. It finally draw the implications of these discussions for sub-Saharan African countries.

7.2. Learning Objective

After reading this chapter, you will be able to:

Explain the relationship between institutions and economic performances;

Explain the relationship between organizations and institutions;

Identify the requirements that induce incremental institutional changes;

Relate the historical evidences of Western countries with the history of sub-Saharan countries; and

Draw important implications for in the future institutional changes of sub-Saharan countries.

7.3. Thematic Plan

7.4. Economic Performance through time

7.4.1. Economic Performances and Institutions

Currently, we see a wide variations in the economic development of countries in the world. Some countries are highly developed (most Western countries) while some others are less developed but growing fast (East Asian and some Latin American countries). Still some other countries are not only least developed, they can be much least developed in the future than they are now (most countries in the tropics especially sub-Saharan countries). Still some other countries are wealthy but less developed in terms of wider key socio-economic indicators. There are also wide variations in the ways the economies of these countries are organized and function and in the type and efficiency of institutions and organizations. Historical evidences indicate all these countries were more or less similar, if not equal, before some 10 millennia.

In the past, development economics attempted to explain the wide gaps and divergences in terms of capital and technological gaps and latter in terms of differentials in human capital.

Given the large potential capacity of less developed countries, the implications of the above theories are that attracting capital, adopting Western technologies and investing on human capital development will narrow the wide gaps. Despite the efforts made by most countries along these lines, the success in most countries was not as it was expected. Many countries are falling far behind the developed countries. Even if capital (physical and human) and technology play decisive roles in the development of countries, history showed us that they do not create the sufficient condition for development. Achieving development seems to be much more than increasing capital stock, adopting technology and educating people. Moreover, increasing capital stock and technology required unnecessary government interventions and complex macroeconomic policies. This motivated development economists and foreign donors to make one last attempt: through market deregulation. In the 1980s and 1990s, International Monetary Fund (IMF) and World Bank insisted the governments of developing countries to adopt what is called Structural Adjustment Program (SAP). Mainly to benefit from the conditionality loan that was made available for implementation of SAP, most countries adopted the blanket recommendations of IMF and the World Bank. As a result, key macroeconomic policy changes were made to deregulate the domestic and foreign market and to privatize economic activities. Since countries that fail to enact these programs were subjected to severe fiscal discipline, governments unwillingly took different measures to implement SAP. Accordingly, measures such as devaluation of local currency, reduction of trade barriers, privatizations, increase in tax and reduction in government spending and lifting subsidies were taken. Even if there were policy reversal in some of the countries, the program has changed the way economies were organized and function. However the recent progresses of some countries can be partly considered as the long term impacts of the program, its immediate adverse effects were evident. Many countries entered into serious macroeconomic shocks as a result of the program. The message was, *getting the price right* is not enough to bring sustainable economic development.

It was these and other unsuccessful experimentations that inspired many economists to search alternative theories. Among others, North identified a crucial element underlying the development divergences. The primary objective of his research is to achieve an understanding of the differential performance of economies through time.

North (1990) examines the nature of institutions and the consequences of institutions for economic and societal performance and then outlines a theory of institutional change, not only to provide a framework for ***economic history*** but also to explain how the past influences the present and future, the way incremental institutional change affects the choice set of decision makers at a moment in time, and the nature of path dependencies. He successfully showed, *getting institutions right* as an important requirement for the development of countries.

North (1990) offers a broad perspective on how institutions persist and change. In particular, North is concerned as much with explaining the evolution of institutional frameworks that induce economic stagnation and decline as with accounting for the successes. North ties together the threads and illustrates the relationships between *institutions*, *transaction costs*, and *transformation (production) costs*.

The transaction cost will reflect the **uncertainty by including a risk premium**, the magnitude of which will turn on the likelihood of defection by the other party and the consequent cost to the first party. Throughout history the size of this premium has largely foreclosed complex exchange and therefore limited the possibilities of economic growth.

Institutions provide the structure for exchange that (together with the technology employed) determines the cost of transacting and the costs of transformation. How well institutions solve the problems of coordination and production is determined by the motivation of the players (their utility function), the complexity of the environment, and the ability of the players to decipher and order the environment (measurement and enforcement).

The type of institution that emerges depends on various factors, including

1. power relations,
2. information structures,
3. the legal environment, and
4. historical accident and path dependence.

7.4.2.Institutional change

As discussed earlier, institutions can be divided into formal and informal institutions. While changes in formal institutions can occur rapidly, changes in informal institutions occur very slowly. Moreover, while changes in the formal institutions can be made through deliberate design, changes in informal institutions arise as spontaneous response to gradual changes in the nature of political, social or economic exchange.

Informal institutions are the norms, social conventions and codes of conducts widely prevailing in the society and constraining behaviors. The type of informal institutions that prevail at a given point in time depend on the dominant more of interaction of people in the social, economic, and political markets. Thus as long as the social, economic and political remained stable, informal institutions remain stable. Even if there are changes in the formal institutions, changes in the informal institutions may still persist. To what extent and at what speed the informal institutions change as formal institutions change depends on the speed and magnitude at which the change in formal institutions changes the configuration of the relationships in these markets. If for instance the introduction in a new legal rule has no effect in changing the configuration of the relationships in the social, economic and political markets, then informal institutions remain intact. But even if changes in formal rules are strictly enforced, adjustment of informal institutions to suite the mode of interactions the new rule require tend to be gradual.

He argues that institutional changes are overwhelmingly *incremental*. What makes institutional changes incremental? What kind of institutional changes induce incremental changes?

According to North, the reason that institutional change is overwhelmingly incremental is that the economies of scope, the complementarities, and the network externalities that arise from a given institutional matrix of formal rules, informal constraints, and enforcement characteristics will typically bias costs and benefits in favor of choices consistent with the existing framework. The organizations that come into existence particularly want to perpetuate the existing framework. When there are changes, these three factors (economies of

scope, complementarities and network externalities) bias policies that favor the interests of existing organizations.

If institutional changes are incremental, why then some countries stagnated? The direction of change is determined by path dependence. Path dependence means the past situation determine the future path. Stagnation perpetuate stagnation, decline produce decline and increment induce increment. Path dependence is produced by existing organizations: political, economic, social, and religious organizations. Organizations favor policy changes that favor their interest. In addition, the mental models of the actors – the entrepreneurs – produce ideologies that "rationalize" the existing institutional matrix and therefore bias the perception of the actors in favor of policies conceived to be in the interests of existing organizations.

External changes may weaken or strengthen the power of the existing organizations or it may give rise new organizations. But in some cases, unintended and unanticipated consequences of policy changes induced by the existing organizations could also weaken their power or bring new organizations with a different interest into power. In either case, if the change strengthen the power of the organizations, the direction of the change depend on the previous path – stagnating if it was stagnant, increasing if it was incremental, or declining if it was decremental. It is only when the external change or the unintended consequences of their policies weaken the power of existing organization and bring new organizations with a different interest the path will change. In this case, the path will change its course – turn upward if it was declining or downward otherwise. The critical actor(s) in such situations will be *political entrepreneurs* whose degrees of freedom will increase in such situations and, on the basis of their perception of the issues, give them the ability to induce the growth of organizations with different interests (or strengthen existing ones). Only when we understand these modifications in the behaviors of the actors can we hope to make sense out of the existence and structure of institutions and to explain the direction of institutional change.

The institutional framework fundamentally influences both what organizations come into existence and how organizations evolve. In turn, organizations influence how the institutional framework evolves.

The above conceptualization of institutional changes presume evolutionary (as opposed to revolutionary institutional changes). Note that from the perspective of developing countries, particularly of sub-Saharan African countries, it is not evolutionary changes that explain institutional changes. Rather institutional changes in these countries are largely marked by revolutionary events. Revolution arise when as a result of situations where no progress can be made from a lack of mediating institutions that enable conflicting parties to compromise their interests. In a situation where different groups are well-integrated in market, organizations may foresee the danger the of conflicts and cooperate in containing the conflicts through mediation or other means. But in fragmented and disintegrated societies like in sub-Saharan African countries, organizations may rather expect short-term gains from the conflicts and hence trigger conflicts than resolving it. Not only in such situations formal rules are weak in resolving conflicts, informal rules lack the norm of mediating conflicts. In economically disconnected and less integrated society, groups tend to have conflicting norms and conventions. Norms of hostility and ideologies that one group prejudice the other. In such situation, the mental model that interprets everything in terms of ‘they’ and ‘we’ coupled with the bounded rationality of human agency, actors fail to see the long term adverse consequences of conflicts. In effect they can devote resources that trigger the conflict or at least fail to devote resources for its resolution.

But it also important to note that revolutionary changes are not revolutionary as its rhetoric would have us believe. In fact, revolutions attempt to turn most things up-side down. The intention is to change the configuration of almost everything. The immediate change is mostly change in formal rules. To what extent this will change the relative power of organizations, bring new organizations with a different interest, change the actors with a different mental model, and change the mode of interactions depend largely on the change in informal institutions which are mostly resistant to rapid changes. Formal rules may change overnight, but informal constraints do not.

Although formal rules may change overnight as the result of political or judicial decisions, informal constraints embodied in customs, traditions, and codes of conduct are much more impervious to deliberate policies. These cultural constraints not only connect the past with the present and future but also provide us with a key to explaining the path of historical change.

Activity

Taking one of the great revolutionary changes occurred in your country in the past few decades, briefly describe the revolutionary change (the conflicting parities, what triggered it and how it occurred). Then discuss on the following issue:

1. List the major changes in formal institutions and their enforcement characteristics?
2. Did these changes changed the power of the existing organizations?
3. Did it change the composition of different actors?
4. Did these changes brought new organizations with new interest?
5. In what way and to what extent informal institutions (norms, conventions and codes of conduct changed)?

When do institutions tend to be incremental. Incremental institutional change, however it may be revolutionary or evolutionary, arise when there are institutions that *reduce transaction costs, that protect and enforce property rights and contracts*. Institutions will be so when they effectively constrain opportunism, incentivize commitment and reduce information asymmetries. In addition, institutional change will be incremental when there are institutions that encourage productive activities instead of distributive activities. There need to be institutions best permits capturing the economic gains from trade. Such institutional context promote economic progress.

Factors that perpetuate institutions:

- Rational actors may choose to reproduce institutions, including suboptimal ones, as the costs of transformation outweigh the benefits.
- Institutions may persist because they serve certain beneficial functions.
- Actors may perpetuate institutions based on their subjective understandings and beliefs of appropriateness and morality.
- An institution may persist if its beneficiaries have sufficient strength to sustain it. Institutions are not neutral, and they distribute benefits and costs unevenly across society. Differentially endowed actors have conflicting interests with regard to the perpetuation of institutions.

Unlike most developing countries, the development of Western countries is the evolutionary, and sometimes revolutionary, changes toward efficient institutions that handle complex exchange and stimulated technological progress, that incentivize productive activities and

discouraged distributive activities, that emphasized efficiency more than equity, that promote economic cooperation instead of conflicts, that widen the set of choices and opportunities and above all that created rule abiding society. The source of Western civilization is the development of impartial and efficient institutions that created extended order that respect several property. Studies in the economic history of Western countries since the medieval Europe in the 11th century Mediterranean caravan trade (e.g. Grief, 1989) is characterized largely by incremental changes (with some trajectories). The current wide divergence between countries has not occurred all at once but it is the result of institutional changes that evolved in different paths. While countries of the world were more or less similar, they have evolved into radically different religious, ethnic, cultural, political, and economic societies in the last 10 millennia. In sum, history matters not just because we can learn from the past but also because the present and the future are connected to the past by the continuity of a society's institutions.

What is the main message of the above discussions? The main message is that if sub-Saharan African countries continue to perpetuate inefficient institutions that cannot handle complex transactions, that fail to protect property rights (physical and intellectual properties), fail enforce contracts, that fail to discourage opportunism, that fail to incentivize commitment, that fail to encourage productive activities and undermine distributive activities, that narrow economic opportunities and that fail to create a rule abiding society, as in the past, the current gap will continue to increase. Nothing will assure Africa will not be colonized again one way or another.

7.5. Summary

7.6. Question for Review

7.7. References

Aligning learning objectives to assessment and measurement methods

When deciding on what kind of assessment activities to use, it is helpful to keep in mind the following questions:

- What will the student's work on the activity (multiple choice answers, essays, project, presentation, etc) tell me about their level of competence on the targeted learning objectives?
- How will my assessment of their work help guide students' practice and improve the quality of their work?
- How will the assessment outcomes for the class guide my teaching practice?

This table presents examples of the kinds of activities that can be used to assess different types of learning objectives, and the ways that we can analyze or measure performance to produce useful feedback for teaching and learning. The categorization of learning objectives is taken from the revised Bloom's Taxonomy.

Type of Learning Objective	Examples of Types of Assessment	How to Measure
Remember Students will be able to: • recall • recognize	• Objective Test items that require students to recall or recognize information: o Fill-in the Blank o Multiple Choice items with question stems such as, "what is a…", or "which of the following is the definition of) o Labeling diagrams • Reciting (orally, musically, or in writing)	• Accuracy – correct vs number of errors • Item Analysis (at the class level, are there items that had higher error rates? Did some items result in the same errors?)
Understand Students will be able to: • interpret • exemplify • classify • summarize • infer • compare • explain	Papers, oral/written exam questions, problems, class discussions, concept maps, homework assignments that require (oral or written): • Summarizing readings, films, speeches, etc. • Comparing and/or contrasting two or more theories, events, processes, etc. • Classifying or categorizing cases, elements, events, etc., using established criteria • Paraphrasing documents or speeches • Finding or identifying examples or illustrations of a concept, principle	Scoring or performance rubrics that identify critical components of the work and discriminates between differing levels of proficiency in addressing the components
Apply Students will be able to: • execute • implement	Activities that require students to use procedures to solve or complete familiar or unfamiliar tasks; may also require students to determine which procedure(s) are most appropriate for a given task. Activities include: Problem sets, performances, labs, Prototyping, Simulations	Accuracy scores, Check lists, Rubrics, Primary Trait Analysis
Analyze Students will be able to: • differentiate • organize • attribute	Activities that require students to discriminate or select relevant from irrelevant parts, determine how elements function together, or determine bias, values or underlying intent in presented materials. These might include: Case studies, Critiques, Labs, Papers, Projects, Debates, Concept Maps,	• Rubrics, scored by instructor, juries, external clients, employers, internship supervisor, etc. • Primary Trait Analysis
Evaluate	A range of activities that require students to test, monitor,	• Rubrics, scored by

Students will be able to: • check • critique	judge or critique readings, performances, or products against established criteria or standards. These activities might include: Journals, Diaries, Critiques, Problem Sets, Product Reviews, Case Studies.	instructor, juries, external clients, employers, internship supervisor, etc. • Primary Trait Analysis
Create Students will be able to: • generate • plan • produce	Research projects, musical compositions, performances, essays, business plans, website designs, prototyping, set designs	• Rubrics, scored by instructor, juries, external clients, employers, internship supervisor, etc. • Primary Trait Analysis

Topic 1: The Agricultural Development Challenge: Stylised Features

This will largely be a background section to familiarize students with the main problems and challenges facing African agriculture. The idea here is to illustrate the shortcomings of the current approaches in addressing African agricultural development challenges and emphasizing the need for an alternative economic paradigm to be able to find solutions and sustainable interventions.

Topic 2: New Institutional Economics (NIE): Distinctive Features and Overview of its Concepts

- New Institutional Economics versus Neo-classical Economics
- Emergence of New Institutional Economics
- New Institutional Economics versus Old Institutionalism
- Branches of New Institutional Economics

Topic 3: Analysis of Institutions in Development: Evolution, Functions and Outcomes (performance)

- Definition of Institutions and how they are Different from Organizations
- Emergence of Institutions and Institutional Change
- Theory of Induced Institutional Innovation
- The Framework for Analysing Institutions
- Assessing Performance of Institutions
- Incomplete contract theory and principal-agent problems

Topic 4: Property Rights and Related Theories:

- Property rights, Property Rules and Property Systems
- Evolutionary Theory of Land Tenure,
- Coase Bargaining Theorem (bargaining approach to handle externalities)
- Application of Coase Bargaining Theorem in Agriculture and Natural Resource Management
- Hardin's Tragedy of the Commons and the Problem of Open Access
- Case Studies of Application of Property Rights in Agriculture and Rural

Topic 5: Behavioural Economics: Review of Relevant Concepts

- Linking Psychology to Behaviour of Economic Actors
- Revisiting Theories of Bounded Rationality and Rational Choice (Behaviour)
- Concepts of Unbounded Willpower and Unbounded Selfishness
- Pure Altruism vs Reciprocal Altruism
- Motivation Crowding Theory
- Review of Game Theories (e.g., Prisoners' Dilemma, Non-cooperative game Theory, Cooperative Game Theory, Evolutionary Game Theory, and Adaptive Learning Models) and their Application
- Behavioural Gender Differences in Agriculture and Natural Resource Management
- Case Studies of Application of Behavioural Economics in Agriculture and Rural Development

Topic 6: Theories of Collective Action and Social Capital

- Definitions of Collective Action and Social Capital
- Linking Collective Action to Social Capital
- Empirical Measurement and Application of Collective Action and Social Capital
- Collective Action in Natural Resource Management
- Pervasive Social Capital
- Case Studies of Application of Collective Action and Social Capital in Agriculture and Rural Development

Topic 7: Transaction Costs in Smallholder Agriculture and Natural Resource Management

- The Theory of Transaction Costs
- Distinguishing Transaction Costs from Production Costs, Transport Costs and other Concepts

- Applications of Transaction Costs Framework
- Attributes of Transactions
- Empirical Measurement of Transaction Costs and Case studies

Topic 8: NIE Analysis of Markets, Market Structure and Market Coordination

- Commodity Characteristics: Asset Specificity, Frequency of Exchange, Uncertainty, etc.
- Market Failures and Missing Markets
- Alternative Institutions to Counter Market Coordination Failures
- Contracting in African Agriculture: Process, Failures and Enforcement
- Horizontal and Vertical Coordination
- Case Studies of Market Coordination

Topic 9: The State: Political and Institutional Determinants of Development

- The Elements of Political Economy and Public Choice Theories
- The Concepts of Rent-Seeking, Corruption and Rational bureaucracy
- Lobbying Incentives
- The Political Economy of Agricultural policy
- Pathways to a Developmental State
- Approaches of Analyzing the State
- Case Studies of Application of Political Economics in different developing countries